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Management Data Series Number 151
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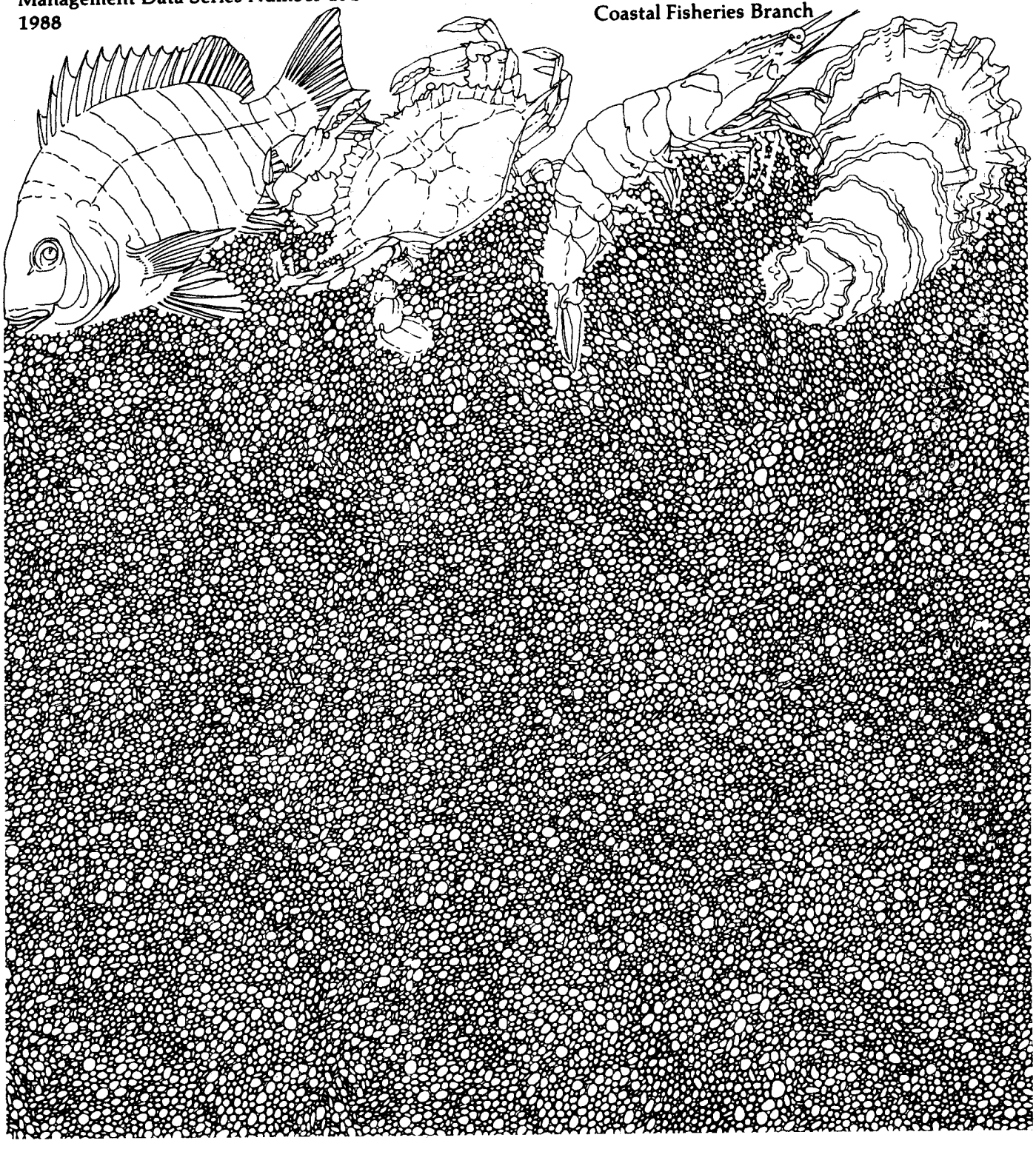

