

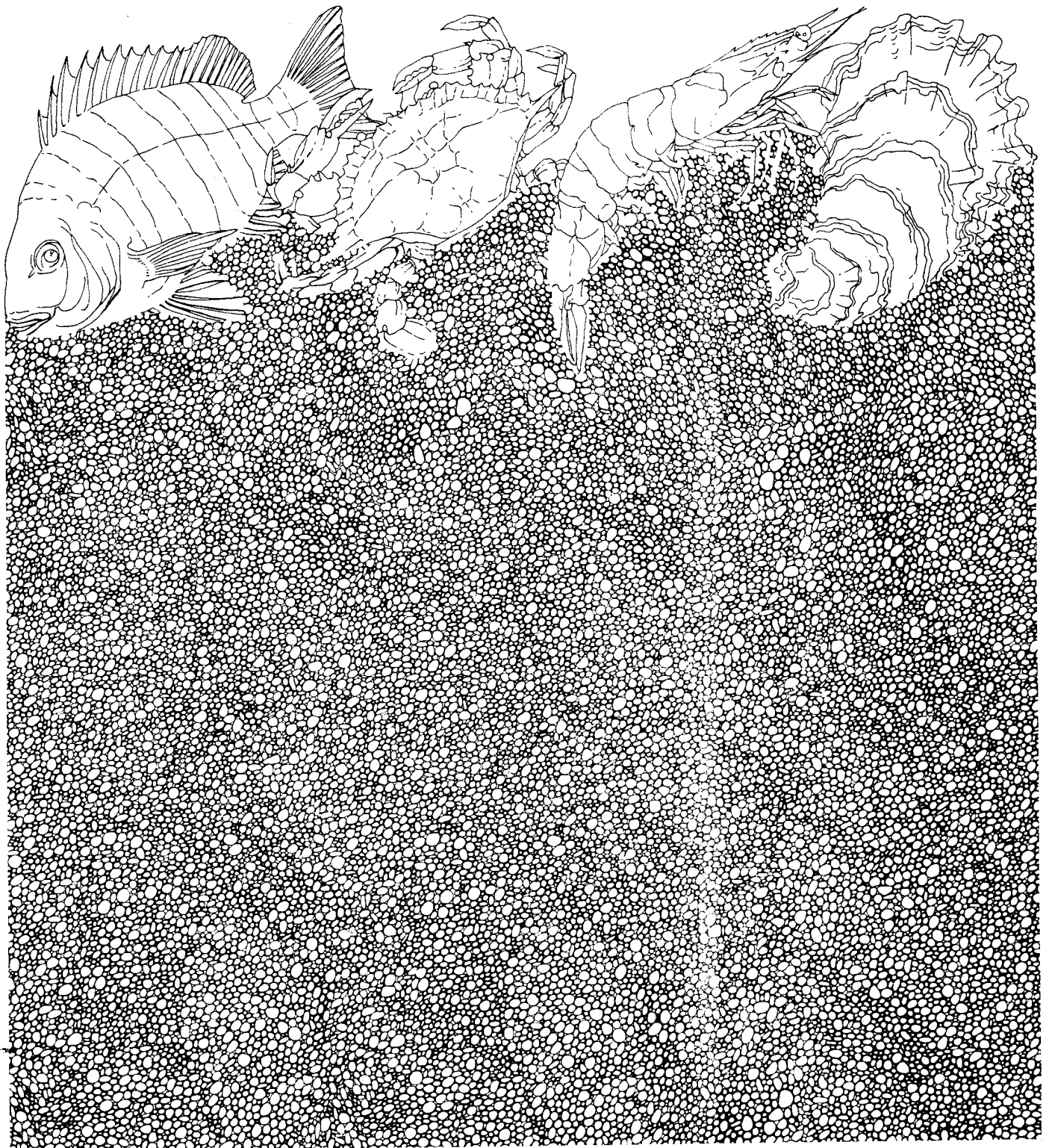
Paul Hammerschmidt

MONITORING OF TEXAS COASTAL BLUE CRAB RESOURCES — SEPTEMBER 1979-AUGUST 1981

by Paul Hammerschmidt

Management Data Series Number 53
1983

Texas Parks & Wildlife Department
Coastal Fisheries Branch



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ABSTRACT

Trends in relative abundance and size of blue crabs (Callinectes sapidus Rathbun) in Texas bay systems were monitored during September 1979-August 1981 utilizing bag seines and trawls. Bag seine samples were taken in seven bay systems (Galveston, Matagorda, San Antonio, Aransas and Corpus Christi Bays and the upper and lower Laguna Madre), while trawl samples were taken in four bay systems (Galveston, Matagorda, San Antonio and Aransas Bays).

Highest annual catch rates with bag seines (173.38/ha) occurred in the lower Laguna Madre. Coastwide trends in annual abundance showed no apparent pattern of increasing or decreasing abundance. Monthly and annual changes in mean sizes for blue crabs were not apparent.

Highest annual catch rates with trawls (14.9/h) occurred in Aransas Bay. Coastwide trends in annual catch rates indicated a decline from 1978-79 through 1980-81. Monthly and annual changes in mean sizes for blue crabs were not apparent.

INTRODUCTION

The blue crab, (Callinectes sapidus Rathbun), is found along the entire Texas coast and supports the third largest commercial fishery in the State following shrimp and oysters. From 1977-1981, reported annual landings of hardshell blue crabs averaged 3.6 million kg and were valued at \$2.0 million dockside (Hamilton 1982).

The life history of the blue crab in Texas has been investigated primarily by Daugherty (1952) and More (1969). Blue crabs usually spawn during spring and summer in the Gulf of Mexico or lower bay regions where salinities are greater than 20 o/oo. Young crabs migrate toward estuarine areas where salinities are usually less than 20 o/oo. There they grow and reach maturity in about one year. After mating, female blue crabs migrate to the Gulf of Mexico or lower bay regions to spawn. Males remain in the upper bay areas.

Reported landings of hardshell blue crabs have shown wide and sudden fluctuations (More 1969, Pearson 1948 and Tagatz 1965) including a 67% decline in Texas landings from 1962-63. This decline and the lack of knowledge concerning these fluctuations motivated the Texas Parks and Wildlife Department (TPWD) to conduct the blue crab investigation from 1962-1967 (More 1969).

Since blue crab production almost doubled from 1.9 to 3.7 million kg between 1968 and 1977, the importance of monitoring the blue crab populations for management purposes again became evident. In 1977, TPWD began a program designed to monitor juvenile and adult blue crab abundance and to develop long-term trends in size distributions and blue crab availability.

The goal of the blue crab program is to manage the resource to provide for optimum sustained harvest by all user groups. In order to accomplish this goal, TPWD monitored trends in catch per effort (CPE) of blue crabs caught in bag seines and trawls. Annual and monthly catch rates and mean widths were summarized with data from previous years. This report is the summarization of the data collected during the project years September 1979-August 1980 and September 1980-August 1981. Data collected during September-December 1981 are summarized in Appendix D. These data are not included in the calculations presented in this report in order to maintain consistency between the years. Any difference in this report compared to previous reports is due to updating of the data base and the most recent report should be considered the most accurate.

MATERIALS AND METHODS

Bag Seines

Each bag seine was 18.3 m long and 1.8 m deep with 19-~~mm~~ stretched nylon multifilament mesh in the lateral wings and 13-~~mm~~ stretched nylon multifilament mesh in the central bag.

From September 1979-August 1981, samples were collected with bag seines in the Galveston, Matagorda, San Antonio, Aransas and Corpus Christi Bays and the upper and lower Laguna Madre (Figures 1-9; Appendix A). Six different shoreline stations were sampled each month in each bay system. Stations were randomly selected from a list of ≤ 100 sample stations compiled for each bay system (Hegen 1982). Each station on the list was at least 1.6 km of continuous shoreline from any other bag seine station.

Three different stations were sampled with bag seines during each of the first two and last two fullest weeks of each month. Each sampling week extended from sunrise Monday through sunset of the following Sunday. Stations were sampled only during daylight hours.

A bag seine sample was collected by pulling an extended seine parallel or perpendicular to shore for a distance of no less than 15.2 m and no more than 30.5 m. The rectangular surface area sampled was estimated using the distance pulled and the length of extension of the bag seine.

No more than 19 randomly selected blue crabs were measured from each sample. Blue crabs were measured to the nearest 1 mm from lateral spine tip to lateral spine tip.

Monthly abundance values (No./ha) were calculated using the ratio estimator:

$$\frac{N}{H} \quad \begin{array}{l} N = \text{total number of individuals caught} \\ H = \text{total number of hectares covered} \end{array}$$

Values were reported to the nearest 0.01 individual/ha. Size (nearest 1 mm as described above) was calculated using the ratio estimator:

$$\frac{\sum_{i=1}^n L_i}{n} \quad \begin{array}{l} L_i = \text{individual sizes} \\ n = \text{number of individuals measured} \end{array}$$

Coastwide abundance and size values were calculated by weighting individual bay system values by the total amount of shoreline present in the respective system (Matlock and Ferguson 1982). Coefficient of variation values for blue crab catch rates from bag seines ranged from 22% to 202%. Coefficient of variation values for blue crab mean widths ranged from 0 to 83%.

