Gulf Pier and Jetty Finfish Catch Statistics for the Gulf Waters of Texas September 1978-August 1979

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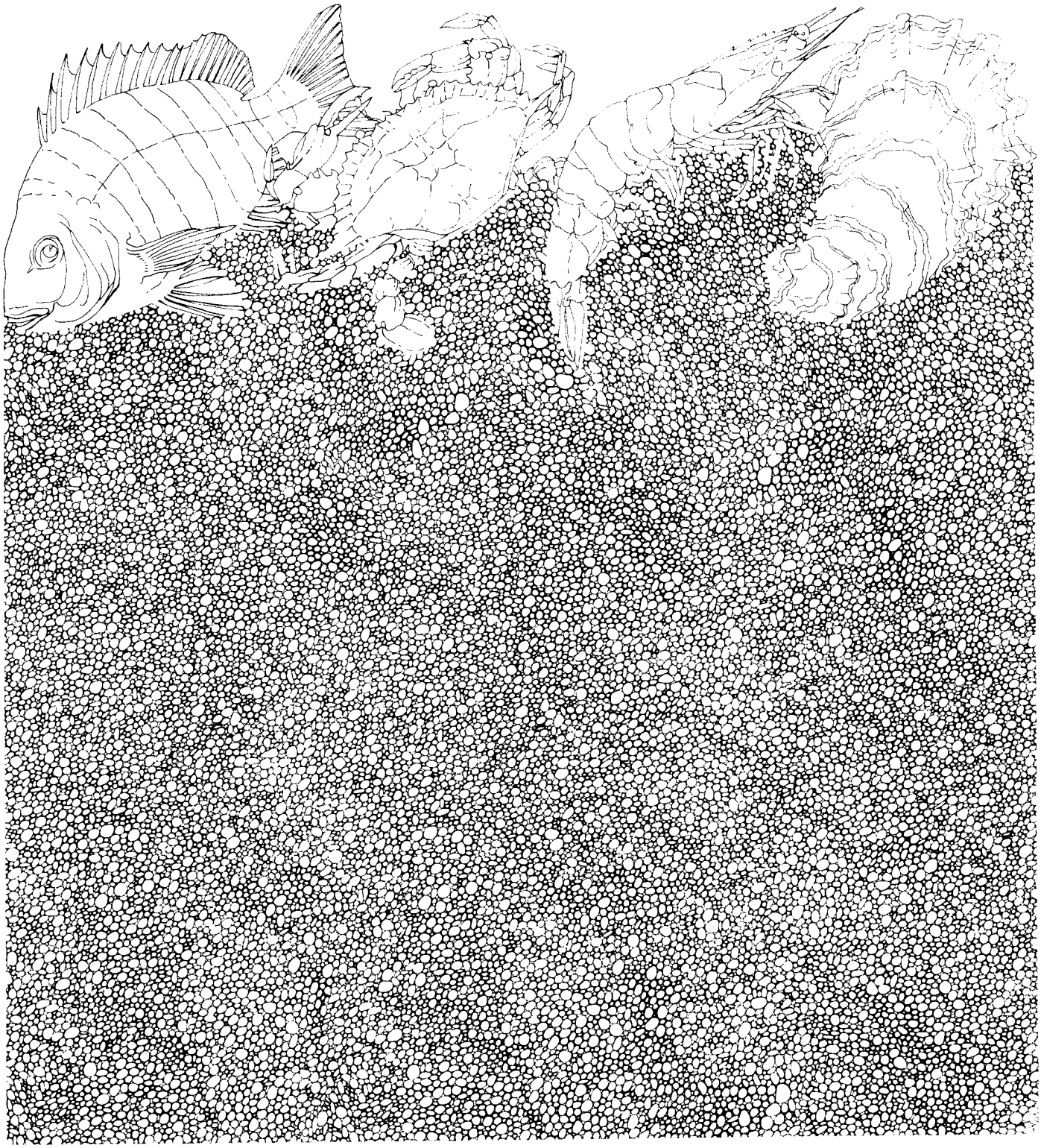

GULF PIER AND JETTY FINFISH CATCH STATISTICS FOR THE GULF WATERS OF TEXAS, SEPTEMBER 1978-AUGUST 1979

EXECUTIVE SUMMARY

From September 1978 through August 1979 Gulf piers and jetties were surveyed in the High Island-Galveston-Freeport, the Port Aransas-Corpus Christi and the Port Isabel areas. On randomly selected weekend days and weekdays creel personnel interviewed fishermen leaving preselected piers and jetties. Estimates of fish sizes, method of capture and catch per effort were determined.

Weekday annual mean catch rates for all species combined ranged from 0.20 to 0.26 lb/man-h. Mean annual catch rates for individual species were $\leq$ 0.09 lb/man-h. Overall, sand seatrout, sheepshead and "other" fishes dominated the landings.

Weekend annual mean catch rates for all species combined ranged from 0.07 to 0.09 lb/man-h. Mean annual catch rates for individual species were $\leq$ 0.04 lb/man-h. Atlantic croaker and "other" fishes exhibited the highest catch rates.

This survey indicates that the fishermen using Gulf piers and jetties are probably not severely affecting fish stocks in the surf zone. It appears that for the number of persons fishing few fish are being caught.

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ABSTRACT

From September 1978 through August 1979 Gulf piers and jetties were surveyed in the High Island-Galveston-Freeport, Port Aransas-Corpus Christi and Port Isabel areas. Bottom fishes, mainly sand seatrout (Cynoscion arenarius), Atlantic croaker (Micropogon undulatus) and "other" fishes were the main fishes retained.

Weekday annual mean catch rates (kg/man-h) for all species combined ranged from 0.09 to 0.12 kg/man-h. Weekend catch rates ranged from 0.03 to 0.04 kg/man-h. Weekday catch rates were two to three times higher than those recorded on weekends.

It is recommended that a survey of the fall surf run of red drum (Sciaenops ocellata) be included in future surveys.

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INTRODUCTION

Fishing from a pier or jetty is a popular pastime for Gulf of Mexico anglers. In 1970 an estimated 288,000 bridge, pier and jetty anglers caught a little over 23 million fish weighing over 15 million kg from the Mississippi River to Brownsville, Texas (Deuel 1973). These totals include anglers who fished in bays as well as in the Gulf.