CHARACTERISITICS, ATTITUDES AND PREFERENCES OF SHORE-BASED SPRING BLACK DRUM ANGLERS IN GALVESTON BAY, TEXAS

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ABSTRACT

Anglers fishing from shore during March 1982 were interviewed on-site during the spring black drum (Pogonias cromis) "run" in Galveston Bay. Most (84%) of the 337 anglers interviewed reported black drum as the primary species they were fishing for "on this trip". However, only about 4% of the drum anglers reported black drum as the most important species sought throughout the year. Black drum anglers spent about $275 for reels, rods, and tackle per person during the previous year. Their combined purchases in the previous year totaled $77,600. Black drum anglers ranked the relaxation aspect of fishing the highest among 15 reasons for fishing. No significant differences were revealed among the next four reasons for fishing: "to be outdoors, for the challenge or sport, to get away from the regular routine and for the experience of the catch". Most anglers were either neutral or in agreement with the phrase "it doesn't matter to me what type of fish I catch" and "I'm just as happy if I don't keep the fish I catch". The majority of black drum anglers felt that current restrictions were adequate. Less than 20% supported gear or size limits for black drum, but 40% thought there should be a possession limit.

INTRODUCTION

Large (>9 kg) black drum (Pogonias cromis) move into Texas estuaries during February and March to spawn (Simmons and Breuer 1962). Some anglers actively seek the fish during this annual spawning "run" (Campbell-Hostettler 1982). The objective of this study was to determine the characteristics, attitudes, and preferences of shore-based anglers fishing during the black drum run.

MATERIALS AND METHODS

Anglers who fished in the Galveston Bay system from shore during the black drum "run" in 1982 were interviewed on-site during their fishing trips. Interviewers focused on three primary fishing sites: Galveston Island East Beach Jetty (near an area locally known as "the Drum Hole"); Sea Wolf Park; and the Texas City Dike pier. Less frequently, occasional fishermen were interviewed along the Texas City Dike groin. Bait camp and pier operators who monitored catches as they occurred were routinely contacted to determine when the "run" began. Once the run was well established, anglers were selected to participate in the study during March based on their presence at sites where large drum have historically been caught (Campbell-Hostettler 1982). Interviews were conducted by staff and graduate students from the Marine Recreation Research Lab of the Department of Recreation and Parks at Texas A&M University. Once a site was chosen, interviewers systematically covered the site soliciting cooperation with the survey. Interviewers used some discretion in selecting people to interview based on equipment and location. However, this "filtering" was minimal.

The sample was to some extent "self-selected". Anglers who chose to fish for drum at the particular time and place sampled selected themselves to participate in the survey. This form of sampling is known as "purposive" sampling because individuals with certain characteristics (i.e., fishing during a drum "run") were selected (Selltiz et al. 1976). It was also a "rare elements" sample (Smith 1975), i.e., the proportion of black drum anglers in the population is low enough that the only efficient way to obtain a large sample was on-site interception during a "run". The sample is not strictly a random sample, although the 300+ surveys averaged out many unintended biases (Kerlinger 1973). The results of this survey pertain to the sample itself, with generalizations to a larger unidentifiable population of black drum anglers limited by uncertain representativeness (Selltiz et al. 1976). A particular advantage of this research is that only anglers who were actively fishing during the drum "run" were surveyed. Over a 3-week period, 337 anglers were interviewed successfully. There was a refusal rate of 6%. Data presented are for those anglers who were fishing for black drum mainly on their current fishing trip unless otherwise noted. There was minimal reliance on recall of earlier trips.

The survey instrument (Appendix A) included questions about preferences for fish species, fishing frequency in freshwater and saltwater, reasons for fishing (after Driver 1977), attitudes towards catching fish (after Graefe 1977), interest in fishing information, satisfaction with fishing, sociodemographic variables, and several management-related items.

Frequency distributions were generated for study variables. Differences between ranked means for motivational and attitudinal items were determined with Duncan's Multiple Range Test (Kirk 1982).

RESULTS

Shore-based anglers who were predominantly seeking black drum on their current trip ("drum run" anglers) were intercepted. Of the 337 anglers contacted, 282 (84%) reported black drum as the primary species sought "on this trip". For 228 (81%) of these "drum-run" anglers, black drum was the only species sought on the trip; 10% were seeking anything they could catch and 9% were also seeking other selected species. Most (95%) "drum-run" anglers had fished previously in 1981. They went fishing an average of 63 days in 1981 (Table 1). Nearly twice as many days/year (41 days) were spent fishing from shore and piers in saltwater than from boats in saltwater and from all platforms in fresh water (Table 1).