Trawls

During September 1979-August 1981, samples were collected with 6.1-m trawls at permanent stations in the Galveston (15 stations), Matagorda (9 stations), San Antonio (10 stations) and Aransas (11 stations) bay systems (Figures 2-6; Appendix B). These stations were sampled once monthly during February-May and twice monthly during June-December in all bay systems except Matagorda where they were sampled once monthly during September-August. No samples were collected in January.

Trawls were 6.1-m wide at the mouth measured along the cork line between the rear margins of the trawl doors. The net was constructed of 38-mm stretched mesh throughout. The mesh was #9 (Nylon Net Co.) nylon multifilament thread. Trawl doors measured 1.2-m long and 0.6-m high.

Each month was divided into two sample periods; 1st-15th and 16th-end of month. When stations were sampled twice during a month, they were sampled during these two periods. However, when stations were sampled only once each month, they were sampled as close to the middle of the month as possible. All stations were sampled only during daylight hours.

Trawls were towed using available TPWD boats. Trawls were towed either in a circle or a line for a period of 15 minutes for each sample.

No more than 35 randomly selected blue crabs were measured from each sample. Blue crabs were measured to the nearest 1 mm from lateral spine tip to lateral spine tip. Catch rate estimates (No./tow) were calculated identical to the abundance estimates of the bag seines, except total number of tows (to the nearest 0.1) was used instead of total ha covered. Size was also calculated identical to mean widths of crabs from bag seines. Coastwide catch rates and size values were calculated by weighting individual bay system values by the total amount of area present in the respective bay system (Matlock and Ferguson 1982). Coefficient of variation values for blue crab catch rates ranged from 15 to 94%. Coefficient of variation values for blue crab mean widths ranged from 2 to 82%.

The randomly selected stations for the bag seines could not always be sampled. If a preselected station could not be sampled because of unsafe weather conditions, an alternate randomly selected station or an alternate day was substituted.

Crab data from bag seines were recorded on standard data forms. These data were key punched, placed on magnetic tape and summarized by computer at the Data Processing Section, TPWD, Austin. Crab data from trawls were recorded on standard data forms. These data were compiled and summarized by the author.

Water temperature (C) and salinity (o/oo) were measured at the time of each sample. Monthly means of these parameters are summarized in Appendix C.

RESULTS

Bag Seines (Annual Trends)

Coastwide annual mean catch rates in bag seines ranged from 75.46/ha to 88.67/ha during 1978-1981 with no discernible pattern of increasing or decreasing abundance (Table 1). Mean catch rates in individual bay systems ranged from 21.48/ha in Matagorda Bay to 173.38/ha in lower Laguna Madre. Coastwide annual mean widths ranged from 44 mm in 1980-81

to 55 mm in 1979-80. Annual mean widths within individual bay systems ranged from 36 mm in San Antonio Bay to 66 mm in Matagorda Bay. Mean widths fluctuated without a discernible pattern.

Trawls (Annual Trends)

Coastwide annual mean catch rates in trawls declined from 11.3/tow in 1978-79 to 5.5/tow in 1980-81 (Table 2). The same pattern of declining catch rates was indicated in each bay system sampled. Catch rates were generally higher (10.0-14.9/tow) in 1978-79 than in 1980-1981 (2.4-9.5/tow). Coastwide annual mean widths ranged from 82 mm in 1978-79 to 91 mm in 1980-81. Annual mean widths within individual bay systems ranged from 63 mm in San Antonio Bay to 97 mm in Galveston Bay. Mean widths fluctuated without discernible pattern.

Bag Seines (Monthly Trends)

Coastwide mean monthly catch rates during 1979-80 were generally higher (65.10-214.12/ha) during January-June than the remainder of the year when catch rates ranged from 4.00-68.70/ha (Table 3). This period of abundance was not consistent in each bay system. Monthly mean catch rates within individual bay systems ranged from 0.00/ha in Galveston and Matagorda Bays to 762.50/ha in lower Laguna Madre. Coastwide mean widths ranged from 27-80 mm. Mean widths in individual bay systems ranged from 16 mm in upper Laguna Madre to 175 mm in San Antonio Bay and showed no apparent monthly trends.

In 1980-81 coastwide catch rates were highest (152.34-204.38/ha) during March-April and lowest (19.28-36.64/ha) during December-February (Table 4). This general pattern was apparent in each bay system. Monthly mean catch rates within individual bay systems ranged from 0.00/ha in Galveston, Matagorda, Aransas and Corpus Christi Bays to 680.00/ha in lower Laguna Madre. Coastwide mean widths ranged from 32 mm to 77 mm. Monthly mean widths in individual bay systems ranged from 11 mm in San Antonio Bay to 119 mm in Aransas Bay and showed no apparent monthly trends.

Trawls (Monthly Trends)

Coastwide mean monthly catch rates during 1979-80 were generally higher (10.0-25.4/tow) during March-June than during the remainder of the year (1.8-7.4/tow) (Table 5). This general pattern was apparent in each bay system. Monthly mean catch rates within individual bay systems ranged from 0.3/tow in Matagorda Bay to 96.3/tow in San Antonio Bay. Coastwide mean widths ranged from 72 mm to 109 mm. Mean widths in individual bay systems ranged from 33 mm in Aransas Bay to 153 mm in Matagorda Bay and showed no apparent monthly trends.

In 1980-81 coastwide catch rates were highest (8.9-13.7/tow) during April-June and were lowest (0.6-0.8/tow) during November-December (Table 6). This general pattern was apparent in each bay system. Monthly mean catch rates within individual bay systems ranged from 0.0/tow in Matagorda Bay to 19.7/tow in San Antonio Bay. Coastwide mean widths ranged from 56 mm to 115 mm. Monthly mean widths in individual bay

systems ranged from 32 mm in Aransas Bay to 138 mm in Galveston Bay and showed no apparent monthly trends.

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Table 1. Annual mean catch rate (No./ha) and mean width (mm) of blue crabs caught with bag seines in Texas Bay systems during September 1978-August 1981.

Bay system	Year (Sep-Aug)	Number of samples	No./ha	Width
Galveston	1978-1979	72	102.96	52
	1979-1980	72	124.25	58
	1980-1981	72	73.61	43
Matagorda	1978-1979	72	23.84	47
	1979-1980	72	21.48	66
	1980-1981	72	47.80	39
San Antonio	1978-1979	72	74.07	47
	1979-1980	72	70.37	60
	1980-1981	72	94.91	36
Aransas	1978-1979	72	59.08	61
	1979-1980	72	86.88	57
	1980-1981	72	39.94	58
Corpus Christi	1978-1979	72	142.78	41
	1979-1980	72	64.16	45
	1980-1981	72	106.77	38
Upper Laguna Madre	1978-1979	72	81.60	45
	1979-1980	72	52.43	46
	1980-1981	72	64.58	51
Lower Laguna Madre	1978-1979	72	56.13	54
	1979-1980	72	173.38	46
	1980-1981	72	126.44	39
Coastwide ^a	1978-1979	504	75.46	50
	1979-1980	504	88.67	55
	1980-1981	504	76.65	44

^a Weighted by amount of shoreline in each bay system.

Table 2. Annual mean catch rate (No./tow) and mean width (mm) of blue crabs caught with trawls in Texas Bay systems during September 1978-August 1981.

Bay system	Year (Sep-Aug)	Number of samples	No./ha	Width
Galveston	1978-1979	270	10.0	84
	1979-1980	270	10.6	90
	1980-1981	251	5.7	97
Matagorda	1978-1979	99	11.2	77
	1979-1980	99	6.6	89
	1980-1981	99	2.4	91
San Antonio	1978-1979	170	12.8	86
	1979-1980	180	12.0	63
	1980-1981	180	7.3	84
Aransas	1978-1979	183	14.9	84
	1979-1980	192	10.5	87
	1980-1981	192	9.5	73
All bays combined ^a	1978-1979	722	11.3	82
	1979-1980	741	7.7	85
	1980-1981	722	5.5	91

^a Weighted by amount of area in each bay system.

Table 3. Mean catch rate (No./ha) and mean width (mm) of blue crabs caught with bag seines in Texas bay systems (Blank = no measurement taken).