In Texas no survey has been conducted that deals exclusively with the piers or jetties in the surf zone of the Gulf of Mexico. Springer and Pirson (1958) reported on the catches of sport fish at Port Aransas, Texas. Jetty fishermen catches were included in the total of fish landed but the data were not reported as to fishing locale. No other published report referring to Gulf piers and jetties in Texas is known to the author.

The Texas Parks and Wildlife Department (TPWD) is conducting ongoing surveys to obtain trend information on the components of the coastal sport fishery. To date the various fishing strata of bay wade/bank, bay commercial pier, jetty private boat, Gulf private boat, bay private boat, headboats and charterboats have been surveyed (Heffernan et al. 1976, Breuer et al. 1977, Green et al. 1978, McEachron 1979, McEachron 1980a,b). Since Gulf pier and jetty fishery catch per effort and species composition were not available, the TPWD initiated a study of these strata to determine the species, size and catch per effort of commercially and recreationally important finfishes caught in Texas waters. Data obtained will be used to assess the impact of the pier and jetty fishery on the stocks of fishes along the Texas coast.

MATERIALS AND METHODS

From September 1978 through August 1979 Gulf piers and jetties were surveyed in the High Island-Galveston-Freeport, the Port Aransas-Corpus Christi and the Port Isabel areas (Figure 1). Gulf piers and jetties were identified and numbered (Appendices A & B) by the area biologist.

The year was divided into four quarters--fall (September-November), winter (December-February), spring (March-May) and summer (June-August). During each quarter interviews were conducted on each of 12 randomly selected weekdays and 4 weekend days in the High Island-Galveston-Freeport area, on each of 8 randomly selected weekdays and 4 weekend days in the Port Aransas-Corpus Christi area and on each of 6 randomly selected weekdays and 2 weekend days in the Port Isabel area. Gulf pier surveys were conducted during an early (0800-1600 CST) or late (1600-2400 CST) period; jetty surveys were conducted only during an early (0800-1600 CST) period.

Recreational fishermen leaving randomly selected piers and jetties were interviewed and their catches were examined. Interviewers recorded trip time, actual fishing time, area fished, number of persons fishing and their residences (state if non-Texas resident, county if Texas resident), gear used and baits used.

All fish retained during a fishing trip were identified, counted and weighed by species. Fish were measured to the nearest mm (total length) when possible.

Catch rates (kg/man-h and no/man-h) were calculated as the number or weight of fishes landed during each season divided by the total number of man-h of trip time. Mean sizes (kg) were obtained by adding all the weights for a species during a season and dividing by the number of fish of that species weighed. Annual catch rates are weighted averages based on the total number of man-h in each season; mean sizes are weighted averages based on the number of fish measured.

RESULTS

Weekday

Annual mean catch rates (kg/man-h) ranged from 0.09 to 0.12 kg/man-h (Tables 1-3). Seasonal catch rates for all species combined were highest during spring in both the High Island-Galveston-Freeport and Port Isabel areas; highest catch rates were reported during fall and winter in the Port Aransas-Corpus Christi area. Mean annual catch rates for individual species were $\leq$ 0.04 kg/man-h.

The annual mean catch rate (no/man-h) ranged from 0.16 to 0.20 fish/man-h (Tables 1-3). Seasonal catch rates for all species combined were high during winter in both the High Island-Galveston-Freeport and Port Aransas-Corpus Christi areas and during spring in the Port Isabel area. Sand seatrout (Cynoscion arenarius) in the High Island-Galveston-Freeport area and "other" fishes in the Port Aransas-Corpus Christi and Port Isabel areas had catch rates $\geq$ 0.08 fish/man-h; all other species annual catch rates were $\leq$ 0.06 fish/man-h. Overall, sand seatrout, sheepshead (Archosargus probatocephalus) and "other" fishes dominated the landings.

Red drum (Sciaenops ocellata), black drum (Pogonias cromis) and gafftopsail catfish (Bagre marinus) were the heaviest fishes retained by pier and jetty fishermen (Tables 1-3). Mean sizes for all other species were $\leq$ 0.80 kg/fish.

Weekend

Annual catch rates (kg/man-h) for all species combined ranged from 0.03 to 0.04 kg/man-h (Tables 4-6). Seasonal catch rates varied but all were $\leq$ 0.07 kg/man-h. Mean annual catch rates for individual species were $\leq$ 0.02 kg/man-h.

For all species combined, annual mean catch rates (no/man-h) were 0.06 fish/man-h in the Port Isabel area and 0.09 in both the High Island-Galveston-Freeport and Port Aransas-Corpus Christi areas (Tables 4-6). The highest seasonal catch rates were recorded during fall in the High

Island-Galveston-Freeport and Port Isabel areas and during summer in the Port Aransas-Corpus Christi area. Atlantic croaker (Micropogon undulatus) and/or "other" fishes exhibited the highest catch rates in each area.

Generally, red drum and gafftopsail catfish were the heaviest fishes retained (Tables 4-6). Mean sizes of other species ranged from 0.16 to 1.26 kg/fish.

DISCUSSION

Sand seatrout, "other" fishes and Atlantic croaker were the dominant fishes caught off the Gulf piers and jetties. Since the pier and jetty fishermen generally fish on the bottom with dead bait (Unpublished data, TPWD Rockport Marine Library) it is reasonable that these fishes which feed primarily on the bottom would dominate the landings.

Catch rates were two to three times higher on weekdays than on weekends. If there was an increase in the number of "novice" fishermen on the weekends then weekend catch rates might be lower. Also, since there are more weekdays than weekend days, weekday fishermen may be selecting the "good" days to fish perhaps causing their catch rates to be "high."

Mean annual catch rates on the Gulf piers and jetties were lower than those reported for the bay commercial piers. Heffernan et al. (1976) and Breuer et al. (1977) reported that bay commercial fishermen caught 0.12 kg/man-h in Galveston Bay, 0.16 in Aransas Bay, 0.11 in Corpus Christi Bay and 0.27 in lower Laguna Madre. This indicates that fishermen in the Gulf waters caught fewer fish for the effort expended in 1978-79 than their bay counterparts in 1974-75 and 1975-76.