Only 4% of the "drum-run" anglers sought black drum throughout the year (Table 2). Red drum (Sciaenops ocellatus) and spotted seatrout (Cynoscion nebulosus) were the most popular fishes sought by these anglers during the year; about 30% of the anglers were seeking one of these species. Black drum were about as important as spotted seatrout, red drum, and "other" species as the second most sought species during the year. Over 90% of the anglers had fished the "drum run" at least one previous year; most had fished the "run" 5 years or less (59%) (Table 3).

The shore-based "drum run" in Galveston attracted primarily local males (95%) who are 20 to 40 years old working in skilled or semi-skilled trades with middle class incomes and who like to fish with a small group of friends. About 18% were fishing by themselves, 41% with one other person, 31% with two or three others and 10% with four or more. At least 99% were Texas residents with 60% from Houston and 29% from Galveston. Most (65%) worked in skilled or semi-skilled trades with 20% from professional technical fields. Mean age was 32 but the largest age block was the 21-30 age group (43%). Mean household income was about $36,000 with 30% making under $20,000 and 15% making $50,000 and above. Most (93%) were not employed in a sport fishing related business.

"Drum-run" anglers spent about $275 in 1981 on reels, rods, and tackle. On average, each angler spent about $90 in 1981 on each of the first three equipment categories (Table 4). The combined equipment purchases of this group of black drum anglers for 1 year were $77,600.

Approximately 80% of the respondents rated "relaxation" as a very or extremely important reason for fishing (Table 5). No significant difference was detected among means for the next four reasons: "to be outdoors, for the challenge or sport, to get away from the regular routine and for the experience of the catch". Most (>70%) "drum-run" anglers rated these four statements as very or extremely important. Only 40% rated "to obtain fish for eating" as very or extremely important (Table 5).

Although 70% of the respondents agreed with the statement "the more fish I catch, the happier I am", only 48% agreed that "the more black drum I catch, the better the fishing trip (Table 6)". About 80% of the "drum-run" anglers agreed "a fishing trip can be successful... even if no fish are caught". No significant differences were detected among means for the three highest rated statements about fishing. About 40% preferred to retain their fish to releasing them or a neutral stance on the question.

Almost 70% of the "drum-run" anglers did not know who manages the fish population in Texas bays (Table 7). However, they generally agreed with the management (Table 8). About one-third of the respondents correctly identified Texas Parks and Wildlife by name whereas another 3% came close with fish and game wardens. Another 4% named various other agencies (e.g., Coast Guard, Department of Natural Resources, Park Service). Thirty percent of the respondents admitted they did not know.

Slightly more than 50% said they agreed with the state's saltwater fishing policies and regulations (Table 8). Approximately 25% said they disagreed with these rules. About 70% of the respondents said they felt current harvest restrictions provide them with the opportunity to catch the size and number of fish they wanted. Most anglers (65%) who disagreed cited the need for less regulation of sport fishermen as the major change needed (Table 9).

Most "drum-run" anglers did not consider gear restrictions, size limits, or bag limits necessary in the black drum fishery. Of the 282 fishermen who were fishing for black drum, there was little support for restricting gear or for imposing size restrictions. However, 40% of the respondents thought there should be limits on the number of black drum retained (Table 10).

"Drum-run" anglers generally indicated there was an adequate number of access sites, but if more sites were needed they should be constructed by the public sector. Access was adequate for 78% of the respondents (Table 11). Among those who thought that access was inadequate (20%), there were varied suggestions as to what should be increased. About 30% thought more piers or jetties would be desirable, 23% mentioned public parks, 11% wanted no fees and 9% wanted more boat ramps. When given a choice between public or private sectors to correct

inadequate access, about 66% were in favor of the public sector whereas 22% thought that private enterprise should accept this responsibility. The remaining 12% were ambivalent and felt that both sectors should be involved in improving access or did not know (Table 12).

Crab and shrimp were primary baits used; supplies were considered adequate by most (83%) anglers (Table 13).

DISCUSSION

The field intercept technique was successful in obtaining a sufficient sample of black drum anglers despite difficulties encountered in identifying precise times the Galveston "run" occurred for sampling purposes. Efforts to sample participants in other pulse events (red drum and spotted sea trout "runs") in 1982 were unsuccessful in that a time frame for interviewing purposes could not be identified. Extent of non-response to interview questions was minimal compared to other angler studies in Texas that used mail questionnaires for data collection (i.e., Ditton and Fedler 1983; Ditton and Holland 1984; Ditton and Gramann 1987). The present study provides a prototype for other field studies of anglers that target a particular species.