Month and year (number of samples)	Galveston		Matagorda		San Antonio		Aransas		Corpus Christi		Upper Laguna Madre		Lower Laguna Madre		Coastwide ^a		
	No./ha	Width	No./ha	Width	No./ha	Width	No./ha	Width	No./ha	Width	No./ha	Width	No./ha	Width	Total No./ha	Width	
Sep 1979 (6)	88.89	92	19.44	100	11.11	112	46.43	67	64.29	60	66.67	89	12.50	27	(72)	46.88	80
Oct (6)	27.78	47	2.78	102	55.56	48	282.76	61	73.33	68	37.50	61	22.22	55	(72)	68.70	62
Nov (6)	122.22	39	25.00	58	5.56	175	37.93	78	25.00	68	4.17	24	45.83	49	(72)	46.65	67
Dec (6)	0.00		0.00		11.11	50	3.57	23	17.24	17	4.17	16	0.00		(72)	4.00	27
Jan 1980 (6)	55.56	60	13.89	42	11.11	82	73.33	47	21.43	45	33.33	21	625.00	30	(72)	118.70	48
Feb (6)	33.33	36	8.33	27	5.56	50	17.24	36	13.33	47	125.00	32	266.67	56	(72)	65.10	40
Mar (6)	255.56	25	13.89	45	111.11	40	166.67	57	70.00	34	37.50	63	762.50	54	(72)	213.36	44
Apr (6)	22.22	43	13.89	40	166.67	56	23.33	58	140.00	28	175.00	40	141.67	63	(72)	84.88	47
May (6)	268.75	49	50.00	64	77.78	43	56.67	51	143.33	44	20.83	57	17.86	96	(72)	104.28	58
Jun (6)	533.33	78	69.44	74	255.56	71	63.33	73	128.57	38	58.33	37	173.08	34	(72)	214.12	61
Jul (6)	33.33	86	27.78	61	77.78	75	37.93	59	26.67	57	8.33	36	8.70	28	(72)	31.54	60
Aug (6)	50.00	52	13.33	100	55.56	57	233.33	50	46.67	73	58.33	47	4.55	62	(72)	65.81	63

^a Weighted by amount of shoreline in each bay system.

Table 4. Mean catch rate (No./ha) and mean width (mm) of blue crabs caught with bag seines in Texas bay systems. (Blank = no measurement taken).

Month and year (number of samples)	Galveston		Matagorda		San Antonio		Aransas		Corpus Christi		Upper Laguna Madre		Lower Laguna Madre		Coastwide ^a	
	No./ha	Width	No./ha	Width	No./ha	Width	No./ha	Width	No./ha	Width	No./ha	Width	No./ha	Width	Total	No./ha Width
Sep 1980 (6)	222.22	37	2.78	15	261.11	25	56.67	39	10.00	42	62.50	35	8.70	98	(72)	100.36 41
Oct (6)	5.56	27	13.89	26	266.67	25	10.34	66	90.00	39	62.50	53	79.17	29	(72)	64.62 38
Nov (6)	0.00		41.67	41	111.11	33	23.33	39	170.00	36	8.33	18	7.69	21	(72)	41.49 32
Dec (6)	0.00		16.67	33	27.78	44	6.90	14	100.00	28	129.17	41	33.33	70	(72)	36.64 38
Jan 1981 (6)	0.00		16.67	51	5.56	11	0.00		0.00		4.17	47	112.50	28	(72)	19.28 35
Feb (6)	16.67	35	0.00		16.67	27	6.90	19	3.45	23	54.17	61	91.67	29	(72)	26.31 33
Mar (6)	333.33	26	48.57	41	111.11	44	10.71	20	10.00	19	100.00	61	680.00	39	(72)	204.38 35
Apr (6)	122.22	36	108.33	27	172.22	29	33.33	50	526.67	36	150.00	55	105.56	46	(72)	152.34 33
May (6)	16.67	63	208.33	25	27.78	82	48.28	62	83.33	34	8.33	62	32.35	36	(72)	59.79 53
Jun (6)	38.89	93	75.00	88	66.67	60	14.29	119	20.00	71	25.00	56	85.29	33	(72)	47.32 77
Jul (6)	77.78	78	25.00	41	27.78	62	189.66	71	134.48	47	41.67	42	151.43	44	(72)	90.59 57
Aug (6)	50.00	106	16.67	56	44.44	100	42.86	40	133.33	44	129.17	55	129.63	45	(72)	71.48 68

^a Weighted by amount of shoreline in each bay system.

Table 5. Mean catch rate (No./tow) and mean width (mm) of blue crabs caught with trawls in Texas bay systems. (Blank = no samples or measurements taken).

Month Year	Galveston			Matagorda			San Antonio			Aransas			All bays combined ^a		
	Total tows	No./Tow	Width	Total tows	No./Tow	Width	Total tows	No./Tow	Width	Total tows	No./Tow	Width	Total tows	No./Tow	Width
Sep 1979	30	2.4	97	9	3.3	88	20	0.9	81	22	8.1	50	81	3.0	87
Oct	30	5.8	78	9	0.7	56	20	4.4	89	22	19.9	65	81	5.7	72
Nov	30	5.6	58	9	0.7	118	20	1.4	97	22	7.2	78	81	3.8	82
Dec	30	1.4	83	9	0.6	126	20	4.5	69	22	2.4	90	81	1.8	93
Jan 1980															
Feb	15	1.3	139	9	2.6	122	10	6.0	50	11	1.6	33	45	2.4	109
Mar	15	6.4	81	9	9.1	77	10	96.3	47	11	44.5	52	45	25.2	72
Apr	15	7.0	87	9	17.2	74	10	9.0	59	11	6.6	74	45	10.0	78
May	15	34.1	78	9	31.8	89	10	1.3	80	11	5.9	70	45	25.4	80
Jun	30	29.0	99	9	4.3	114	20	4.4	77	22	14.5	92	81	17.0	99
Jul	30	13.1	104	9	2.6	126	20	1.8	82	21	2.5	94	80	7.4	105
Aug	30	10.3	97	9	0.3	153	20	1.8	81	17	1.8	85	76	5.4	108

^a Weighted by amount of area in each bay system.

Table 6. Mean catch rate (No./tow) and mean width (mm) of blue crabs caught with trawls in Texas bay systems. (Blank = no samples or measurements taken).

Month Year	Galveston		Matagorda		San Antonio		Arkansas		All bays combined ^a							
	Total tows	No./Tow	Total tows	No./Tow	Total tows	No./Tow	Total tows	No./Tow	Total tows	No./Tow						
Sep 1980	30	8.3	109	0.4	119	0.4	20	0.4	82	0.8	22	81	0.8	81	4.2	105
Oct	30	3.5	115	0.8	120	0.4	20	0.4	107	2.2	22	76	2.2	81	2.2	111
Nov	11	0.6	101	0.4	61	1.0	20	1.0	72	2.3	22	52	2.3	62	0.8	81
Dec	30	0.5	138	0.0		1.0	20	1.0	81	1.7	22	65	1.7	81	0.6	115
Jan 1981																
Feb	15	0.1	52	0.3	85	6.6	10	6.6	36	5.7	11	32	5.7	45	1.8	56
Mar	15	2.3	104	2.3	52	12.5	10	12.5	66	4.0	11	67	4.0	45	4.1	80
Apr	15	10.7	75	9.3	85	19.5	10	19.5	78	7.1	11	63	7.1	45	11.3	77
May	15	15.5	93	6.0	94	19.7	10	19.7	81	16.5	11	96	16.5	45	13.7	92
Jun	30	13.1	89	2.4	103	9.8	20	9.8	95	5.7	22	81	5.7	81	8.9	93
Jul	30	5.8	101	1.7	104	17.2	20	17.2	97	2.2	22	77	2.2	81	6.1	99
Aug	30	2.8	106	2.7	120	16.9	20	16.9	92	1.8	22	64	1.8	81	4.9	103

^a Weighted by amount of area in each bay system.