Sand seatrout, Atlantic croaker and "other" fishes dominated the landings on the Gulf piers and jetties in the High Island-Galveston-Freeport area; "other" fishes and sheepshead dominated the landings in the Port Aransas-Corpus Christi area and "other" fishes, Atlantic croaker, sand seatrout and sheepshead dominated the landings in the Port Isabel area. Heffernan et al. (1976) and Breuer et al. (1977) reported that on bay commercial piers sand seatrout and "other" fishes constituted the majority of fish landed in Galveston Bay; spotted seatrout was the major fish landed in Aransas Bay; spotted seatrout and gafftopsail catfish were the major fishes landed in Corpus Christi Bay and spotted seatrout, sand seatrout and "other" fishes were the dominant fishes landed in lower Laguna Madre. These findings could either indicate that the Gulf and bay pier fishermen in the Galveston Bay and High Island-Galveston-Freeport areas use similar techniques or that the availability of the species is similar. However, it is apparent that in the other areas, spotted seatrout are caught more often on bay piers than on the Gulf piers and jetties. These differences could be due to differences in fishing technique or in the availability of fishes between areas.

This survey indicates that the fishermen using the Gulf piers and jetties are probably not severely affecting fish stocks in the surf zone. However, it is a well-known fact among fishermen and pier owners that large numbers of adult red drum are caught off Gulf piers during fall. These catches are usually made during short periods when surf conditions are rough. These runs were not detected in our survey even though the runs were widely publicized in the area newspapers. The technique of the study was such that the odds of being on the "right" pier when red drum were "running" was remote. Since the red drum is believed to be declining in the bays (Heffernan and Kemp 1978) it is recommended that future surveys be designed to determine better the Gulf pier catch rates and mean sizes of red drum.

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Table 1. Catch rates (kg/man-h and no/man-h) and mean size (kg) of fishes caught by weekday Gulf pier and jetty fishermen in the vicinity of High Island-Galveston and Freeport by species and season (Sept. 1978-Aug. 1979). Blanks = no data; 0.00 = catches < 0.01.

kg/man-h

Season	Spotted seatrout	Red drum	Black drum	Southern flounder	Sheepshead	Atlantic croaker	Sand seatrout	Gafftopsail catfish	Other	All[a] species combined
Fall	0.00	0.01		0.01	0.00	0.00	0.04		0.02	0.09
Winter					0.03	0.01	0.06		0.03	0.13
Spring	0.01	0.15	0.00	0.00	0.01	0.00	0.03	0.00	0.02	0.22
Summer	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.04
Annual	0.01	0.03	0.00	0.00	0.00	0.00	0.02	0.00	0.02	0.09

No/man-h

Season	Spotted seatrout	Red drum	Black drum	Southern flounder	Sheepshead	Atlantic croaker	Sand seatrout	Gafftopsail catfish	Other	All[a] species combined
Fall	0.00	0.00		0.03	0.00	0.02	0.17		0.00	0.22
Winter		0.00	0.01		0.06	0.05	0.38		0.13	0.62
Spring	0.01	0.04	0.00	0.01	0.02	0.01	0.12	0.00	0.04	0.25
Summer	0.01	0.00	0.00	0.01	0.00	0.01	0.01	0.00	0.08	0.13
Annual	0.01	0.01	0.00	0.01	0.01	0.01	0.09	0.00	0.06	0.20

Mean Size (kg)

Season	Spotted seatrout	Red drum	Black drum	Southern flounder	Sheepshead	Atlantic croaker	Sand seatrout	Gafftopsail catfish	Other
Fall	0.36	3.94		0.49	0.45	0.24	0.25		6.17
Winter		1.02			0.54	0.15	0.17		0.23
Spring	0.97	4.12	0.34	0.34	0.58	0.10	0.29	0.45	0.38
Summer	0.44	0.49	0.38	0.39	1.14	0.14	0.26	0.39	0.21
Annual	0.50	3.50	0.37	0.43	0.58	0.17	0.26	0.40	0.42

[a] Due to rounding of numbers these totals may not equal exactly individual species

Table 2. Catch rates (kg/man-h and no/man-h) and mean size (kg) of fishes caught by weekday Gulf pier and jetty fishermen in the vicinity of Port Aransas-Corpus Christi by species and season (Sept. 1978-Aug. 1979). Blanks = no data; 0.00 = catches <0.01.

kg/man-h

Season	Spotted seatrout	Red drum	Black drum	Southern flounder	Sheepshead	Atlantic croaker	Sand seatrout	Gafftopsail catfish	Other	All[a] species combined
Fall	0.00	0.09	0.00	0.01	0.01	0.02	0.00	0.00	0.02	0.15
Winter			0.00		0.14				0.00	0.15
Spring	0.01	0.00	0.00		0.00			0.01	0.05	0.08
Summer	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.04
Annual	0.00	0.04	0.00	0.00	0.03	0.01	0.00	0.00	0.02	0.10

No/man-h

Season	Spotted seatrout	Red drum	Black drum	Southern flounder	Sheepshead	Atlantic croaker	Sand seatrout	Gafftopsail catfish	Other	All[a] species combined
Fall	0.01	0.01	0.00	0.01	0.01	0.04	0.00	0.00	0.07	0.15
Winter			0.00		0.26				0.01	0.27
Spring	0.01	0.00	0.00		0.00		0.01	0.01	0.14	0.17
Summer	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.09	0.11
Annual	0.01	0.00	0.00	0.00	0.04	0.02	0.01	0.00	0.08	0.16

Mean Size (kg)

Season	Spotted seatrout	Red drum	Black drum	Southern flounder	Sheepshead	Atlantic croaker	Sand seatrout	Gafftopsail catfish	Other
Fall	0.43	7.64	1.27	0.68	0.68	0.42	0.56	1.75	0.27
Winter			0.45		0.55				0.37
Spring	0.97	0.91	1.36		0.91			0.80	0.35
Summer	0.70	1.65	3.64	0.86	0.40	0.20	0.33	0.80	0.27
Annual	0.69	7.24	1.43	0.74	0.56	0.42	0.37	1.02	0.29

[a] Due to rounding of numbers these totals may not equal exactly individual species

Table 3. Catch rates (kg/man-h and no/man-h) and mean size (kg) of fishes caught by weekday Gulf pier and jetty fishermen in the vicinity of Port Isabel by species and season (Sept. 1978-Aug. 1979). Blanks = no data; 0.00 = catches < 0.01.