As a group, anglers that participated in the 1982 black drum "run" exhibited a higher level of avidity than the general population of saltwater anglers. Mean number of days of annual fishing for black drum anglers (63 days) contrasts with the statewide population of saltwater anglers which fished an average of 43 days in the previous 12 months (Ditton et al. In Preparation). They also contrast sharply with the findings of the U.S. Fish and Wildlife Service (1982) which reported an average of 19 days/angler/year in Texas. When a sample of saltwater boat anglers in the Galveston area was compared with the sample of shore-based black drum anglers using Graefe's (1981) classification of fishing frequency, 32% of the saltwater boat anglers reported >33 total days of fishing in the previous 12 months (high and very high frequency categories combined) compared to 62% of the shore-based black drum anglers with the same reported level of avidity. Black drum anglers also contrast with a statewide sample of saltwater anglers where 34% of the respondents reported >33 days of fishing in the previous 12 months (Ditton et al. In Preparation). An alternative explanation for the higher proportion of more avid anglers in the black drum sample is the matter of on-site bias where more avid anglers have a greater probability of being intercepted on site than less avid anglers (Brown 1977).

When black drum anglers' reasons for fishing were ranked by mean score, the four highest ranked items were not unlike those for other groups of Texas saltwater fishermen (Fedler 1984). However, statistical tests revealed no significant differences in black drum angler means for the four items following the highest ranked item ("for relaxation"). This results in an interpretation different from previous work, namely, that "challenge and sport" and "experience of the catch" are ranked

higher in importance among general reasons for fishing. Responses of black drum anglers to a series of statements on the importance of catching fish revealed agreement with a statewide sample of saltwater anglers (Ditton et al. In Preparation) on the six most highly ranked attitudinal items (where items were comparable).

Fewer (59%) black drum anglers chose spotted seatrout and red drum as their most important species sought than a statewide sample of saltwater anglers (74%) (Ditton et al. In Preparation). Because of their greater involvement, more avid anglers would be expected to have a higher annual level of investment in fishing tackle and equipment. When expenditure data were standardized (in 1986 dollars), black drum anglers and a statewide sample of saltwater anglers spend $107 and $42 for reels, $101 and $41 for rods and $105 and $41 for fishing tackle, respectively (Ditton et al. In Preparation).

Specialization theory (Bryan 1977) suggests a typology where anglers are arranged along a continuum reflecting their experience with and commitment to fishing from beginning novice to specialist. Graefe (1980) confirmed that anglers who fished most had greater involvement in fishing, higher levels of skill, participated in a wider variety of fishing setting and differed in attitudinal orientations. When compared with the general population of saltwater fishermen, black drum anglers as a group appear to be more highly specialized except for their motivational and attitudinal orientations.

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Table 1. Number and percent of black drum anglers by days spent fishing in 1981 in salt and freshwater from shores and boats.

Days[a]	Saltwater pier		Saltwater shore		Saltwater boat		Freshwater boat		Freshwater w/o boat		Total	
	no.	%	no.	%	no.	%	no.	%	no.	%	no.	%
0	78	28	78	28	118	42	194	69	166	59	15	[c]
1-13	106	38	96	34	99	35	60	21	78	28	37	14
14-33	51	18	54	19	40	14	16	6	30	11	64	24
34-63	24	9	31	11	18	6	7	2	4	1	68	25
>63	23	8	23	8	7	2	5	2	4	1	98	37
Total	282[b]	101	[illegible]	100	[illegible]	99	282	100	[illegible]	100	[illegible]	100
Mean	19		22		10		5		6		63	
Mode	10		10		10		5		5		30	

[a]Categories of fishing frequency >0 are based on Graefe (1980).

[b]Missing values treated as zeros.

[c]For the total, percent of anglers were calculated without the 0 category to enable comparisons with other data sets.

Table 2. Number and percent of black drum anglers who responded that each species was the first and second most important sought during year.