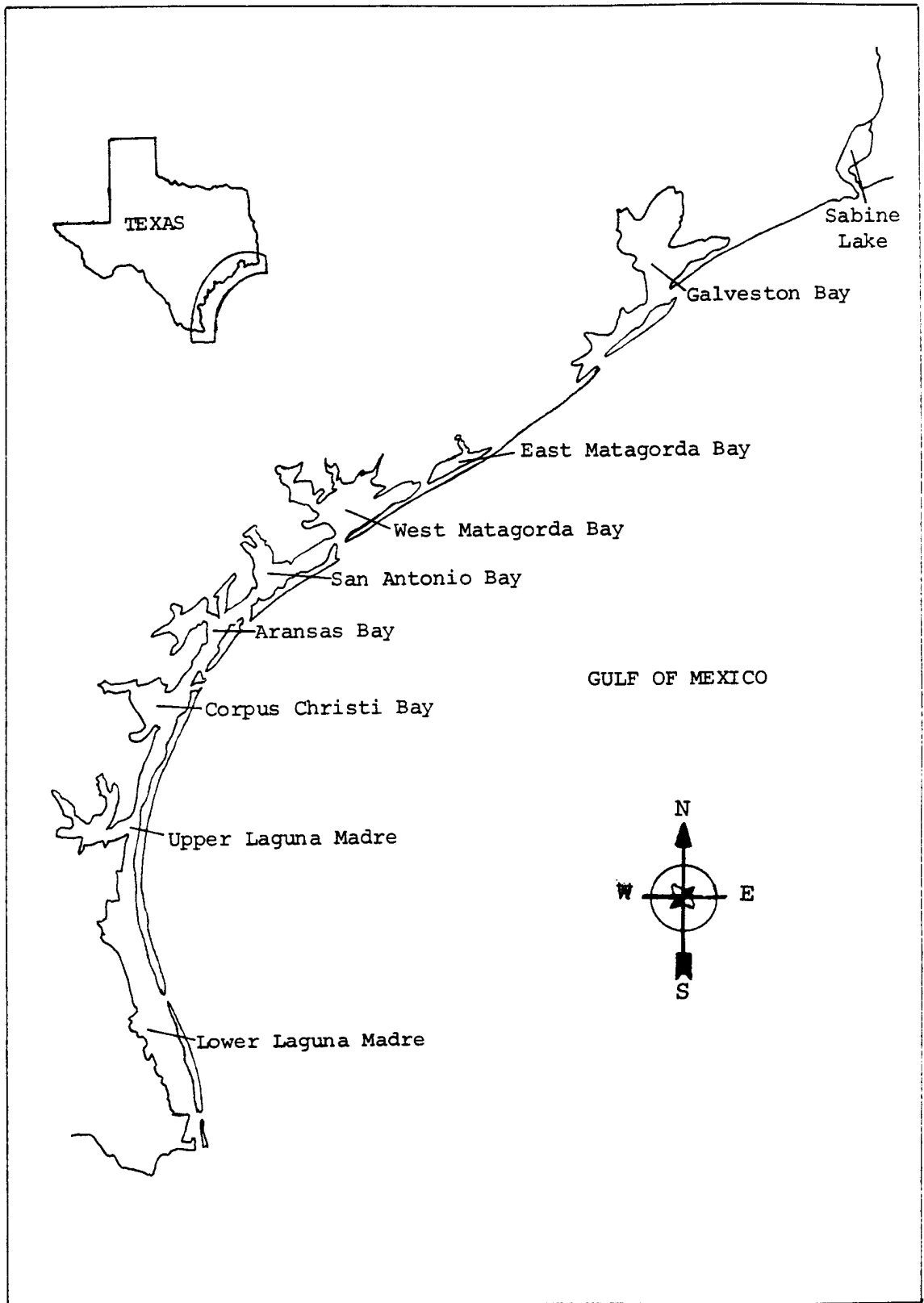


Figure 1. Map of the Texas coast indicating bay system locations.

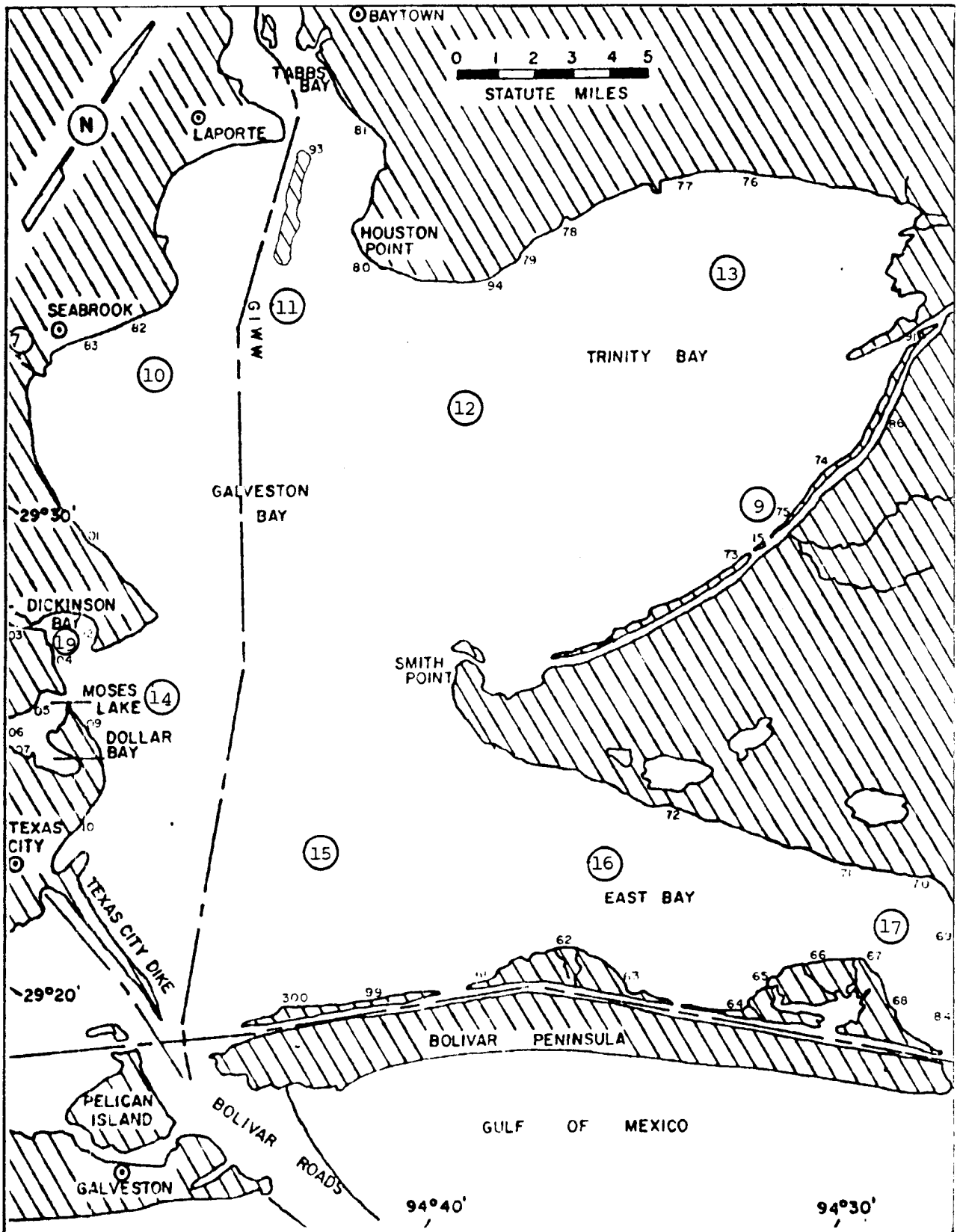


Figure 2. Map of the Galveston Bay system indicating 6.1-m trawl station (circled numbers) and 18.3-m bag seine station locations, September 1979-August 1981.

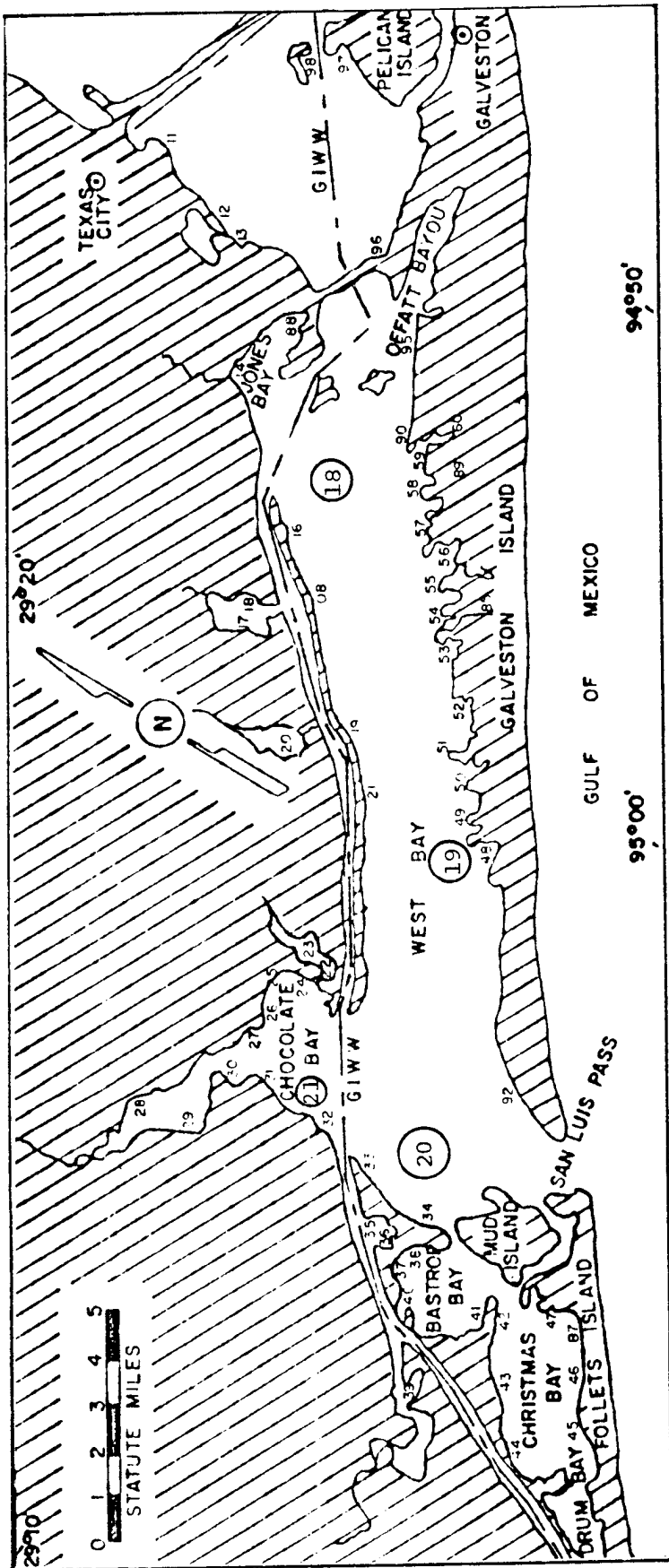


Figure 3. Map of the Galveston Bay system indicating 6.1-m trawl station (circled numbers) and 18.3-m bag seine station locations, September 1979-August 1981.