Season	Spotted seatrout	Red drum	Black drum	Southern flounder	Sheepshead	Atlantic croaker	Sand seatrout	Gafftopsail catfish	Other	All[a] species combined
	kg/man-h									
Fall	0.00			0.02	0.01	0.01	0.00		0.00	0.04
Winter	0.01		0.04	0.00	0.02				0.00	0.07
Spring	0.02		0.01	0.00	0.08	0.00	0.01		0.13	0.25
Summer	0.03								0.00	0.03
Annual	0.01		0.02	0.01	0.04	0.00	0.01		0.04	0.12
	No/man-h									
Season	Spotted seatrout	Red drum	Black drum	Southern flounder	Sheepshead	Atlantic croaker	Sand seatrout	Gafftopsail catfish	Other	All[a] species combined
Fall	0.00	0.01	0.02	0.02	0.02	0.02	0.00		0.02	0.08
Winter	0.02		0.01	0.00	0.03				0.00	0.06
Spring	0.02		0.00	0.01	0.10	0.00	0.03		0.25	0.42
Summer	0.06								0.00	0.07
Annual	0.02	0.01	0.00	0.01	0.05	0.01	0.02		0.09	0.19
	Mean Size (kg)									
Season	Spotted seatrout	Red drum	Black drum	Southern flounder	Sheepshead	Atlantic croaker	Sand seatrout	Gafftopsail catfish	Other	
Fall	0.57			1.01	0.70	0.42	0.54		0.23	
Winter	0 59		5.80	0.64	0.80				0.62	
Spring	0.75		1.40	0.52	0.80	0.15	0.36		0.51	
Summer	0.45								0.23	
Annual	0.56		3.60	0.74	0.80	0.29	0.37		0.48	

[a] Due to rounding of numbers these totals may not equal exactly individual species

Table 4. Catch rates (kg/man-h and no/man-h) and mean size (kg) of fishes caught by weekend Gulf pier and jetty fishermen in the vicinity of High Island-Galveston-Freeport by species and season (Sept. 1978-Aug 1979). Blanks = no data; 0.00 = catches < 0.01.

kg/man-h

Season	Spotted seatrout	Red drum	Black drum	Southern flounder	Sheepshead	Atlantic croaker	Sand seatrout	Gafftopsail catfish	Other	All[a] species combined
Fall		0.01	0.00	0.00	0.00	0.01	0.00		0.00	0.03
Winter	0.00	0.00	0.00		0.01	0.00			0.01	0.02
Spring	0.00		0.00		0.00	0.00	0.00		0.01	0.03
Summer	0.02	0.00	0.00	0.00	0.00	0.00	0.00		0.01	0.03
Annual	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.03

No/man-h

Season	Spotted seatrout	Red drum	Black drum	Southern flounder	Sheepshead	Atlantic croaker	Sand seatrout	Gafftopsail catfish	Other	All[a] species combined
Fall	0.00	0.00	0.00	0.00	0.00	0.07	0.02	0.00	0.01	0.11
Winter	0.00	0.00	0.00		0.01	0.02			0.02	0.06
Spring	0.00		0.00		0.00	0.01	0.02	0.01	0.04	0.08
Summer	0.03	0.00	0.00	0.01	0.00	0.01	0.00		0.04	0.09
Annual	0.01	0.00	0.00	0.00	0.00	0.03	0.01	0.00	0.03	0.09

Mean Size (kg)

Season	Spotted seatrout	Red drum	Black drum	Southern flounder	Sheepshead	Atlantic croaker	Sand seatrout	Gafftopsail catfish	Other
Fall		12.73	1.02	0.45	0.76	0.17	0.26		0.19
Winter	1.36	0.68	0.43		0.70	0.11			0.36
Spring	0.89		0.83		0.84	0.16	0.22	0.90	0.43
Summer	0.61	0.28	0.31	0.34	0.52	0.12	0.22		0.19
Annual	0.73	5.00	0.59	0.35	0.75	0.16	0.23	0.90	0.28

[a] Due to rounding of numbers these totals may not equal exactly individual species

Table 5. Catch rates (kg/man-h and no/man-h) and mean size (kg) of fishes caught by weekend Gulf pier and jetty fishermen in the vicinity of Port Aransas-Corpus Christi by species and season (Sept. 1978-Aug. 1979). Blanks = no data; 0.00 = catches <0.01.

	kg/man-h									
Season	Spotted seatrout	Red drum	Black drum	Southern flounder	Sheepshead	Atlantic croaker	Sand seatrout	Gafftopsail catfish	Other	All[a] species combined
Fall	0.03	0.02		0.00	0.00	0.00		0.00	0.01	0.07
Winter					0.01				0.01	0.01
Spring	0.00	0.00			0.01		0.00	0.00	0.04	0.05
Summer	0.01	0.00		0.00		0.00	0.00		0.02	0.04
Annual	0.01	0.00		0.00		0.00	0.00		0.02	0.04

	No/man-h									
Season	Spotted seatrout	Red drum	Black drum	Southern flounder	Sheepshead	Atlantic croaker	Sand seatrout	Gafftopsail catfish	Other	All[a] species combined
Fall	0.04	0.01		0.00	0.01	0.01		0.00	0.01	0.07
Winter					0.01				0.01	0.01
Spring	0.00	0.00			0.01		0.00		0.06	0.07
Summer	0.02	0.00		0.00	0.02	0.01	0.03		0.06	0.14
Annual	0.01	0.00		0.00	0.01	0.01	0.01	0.00	0.05	0.09

	Mean Size (kg)								
Season	Spotted seatrout	Red drum	Black drum	Southern flounder	Sheepshead	Atlantic croaker	Sand seatrout	Gafftopsail catfish	Other
Fall	0.83	1.83		1.05	0.63	0.32		1.70	1.33
Winter					1.02				1.14
Spring	1.36	4.20			0.91		0.35	2.05	0.30
Summer	0.56	0.57	0.45		0.18	0.18	0.18		0.36
Annual	0.73	1.53		0.66	0.88	0.21	0.21	1.89	0.34

[a] Due to rounding of numbers these totals may not equal exactly individual species

Table 6. Catch rates (kg/man-h and no/man-h) and mean size (kg) of fishes caught by weekend Gulf pier and jetty fishermen in the vicinity of Port Isabel by species and season (Sept. 1978-Aug. 1979). Blanks = no data; 0.00 = catches < 0.01.

kg/man-h

Season	Spotted seatrout	Red drum	Black drum	Southern flounder	Sheepshead	Atlantic croaker	Sand seatrout	Gafftopsail catfish	Other	All[a] species combined
Fall				0.00		0.05			0.00	0.05
Winter	0.02			0.00	0.01	0.00				0.03
Spring										
Summer	0.00			0.00			0.00		0.00	0.01
Annual	0.01			0.00	0.01	0.01	0.00		0.00	0.03