Species	Most important		Second Most important	
	no.	%	no.	%
Spotted seatrout	85	31.3	45	18.8
Red drum	76	28.0	44	18.4
Anything I can catch	20	7.4	1	0.4
Flounder	12	4.4	28	11.7
Black drum	11	4.0	54	22.6
Shark	9	3.3	5	2.1
Jackfish	9	3.3	7	2.9
Freshwater fish	9	3.3	0	0.0
King mackerel	0	0.0	11	4.6
Ling	0	0.0	8	3.3
Other	41	15.1	36	15.1
Total	272[a]	100.1	239	99.9

[a]10 anglers did not indicate the most important species sought and 43 anglers did not indicate second most important species sought.

Table 3. Number and percent of black drum anglers who had previously fished "drum run" in Galveston Bay.

Previous fishing (years)	no.	%
0	27	9.6
1	65	23.1
2	31	11.0
3	29	10.3
4	14	5.0
5	27	9.6
6-10	44	15.7
11-20	33	11.7
21-30	7	2.5
>30	4	1.4
Total	281[a]	99.9

[a]1 angler did not respond.

Table 4. Number and percent of black drum anglers who spent money on three categories of fishing equipment during 1981.

Dollars	Reels		Rods		Tackle		Total	
	no.	%	no.	%	no.	%	no.	%
0	91	32	102	36	49	17	37	13
1-25	16	6	26	9	65	23	20	7
26-50	44	16	43	15	68	24	21	7
51-100	60	21	55	20	36	13	35	12
101-200	45	16	30	11	39	14	52	18
201-500	23	8	19	7	19	7	78	28
> 500	3	1	7	2	6	2	39	14
Total	[illegible]	[illegible]	282	[illegible]	282	100	282	[illegible]
Mean	94		89		92		275	
Total	26,500		25,200		26,000		77,600	

[a]Missing values treated as zeros.

Table 5. Distribution of black drum anglers by various reasons why people go fishing: ranked by mean score.

Reason	no.	Value[a] 1	2	3	4	5	Mean[b]
For relaxation	259	2.3	3.9	13.9	28.2	[illegible]	4.2
To be outdoors	259	1.5	4.2	20.5	43.6	30.1	4.0
For the challenge or sport	259	5.0	6.2	15.4	36.3	37.1	3.9
To get away from the regular routine	259	9.3	5.4	12.7	35.5	37.1	3.9
For the experience of the catch	259	7.3	7.3	13.9	35.5	35.9	3.9
To be with friends	259	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.6
To experience natural surroundings	259	5.8	10.0	25.5	39.0	19.7	3.6
To be close to the sea	259	12.4	11.2	23.9	29.7	22.8	3.4
To get away from the demands of other people	259	20.1	12.0	16.6	22.8	28.6	3.3
To develop my skills	259	17.4	12.0	18.9	30.5	21.2	3.3
To experience new and different things	259	16.2	15.8	26.3	25.9	15.8	3.1
To obtain fish for eating	259	17.8	17.4	25.1	19.7	20.1	3.1
For family recreation	259	17.4	13.5	25.1	32.8	11.2	3.1
To obtain a trophy fish	259	34.7	13.9	16.6	12.0	22.8	2.7
To test my equipment	259	36.3	15.8	20.1	15.8	12.0	2.5

[a]1 = Not at all important; 2 = Slightly important; 3 = Moderately important; 4 = Very important; 5 = Extremely important

[b]Any two means that are not in the same vertical line are significantly different (P=.05). Only the 259 observations without any missing values of the 282 total observations were used for the Duncan's Multiple Range test.

Table 6. Distribution of black drum anglers by the extent they agree or disagree with statements about fishing: ranked by mean score.

Item	nb	Value[a] 1	2	3	4	5	Mean[b]
I am the happiest if I catch challenging game fish	245	1.6	9.8	11.8	46.2	28.6	3.9
A fishing trip can be successful to me even if no fish are caught	245	2.9	7.8	10.2	59.6	19.6	3.9
The more fish I catch, the happier I am	245	1.2	17.1	11.8	45.3	24.5	3.7
Cleaning fish is worth it to be able to eat the fish I catch	245	5.7	8.6	15.5	56.7	13.5	3.6
I would rather catch one or two big fish than ten smaller fish	245	2.4	20.8	15.5	38.0	23.3	3.6
The bigger the fish I catch, the better the fishing trip	245	2.4	27.3	19.2	31.8	19.2	3.4
A successful fishing trip is one in which many fish are caught	245	3.3	24.5	21.2	36.3	14.7	3.3
The more black drum I catch, the better the fishing trip	245	3.3	22.0	25.7	35.5	13.5	3.3
I'm just as happy if I don't keep the fish I catch	245	2.4	32.2	17.6	37.1	10.6	3.2
Keeping the fish I catch is more enjoyable than releasing them	245	3.3	22.9	33.5	32.2	8.2	3.2
A full stringer is the best indicator of a good fishing trip	245	3.3	31.8	20.4	33.1	11.4	3.2
When I go fishing, I'm just as happy if I don't catch a fish	245	6.5	28.2	19.2	37.1	9.0	3.1
Catching a "trophy" fish is the biggest reward to me	245	11.0	29.8	19.2	22.9	17.1	3.1
It doesn't matter to me what type of fish I catch	245	6.5	36.3	13.5	37.1	6.5	3.0