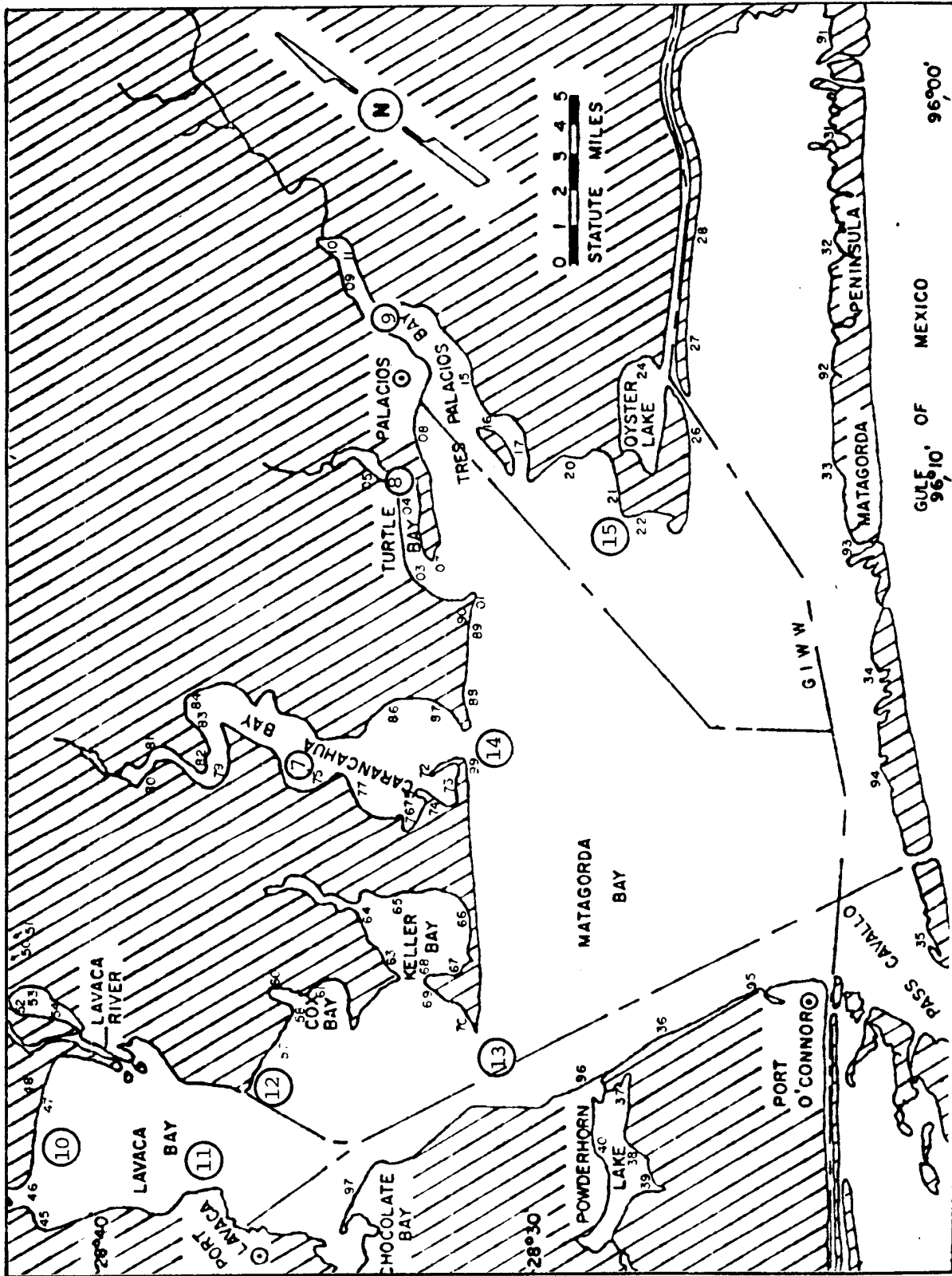


Figure 4. Map of the Matagorda Bay system indicating 6.1-m trawl station (circled numbers) and 18.3-m bag seine station locations, September 1979-August 1981.

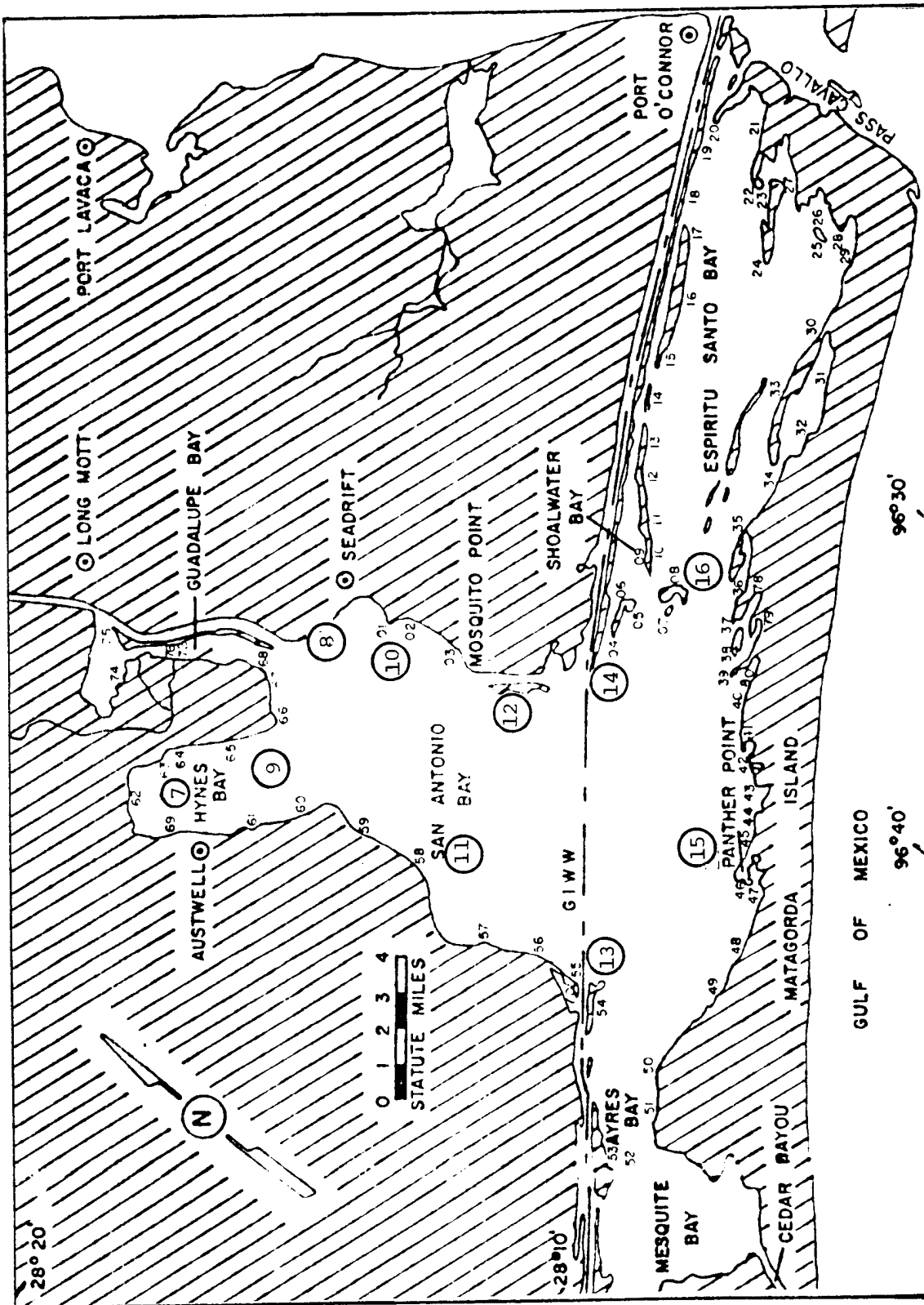


Figure 5. Map of the San Antonio Bay system indicating 6.1-m trawl station (circled numbers) and 18.3-m bag seine station locations, September 1979-August 1981.