No/man-h

Season	Spotted seatrout	Red drum	Black drum	Southern flounder	Sheepshead	Atlantic croaker	Sand seatrout	Gafftopsail catfish	Other	All[a] species combined
Fall				0.00		0.16			0.01	0.17
Winter	0.01			0.00	0.01	0.01				0.03
Spring										
Summer	0.00			0.00			0.01		0.01	0.03
Annual	0.01			0.00	0.01	0.05	0.01		0.01	0.06

Mean Size (kg)

Season	Spotted seatrout	Red drum	Black drum	Southern flounder	Sheepshead	Atlantic croaker	Sand seatrout	Gafftopsail catfish	Other
Fall				0.36		0.29			0.27
Winter	1.55			0.45	0.60	0.17			
Spring									
Summer	0.40			0.34			0.34		0.35
Annual	1.26			0.38	0.60	0.29	0.34		0.36

[a] Due to rounding of numbers these totals may not equal exactly individual species

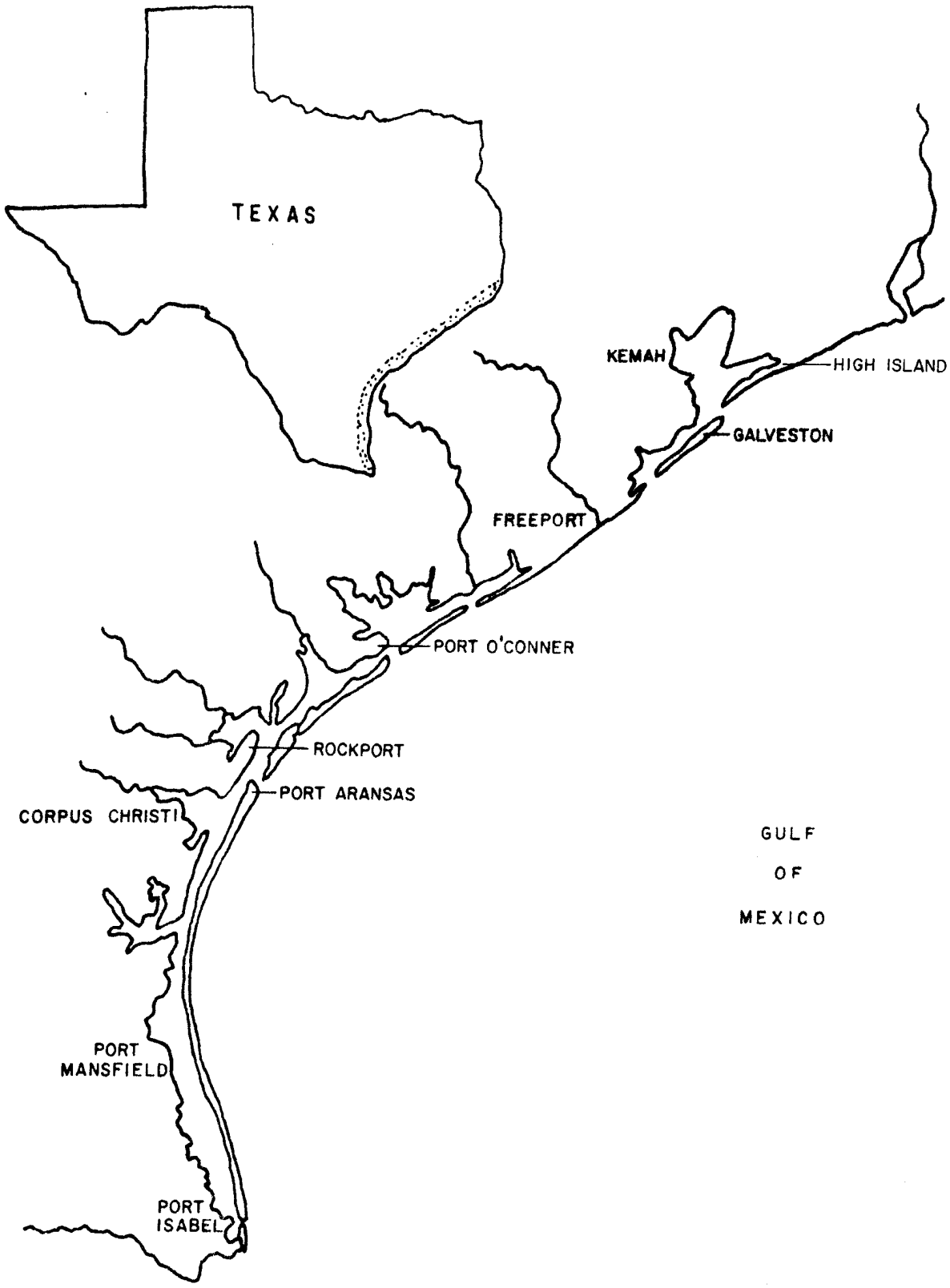

Figure 1. Map of Texas coast (Sept. 1978-Aug. 1979).

Appendix A. Gulf pier and jetty access points.

Table 1. Gulf commercial pier and jetty access points in each area (Sept. 1978-Aug. 1979).

Area	Pier or jetty code number	Pier or jetty identification
High Island-Galveston-Freeport	1	High Island Fishing Pier
	2	Shorty's Longest Pier
	3	Gulf Haven Pier
	4	North Galveston Jetty
	5	South Galveston Jetty
	6	Flagship Fishing Pier
	7	61st Street Pier
	8	Gulf Coast Pier (91st St.)
	9	Surfside Fishing Pier
	10	North Freeport Jetty
	11	South Freeport Jetty
Port Aransas	1	North Port Aransas Jetty
	2	South Port Aransas Jetty
	3	Horace Caldwell Pier
	4	Bob Hall Pier
Port Isabel	1	North Port Isabel Jetty
	2	South Port Isabel Jetty

Appendix B. Area maps of Gulf pier and jetty access points.