[a] 1 = Strongly disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly agree

[b] Any two means that are not in the same vertical line are significantly different (P=.05). Only the 245 observations without any missing values of the 282 total observations were used for the Duncan's Multiple Range test.

Table 7: Distribution of responses to: Who manages fish populations in Texas Bays?

Response	no.	%
Texas Parks and Wildlife Department (TPWD)	88	33
Don't know	80	30
Probably TPWD	38	14
Various agencies	11	4
Fish and game wardens	9	3
No one	9	3
Public	7	3
God or nature	5	2
Commercial fishermen	5	2
[illegible]	5	2
Other	13	5
Total	270[a]	101

[a]12 anglers did not respond.

Table 8. Distribution of Responses to: How do you feel about the state's saltwater fishing policies and regulations?

Response	no.	%
Strongly agree	25	9
Agree	122	45
Neutral	58	21
Disagree	45	17
Strongly disagree	16	6
I don't know	4	1
Total	270[a]	99

[a]12 anglers did not respond.

Table 9. Distribution of responses to: Do you feel that current harvest restrictions do an adequate job of providing you with the opportunity to catch the size and number of fish you want?

Response	no.	%
Yes	184	68
No	76	28
I don't know	9	3
Total	269[a]	99

[illegible] nd.

If not, in what way would you like to see it changed?

Response	no.	%
Less regulation of sport fishermen	47	65
Stronger regulation of commercial fishermen	11	15
Stronger regulation of sport fishermen	7	10
Reduce netting	2	3
Less regulation of commercial fishermen	1	1
I don't know	4	6
Total	72[a]	100

[a]4 anglers did not respond.

Table 10. Number and percent of anglers responding yes or no to questions concerning possible black drum harvest regulations.

Question	Response	no.	%
Do you think there should be:			
Gear limits?	Yes	47	18
	No	205	76
	I don't know	16	6
	Total	268[a]	100
Size limits?	Yes	[illegible]	[illegible]
	No	197	74
	I don't know	22	8
	Total	267[b]	100
Limits on number kept?	Yes	108	40
	No	147	54
	I don't know	15	6
	Total	270[c]	100

[a]14 anglers did not respond.
[b]15 anglers did not respond.
[c]12 anglers did not respond.

Table 11. Distribution of responses to: Do you feel you have adequate access to the fishing sites you would like to use?

Response	no.	%
Yes	212	78
No	55	20
I don't know	5	2
Total	272[a]	100

[a]10 anglers did not respond.

If not, What would you like to see more of?

Response	no.	%
Piers and jetties	17	32
Public parks	12	23
No fees	6	11
Boat ramps	5	9
Roads	3	6
Access to private land	3	6
Access to bays	1	2
Refill Texas City lagoon	1	2
I don't know	5	9
Total	53[a]	100

[a]2 anglers did not respond.

Table 12. Distribution of responses to: Who do you think should provide additional availability to fishing sites?

Response	no.	%
Public agency	179	66
Private enterprise	60	22
Both	15	6
I don't know	16	6
Total	270[a]	100

[a]12 anglers did not respond.

Table 13. Distribution of responses to: What kind of bait do you use?

Response	no.	%
Crab	145	60
Shrimp	72	30
Live and dead bait	7	3
Mullet	5	2
Squid	5	2
Other natural	4	2
Artificial	3	1
I don't know	2	1
Total	243[a]	101

[a]39 anglers did not respond.