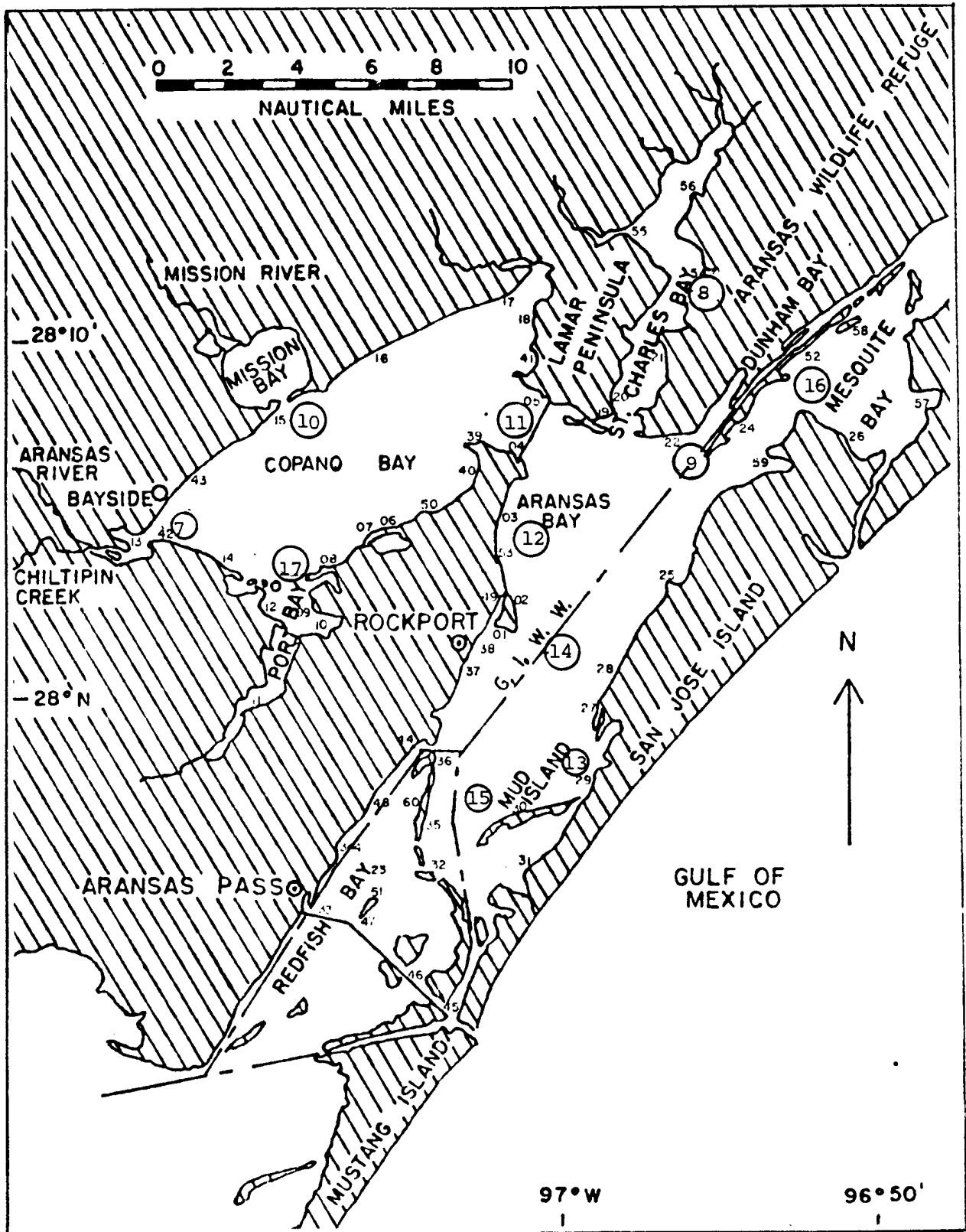


Figure 6. Map of the Aransas Bay system indicating 6.1-m trawl station (circled numbers) and 18.3-m bag seine station locations, September 1979-August 1981.

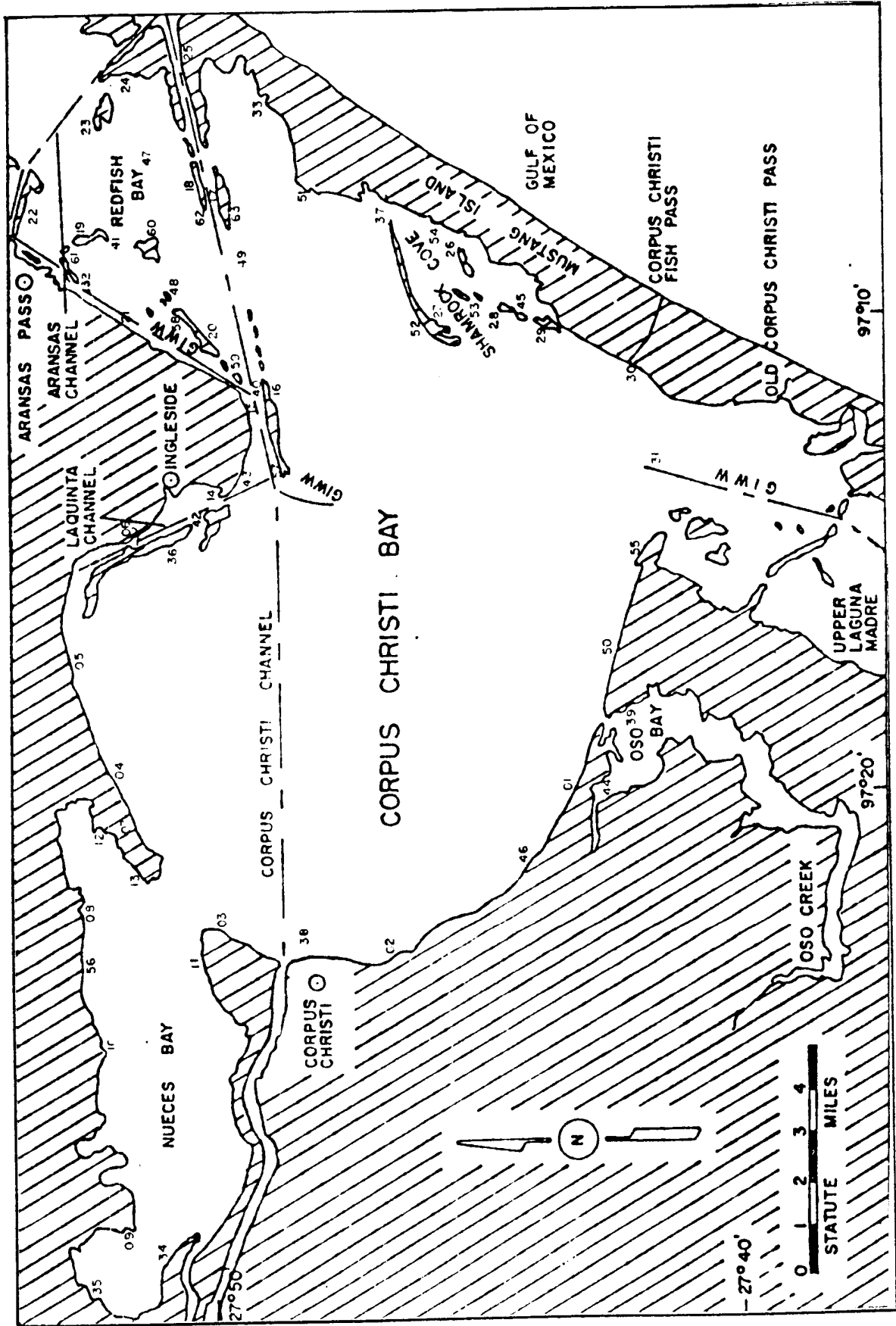


Figure 7. Map of the Corpus Christi Bay system indicating 18.3-m bag seine station locations, September 1979-August 1981.