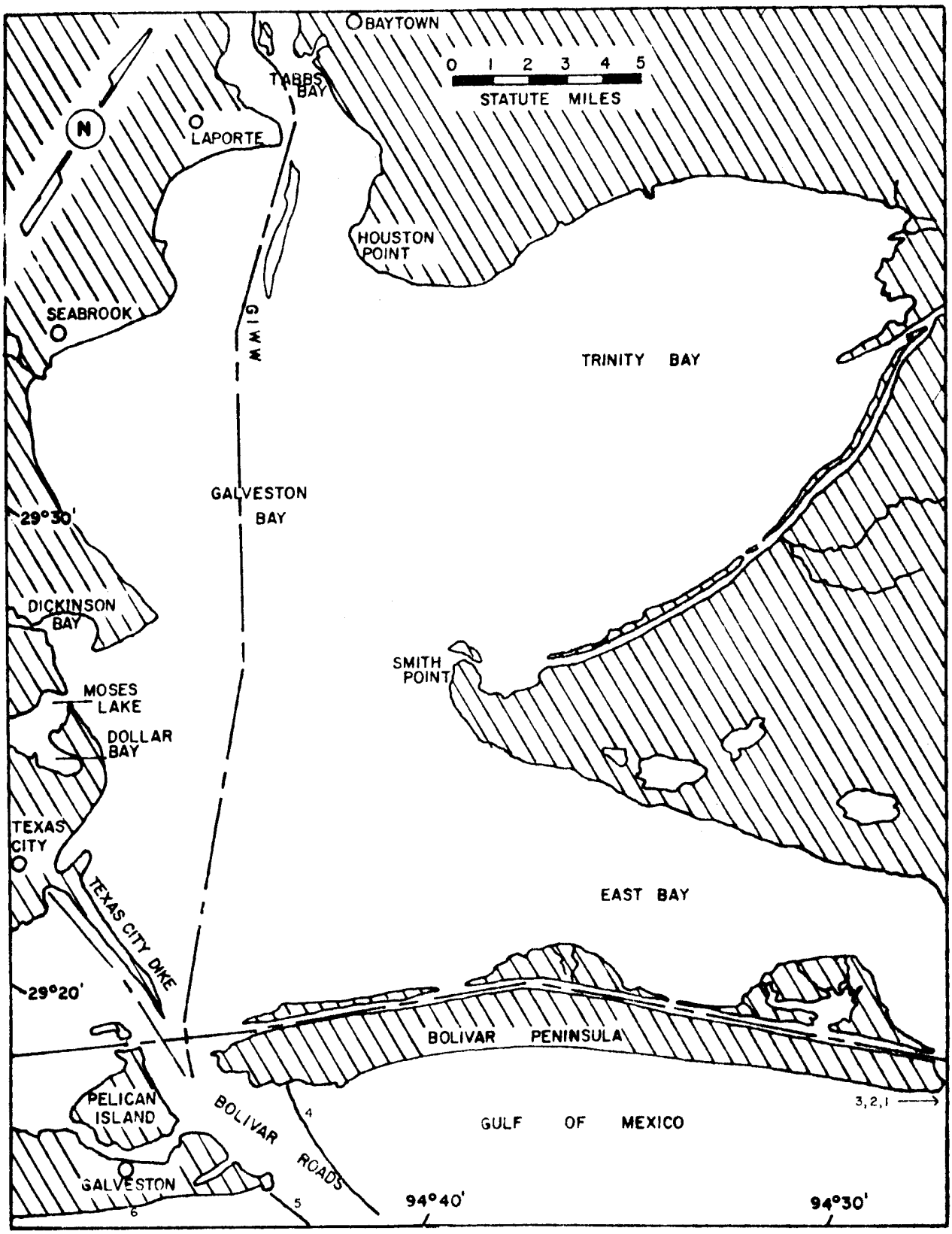

Figure 1. Gulf commercial pier and jetty access points in the Galveston Bay system (Sept. 1978-Aug. 1979).

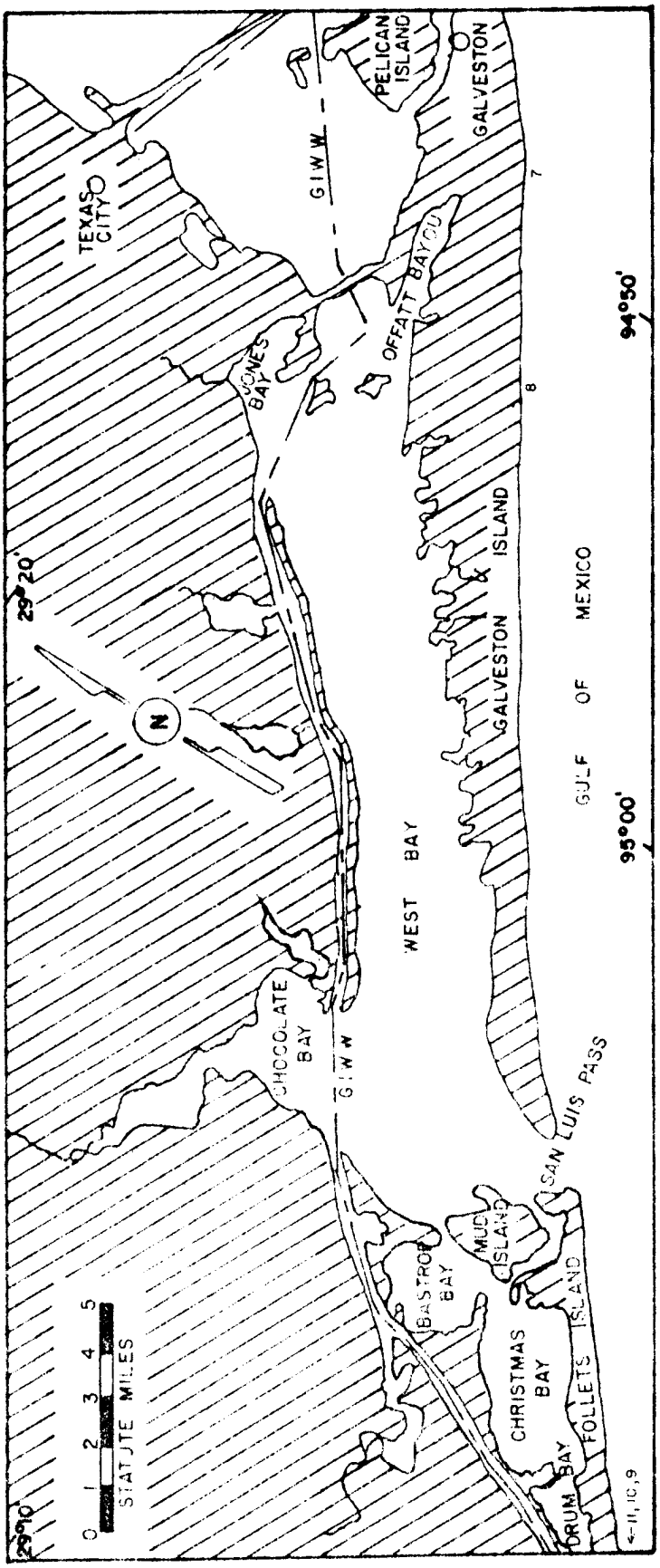

Figure 2. Gulf commercial pier and jetty access points in the Galveston Bay system (Sept. 1978-Aug. 1979).