Appendix A. Black drum angler field survey instrument

SALTWATER FISHING STUDY

Department of Recreation and Parks
Texas A&M University

DATE _____ RESEARCHER _____

TIME _____ LOCATION _____

WEATHER _____ _____

WATER TEMPERATURE _____ RAMP DENSITY _____

_____

_____

_____

_____

☐ Male ☐ Female

Group size _____

1. Could you tell me what saltwater fish species you are fishing for, in decreasing order of importance:

On this trip	During the year
_____	_____
_____	_____
_____	_____
_____	_____

2. Do you specialize in fishing for one particular kind of fish? ☐ Yes ☐ No
   a. If yes, what species: _____
3. How many years have you made the black drum run? _____
4. How many black drum did you catch last year? _____
5. Are you a member of a fishing club? ☐ Yes ☐ No
6. Do you subscribe to any fishing or sportsman magazines? ☐ Yes ☐ No
7. How often do you read outdoor columns in the newspaper? ☐ Not at all ☐ Occasionally ☐ Regularly
8. About how many of your close friends fish? ☐ None ☐ Some ☐ Most ☐ Don't know
9. About how many of your co-workers fish? ☐ None ☐ Some ☐ Most ☐ Don't know
10. What types of groups do you fish with?
    ☐ Family ☐ Friends ☐ By yourself ☐ Family and friends together
    ☐ People you do business with ☐ Club
11. Which type of group do you fish with most often?
12. Do you usually fish with the same group of people? ☐ Yes ☐ No
13. Including yourself, how many people are usually in your fishing group? _____
14. Which member of the fishing group usually initiates the idea to go fishing?
    ☐ Yourself ☐ Another member of the group ☐ Both yourself and another member of the group
15. On your fishing trip today, what type of group were you with?
    ☐ By myself
    ☐ With family only
    ☐ With family and friends
    ☐ With friends or acquaintances
    ☐ With people I didn't know prior to the trip
    ☐ With a club or organization
    Please give type
16. Do you make any of your own fishing tackle? ☐ Yes ☐ No
17. How many rod and reel combinations do you own? _____
18. Who first took you fishing?
    ☐ Father ☐ Close relative ☐ Brother ☐ Childhood friend ☐ Family friend ☐ No one
19. Who was most influential in teaching you to fish?
20. During the following time periods of your life, how active were you in fishing?

	did not fish	fished occasionally	fished regularly
5 to 12 years old	NF	FO	FR
13 to 20 years old	NF	FO	FR
21 to 30 years old	NF	FO	FR
31 to 40 years old	NF	FO	FR
41 to 50 years old	NF	FO	FR
51 to 60 years old	NF	FO	FR
60 + years old	NF	FO	FR

21. Below is a list of various reasons why people go fishing. Please circle the number that indicates how important each item is to you as a reason for fishing.

REASONS:	not at all important	slightly important	moderately important	very important	extremely important
To be outdoors	1	2	3	4	5
For family recreation	1	2	3	4	5
To experience new and different things	1	2	3	4	5
For relaxation	1	2	3	4	5
To be close to the sea	1	2	3	4	5
To obtain fish for eating	1	2	3	4	5
To get away from the demands of other people	1	2	3	4	5
For the experience of the catch	1	2	3	4	5
To test my equipment	1	2	3	4	5
To be with friends	1	2	3	4	5
To experience natural surroundings	1	2	3	4	5
To develop my skills	1	2	3	4	5
To get away from the regular routine	1	2	3	4	5
To obtain a "trophy" fish	1	2	3	4	5
For the challenge or sport	1	2	3	4	5
Other (specify)	1	2	3	4	5

22. How do you compare your fishing ability to that of other fishermen in general?
☐ Less skilled ☐ Equally skilled ☐ More skilled

23. How well do the following statements describe your feelings about today's fishing trip? For each statement circle the letters that best describe how strongly you agree or disagree.

	strongly disagree	disagree	neutral	agree	strongly agree
I thoroughly enjoyed this fishing trip	SD	D	N	A	SA
The number of people I saw on the bay interfered with my trip	SD	D	N	A	SA
I wish I had caught more fish	SD	D	N	A	SA
I cannot imagine a better fishing trip	SD	D	N	A	SA
This fishing trip was well worth the money I spent	SD	D	N	A	SA
I was disappointed with some aspects of my trip	SD	D	N	A	SA
I enjoyed being with the people I fished with	SD	D	N	A	SA
This trip was more like work than fun	SD	D	N	A	SA
This fishing trip was more enjoyable than I expected	SD	D	N	A	SA
I did not catch the type of fish I wanted	SD	D	N	A	SA

24. Overall, how would you grade this fishing trip? A B C D F

25. About how much did you spend on the following types of fishing equipment during 1981?
reels _____ tackle (lures, hooks, lines, etc.) _____
rods _____ other equipment and accessories _____

26. Considering all the fishing you did during 1981, about how many days did you spend doing each of the following types of fishing?