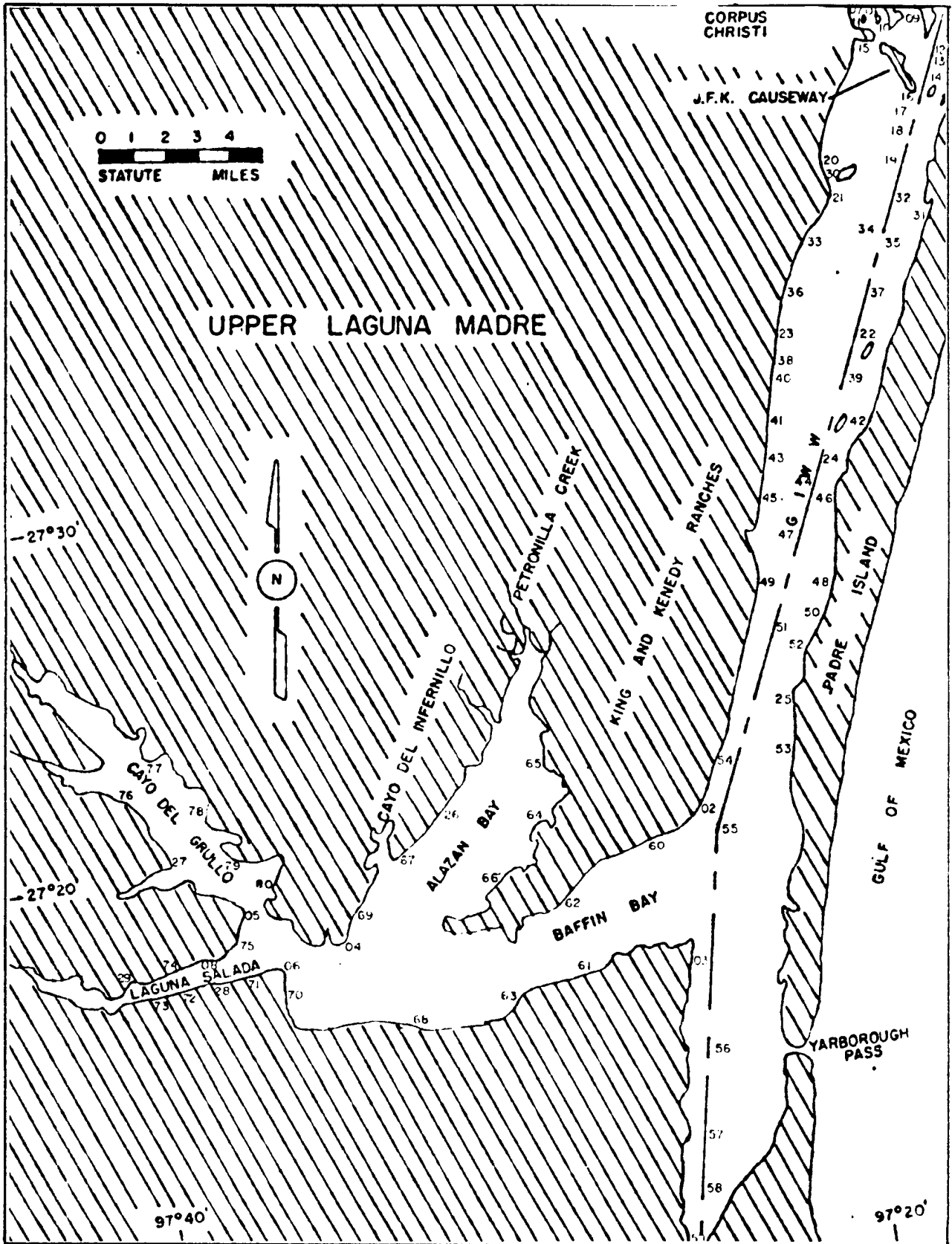


Figure 8. Map of the upper Laguna Madre indicating 18.3-m bag seine station locations, September 1979-August 1981.

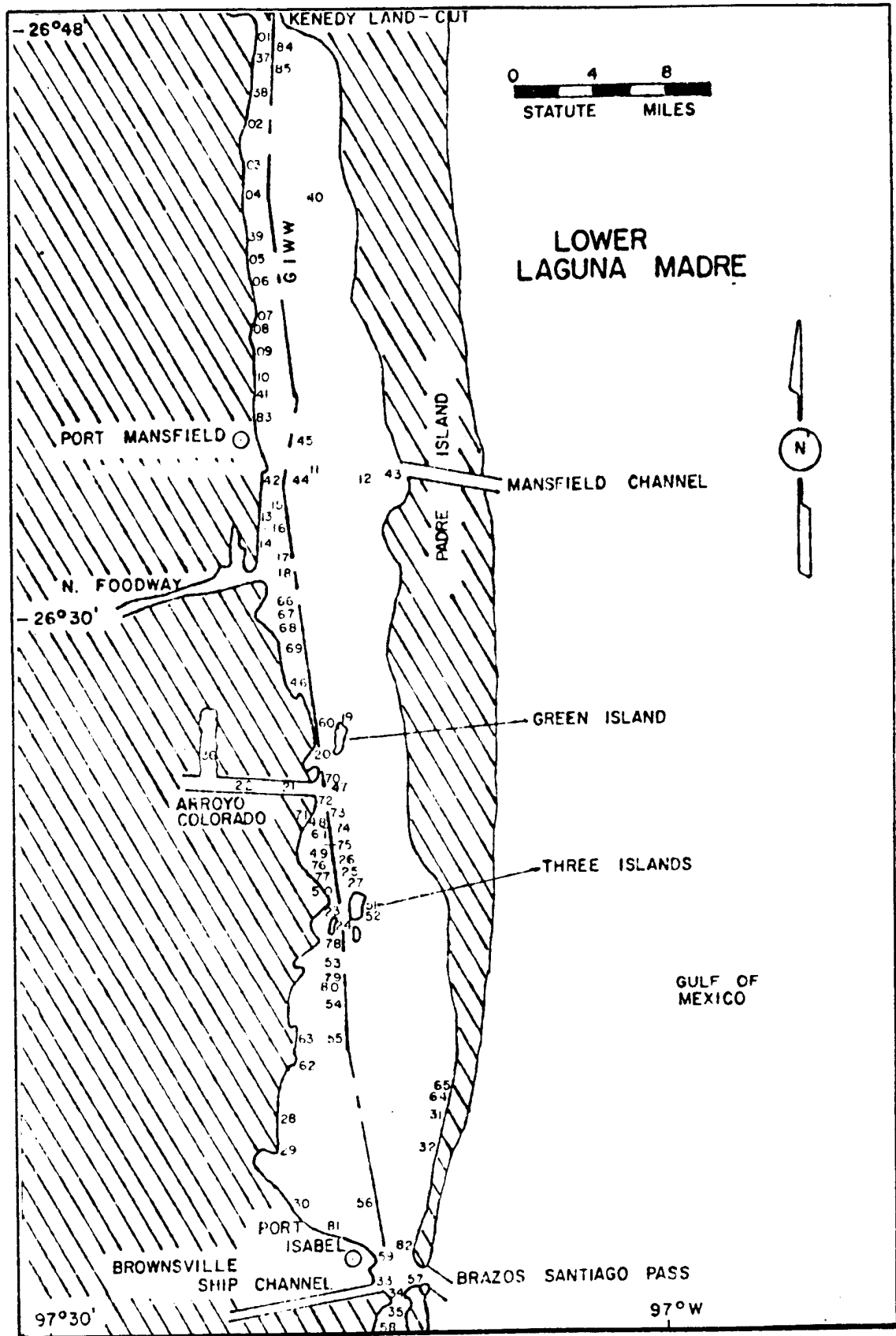


Figure 9. Map of the lower Laguna Madre indicating 18.3-m bag seine station locations, September 1979 - August 1981.

Appendix A - 18.3-m Bag Seine Station Locations

Bag seine station locations in each bay system.

Bay system	Bay	Station number	Latitude	Longitude	Station identification
Galveston	Galveston	201	29°30'20"	94°57'05"	0.2 mile E of Houston Lighting and Power Company's P. H. Robinson Generating Station's discharge canal
	Galveston	202	29°30'45"	94°58'40"	Bacliff Public Boat Ramp
	Dickinson	203	29°28'20"	94°57'10"	Inside Dickinson Bay
	Dickinson	204	29°27'40"	94°56'30"	0.3 mile W of Marker 21 in Dickinson Bay Channel
	Moses Lake	205	29°26'05"	94°56'05"	1.2 mile SW of tide gate on entrance of Moses Lake
	Moses Lake	206	29°25'40"	94°57'05"	NE side of mouth of Moses Bayou
	Moses Lake	207	29°25'20"	94°56'20"	S shore of Moses Lake, 0.8 mile E of mouth
	West	208	29°16'05"	94°59'10"	0.1 mile NE of Greens Cut
	Galveston	209	29°26'30"	95°54'10"	0.9 mile E of tide gate of entrance of Moses Lake
	Galveston	210	29°24'10"	94°53'10"	1.0 mile N of Texas City Dike
	West	211	29°18'00"	94°56'50"	0.2 mile NE of Brasford Bayou
	Galveston	212	29°20'40"	94°53'40"	0.7 mile N of Campbell Bayou
	Galveston	213	29°20'00"	94°53'50"	0.2 mile S of Campbell Bayou
	Jones Lake	214	29°18'45"	94°55'45"	1.2 mile W of ramp of E end of Jones Lake
	Trinity	215	29°37'10"	94°42'40"	0.5 mile N of Lone Oak Bayou
	West	216	29°16'35"	94°58'30"	0.6 mile SW of ICW Marker 6
	Greens Lake	217	29°15'45"	94°59'55"	SW shore of Greens Lake
	Greens Lake	218	29°16'35"	94°59'30"	N shore of Greens Lake
	West	219	29°14'15"	95°00'55"	0.2 mile SW of Carancahua Cut
	Galveston	220	29°20'10"	94°46'45"	Sea Wolf Park
	West	221	29°13'10"	95°01'45"	1.4 mile SW of mouth of Carancahua Cut
	Halls Lake	222	29°10'45"	95°06'20"	0.2 mile S of The Narrows, SW shore of Halls Lake
	West	223	29°09'00"	95°02'40"	Sea Isle
	Chocolate	224	29°11'10"	95°06'30"	0.3 mile NW of The Narrows
	Chocolate	225	29°11'50"	95°07'15"	0.1 mile E of Amerada Cut
	Chocolate	226	29°11'40"	95°07'40"	0.6 mile NE of Nymph Point

(Cont'd).