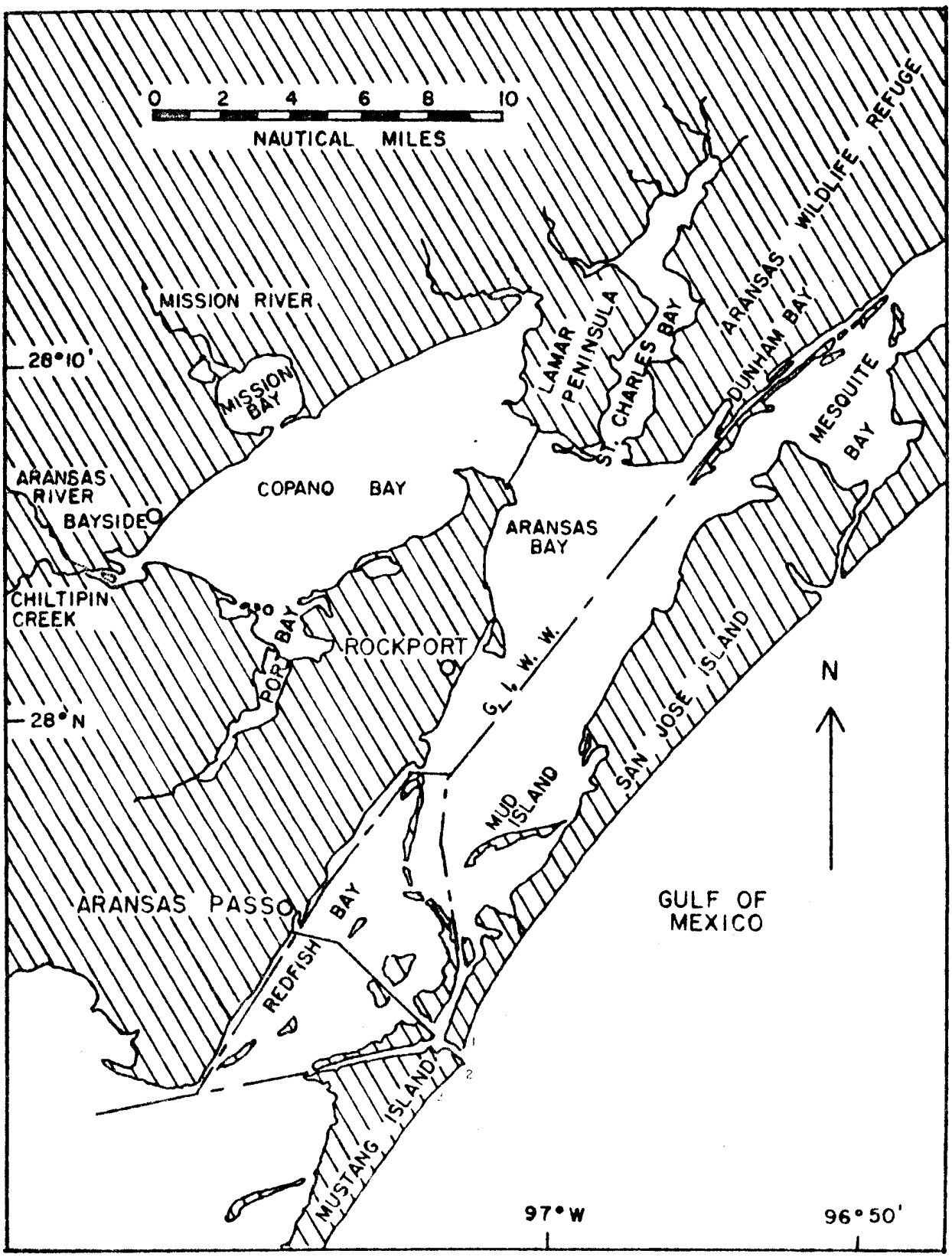

Figure 3. Gulf commercial pier and jetty access points in the Aransas-Corpus Christi Bay systems (Sept. 1978-Aug. 1979).