_____ Number of days saltwater pier fishing.
_____ Number of days saltwater shore or wade fishing.
_____ Number of days saltwater boat fishing (private, charter, or headboat).
_____ Number of days freshwater fishing with a boat.
_____ Number of days freshwater fishing without a boat.

27. During which seasons do you fish? (Check as many as apply)
☐ Winter ☐ Spring ☐ Summer ☐ Fall

28. How many fish do you usually catch compared to the average fisherman?
☐ Fewer fish ☐ About the same number ☐ More fish

29. Please indicate the extent to which you agree or disagree with each of the following statements about fishing.

	strongly disagree	disagree	neutral	agree	strongly agree
Catching a "trophy" fish is the biggest reward to me	1	2	3	4	5
The more fish I catch, the happier I am	1	2	3	4	5
A fishing trip can be successful to me even if no fish are caught	1	2	3	4	5
Cleaning fish is worth it to be able to eat the fish I catch	1	2	3	4	5
Keeping the fish I catch is more enjoyable than releasing them	1	2	3	4	5
When I go fishing, I'm just as happy if I don't catch a fish	1	2	3	4	5
I'm happiest with a fishing trip if I catch challenging game fish	1	2	3	4	5
A successful fishing trip is one in which many fish are caught	1	2	3	4	5
I would rather catch one or two big fish than ten smaller fish	1	2	3	4	5
[illegible] to me when I catch	1	2	3	4	5
The bigger the fish I catch, the better the fishing trip	1	2	3	4	5
I'm just as happy if I don't keep the fish I catch	1	2	3	4	5
A full stringer is the best indicator of a good fishing trip	1	2	3	4	5
The more black drum I catch, the better the fishing trip	1	2	3	4	5

IN THE FOLLOWING QUESTIONS, WE ARE INTERESTED IN YOUR OPINIONS ON FISHING IN TEXAS. THERE ARE NO RIGHT OR WRONG ANSWERS, SO PLEASE JUST GIVE US YOUR OWN OPINION.

30. Who manages fish populations in Texas bays? _____

31. How do you feel about the state's salt water fishing policies and regulations?
☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

32. Do you feel that current harvest restrictions do an adequate job of providing you with the opportunity to catch the size and number of fish you want? ☐ Yes ☐ No
a. If not, in what way would you like to see it changed? _____

33. Do you feel you have adequate access to the fishing sites you would like to use? ☐ Yes ☐ No
a. If not, what would you like to see more of?
_____

34. Who do you think should provide additional availability to fishing sites?
☐ Public Agency (tax money & user fees) ☐ Private Enterprise (fees)

35. What kind of bait do you use? _____

36. Are there adequate supplies of that bait when you fish? ☐ Yes ☐ No

37. Currently, there are no limits on black drum. Do you think there should be limits on:
gear? Yes No
size? Yes No
number of fish kept? Yes No

THE FOLLOWING QUESTIONS ARE ABOUT YOU PERSONALLY AND WILL HELP US TO KNOW MORE ABOUT FISHERMEN. YOU WILL NOT BE IDENTIFIED WITH YOUR ANSWERS, SO PLEASE BE FRANK.

38. In what state and county do you currently reside? (State) _____ (County) _____

39. What is your occupation? _____ 40. What is your age? _____

41. Besides your main occupation, do you work in or are you self-employed in any sport fishing related business?
☐ Yes ☐ No If yes, specify: _____

42. What is your approximate annual *household* income before taxes?
☐ Under $10,000
☐ $10,000 to $19,999
☐ $20,000 to $29,999
☐ $30,000 to $39,999
☐ $40,000 to $49,999
☐ $50,000 to $59,999
☐ $60,000 to $69,999
☐ $70,000 and above

THANK YOU FOR YOUR COOPERATION WITH THIS SURVEY

Department of Recreation and Parks
Texas A&M University
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