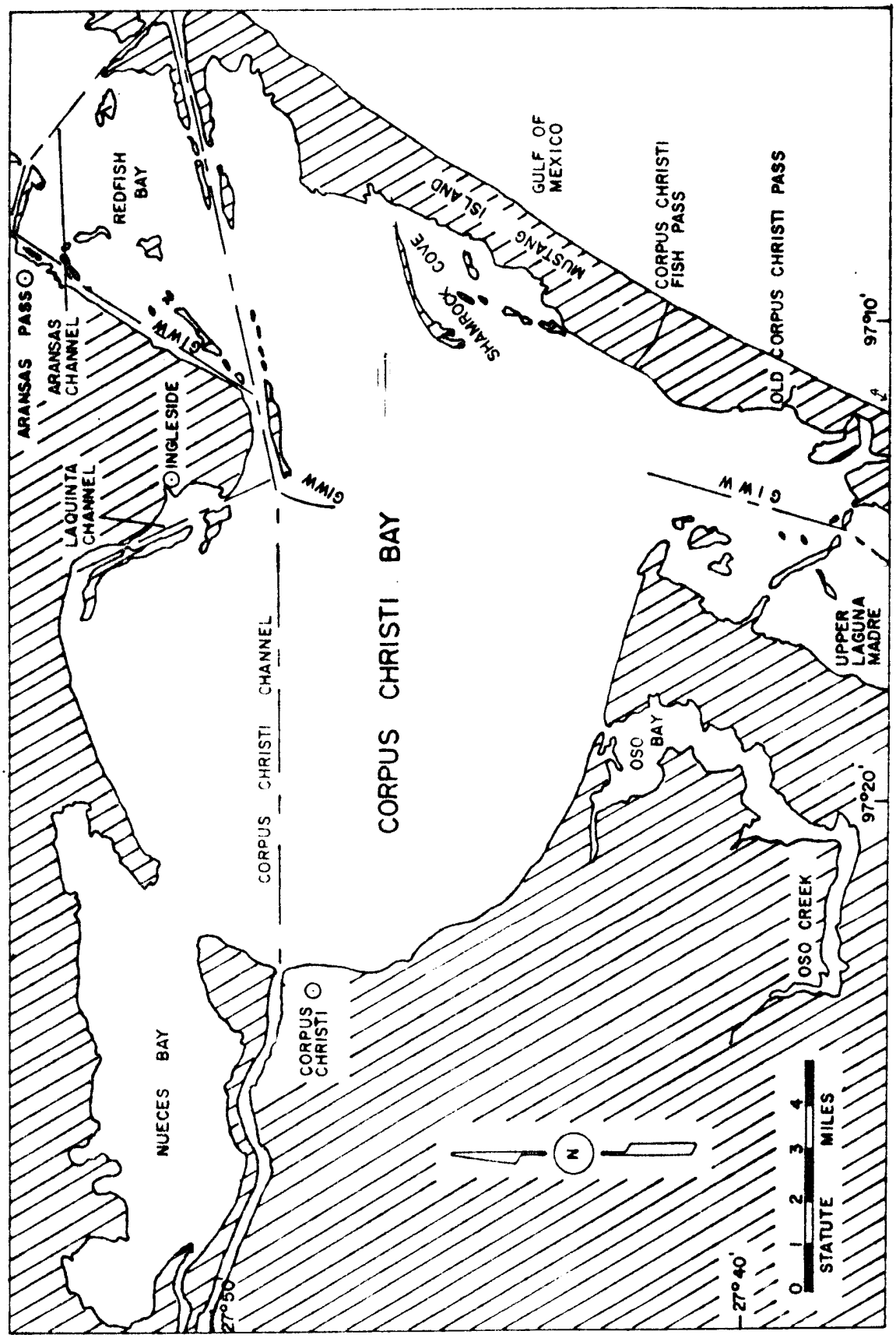

Figure 4. Gulf commercial pier and jetty access points in the Aransas-Corpus Christi Bay systems (Sept. 1978-Aug. 1979).

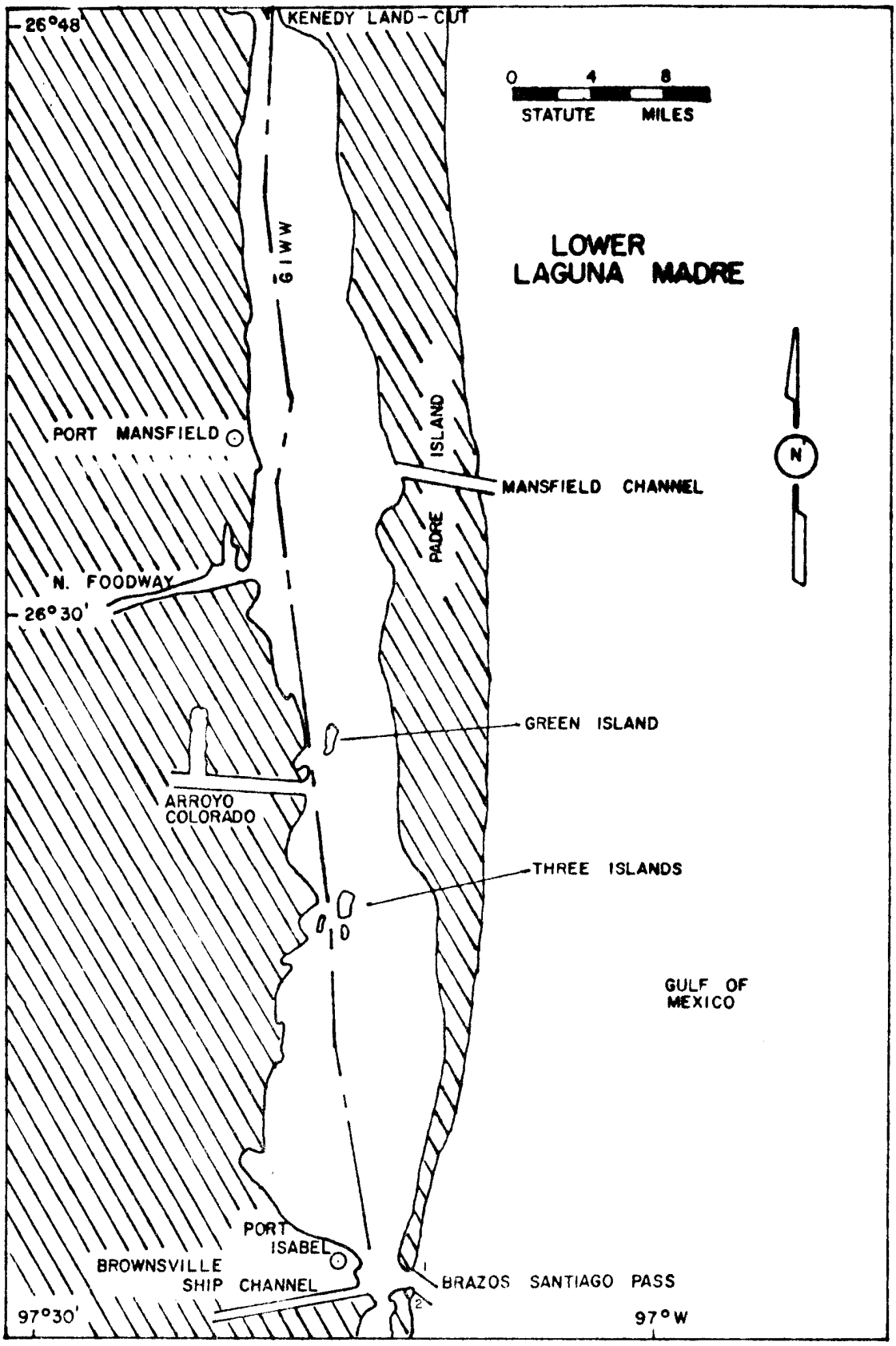

Figure 5. Gulf commercial pier and jetty access points in the lower Laguna Madre Bay system (Sept. 1978-Aug. 1979).

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