Bay system	Bay	Station number	Latitude	Longitude	Station identification
Galveston	Chocolate	227	29°11'25"	95°08'15"	N edge Nymph Point
	Chocolate	228	29°12'25"	95°10'25"	0.2 mile N of Grassy Point
	Chocolate	229	29°11'30"	95°11'00"	1.4 mile W of Horse Grove Point
	Chocolate	230	29°11'15"	95°09'25"	0.5 mile S of Horse Grove Point
	Chocolate	231	29°10'30"	95°09'05"	0.5 mile S of Wharton Camp Bayou
	Chocolate	232	29°09'30"	95°09'15"	0.6 mile NW ICWW Marker 10
	West	233	29°08'15"	95°09'35"	0.4 mile S of ICWW Marker 11
	West	234	29°06'30"	95°09'40"	0.3 mile NW Guyton Cut
	Oyster Lake	235	29°07'45"	95°10'20"	N shore of Oyster Lake
	Oyster Lake	236	29°07'05"	95°10'50"	SW shore of Oyster Lake, 0.2 mile NW of mouth
Bastrop	Bastrop	237	29°06'40"	95°11'05"	0.1 mile E of Oyster Lake Bayou
	Bastrop	238	29°06'30"	95°10'15"	0.8 mile NW of Guyton Cut
	Lost Lake	239	29°04'55"	95°12'40"	S shore of Lost Lake
	Bastrop Bay	240	29°05'55"	95°11'55"	0.4 mile NE of dredged channel that connects W side of Bastrop Bay with ICWW
Bastrop Bay	Bastrop Bay	241	29°04'40"	95°11'10"	0.8 mile W of Christmas Point
	Christmas	242	29°04'25"	95°11'15"	0.9 mile SW of Christmas Point
	Christmas	243	29°03'40"	95°12'10"	1.9 mile SW of Christmas Point
	Christmas	244	29°02'50"	95°13'15"	1.3 mile NW of Rattlesnake Point
	Christmas	245	29°01'55"	95°11'45"	0.1 mile NE of Cedar Cut
	Christmas	246	29°02'20"	95°10'55"	1.0 mile NE of Cedar Cut
	Christmas	247	29°03'20"	95°09'40"	0.2 mile S of Churchill Bayou
	West	248	29°09'45"	95°01'50"	NE shore of Snake Island Cove
	West	249	29°10'20"	95°01'20"	0.2 mile NE of Maggie's Point
	West	250	29°10'35"	95°01'10"	McAllis Point
	West	251	29°11'00"	95°00'40"	S edge of Shell Island Point
	West	252	29°11'20"	94°59'45"	SE shore of Jumbile Cove
	West	253	29°12'30"	94°58'35"	NE shore of Carancahua Cove
West	West	254	29°12'40"	94°57'50"	SW shore of Dana Cove
	West	255	29°13'05"	94°57'40"	Point between Dana Cove and Hoeckers Cove
	West	256	29°13'40"	94°57'05"	SE edge of Hoeckers Point
West	257	29°13'55"	94°56'55"	0.1 mile NE of Tucker Bayou	

(Cont'd).

Bay system	Bay	Station number	Latitude	Longitude	Station identification
Galveston	West	258	29°14'05"	94°56'20"	SW shore of Starvation Cove
	West	259	29°14'10"	94°56'05"	SW edge of Mentzell Bayou
	West	260	29°14'45"	94°55'40"	0.4 mile SW of Auzston Bayou
	East	261	29°27'40"	94°41'40"	1.6 mile SW of Elmgrove Point
	East	262	29°28'30"	94°40'30"	0.3 mile W of Elmgrove Point
	East	263	29°28'30"	94°39'00"	0.4 mile NW of Bob's Cut
	East	264	29°29'30"	94°35'50"	S edge of Yates Bayou
	East	265	29°30'20"	94°35'45"	N edge of Big Pasture Bayou
	East	266	29°31'30"	94°34'40"	0.4 mile SW of canal through Long Point
	East	267	29°31'50"	94°33'50"	0.5 mile NE of canal through Long Point
	East	268	29°31'20"	94°32'25"	1.7 mile E of canal through Long Point
	East	269	29°33'20"	94°31'50"	1.0 mile NW of Frozen Point
	East	270	29°34'10"	94°34'20"	0.2 mile SW of Robinson Bayou
	East	271	29°33'20"	94°36'30"	Second windmill W of Robinson Bayou
	East Trinity	272	29°32'10"	94°41'10"	Stephenson Point
	Trinity	273	29°36'40"	94°43'10"	NW side of spoil island off Lone Oak Bayou
	Trinity	274	29°40'30"	94°42'00"	NW side of spoil island 0.2 mile S at Black Point
	Trinity	275	29°39'40"	94°42'00"	0.8 mile N of Double Bayou, on NW side of spoil island
	Galveston Trinity	276	29°19'20"	94°45'30"	East Lagoon
	Galveston Trinity	277	29°44'50"	94°49'30"	0.5 mile SW of Houston Lighting and Power Company's Cedar Bayou Generating Station's discharge canal
	Galveston	278	29°22'00"	94°48'55"	Texas City Dike
	Trinity	279	29°42'20"	94°51'30"	2.4 mile SW of Point Barrow
	Galveston	280	29°39'30"	94°55'50"	Mesquite Knoll
	Galveston	281	29°41'55"	94°57'10"	0.3 mile W of Houston Lighting and Power Company's Cedar Bayou Generating Station's intake canal

(Cont'd).

Bay system	Bay	Station number	Latitude	Longitude	Station identification
Galveston	Galveston	282	29°35'20"	94°59'30"	N edge of Surf Oaks
	Galveston	283	29°34'55"	95°00'00"	0.7 mile SW of Surf Oaks
	East	284	29°32'35"	94°30'00"	1.3 mile E of Frozen Point
	West	285	29°12'15"	94°57'25"	NE shore of Oak Bayou, 0.9 mile E of mouth
	Trinity	286	29°42'25"	94°41'25"	Ash Point
	Christmas	287	29°02'50"	95°10'05"	0.7 mile S of mouth of Churchill Bayou
	Galveston	288	29°19'30"	94°49'25"	W Pelican Island
	West	289	29°13'20"	94°56'00"	NE side of Tucker Bayou, 1.1 mile SE of mouth
	West	290	29°15'20"	94°55'10"	W end of Anderson Ways Road
	Trinity	291	29°44'10"	94°42'00"	W shore of spoil island at Round Point
	West	292	29°06'30"	95°06'10"	1.4 mile NE of E side of San Luis Pass
	Galveston	293	29°41'05"	94°58'15"	E shore of Atkinson Island, 0.3 mile SE of Barbours Cut
	Trinity	294	29°40'20"	94°52'10"	Umbrella Point
	West	295	29°16'15"	94°53'20"	0.6 mile SW of Teichman Point
	Galveston	296	29°17'25"	94°52'05"	SE end of railroad bridge
	Galveston	297	29°20'20"	94°49'20"	W side of Pelican Island, 0.3 mile south ICWW Galveston-Freeport cut off
	Galveston	298	29°21'05"	94°49'35"	N tip of Pelican Island, 0.4 mile NW of ICWW
	Galveston	299	29°25'30"	94°43'30"	0.8 mile SW of Sievers Cut
	Galveston	300	29°23'40"	94°45'40"	Baffle Point

(Cont'd).

Bay system	Bay	Station number	Latitude	Longitude	Station identification
Matagorda	Matagorda	201	28°38'40"	96°18'17"	Wells Point
	Turtle	202	28°39'43"	96°18'16"	Silver Creek
	Turtle	203	28°40'35"	96°17'52"	Shell Beach
	Turtle	204	28°41'08"	96°17'00"	Buttermilk Slough
	Turtle	205	28°43'10"	96°15'25"	Upper Turtle Bay
Matagorda	Matagorda	206	28°27'12"	96°20'51"	Bird Island
	Turtle	207	28°40'20"	96°16'55"	Turtle Point
Matagorda	Matagorda	208	28°41'35"	96°14'10"	Settergest Marsh
Tres Palacios	Tres Palacios	209	28°44'47"	96°11'10"	Slaughter Flats
Tres Palacios	Tres Palacios	210	28°45'15"	96°10'10"	Tres Palacios River, East
Tres Palacios	Tres Palacios	211	28°44'10"	96°10'51"	Pepper Hill
Lavaca	Lavaca	212	28°41'20"	96°34'33"	Lavaca River Channel Marker 16
Lavaca	Lavaca	213	28°36'00"	96°36'52"	Harbor of Refuge, North
Matagorda	Matagorda	214	28°36'22"	96°24'31"	Smith Ranch fence, 2 mi. SW Caranchua Pass
Tres Palacios	Tres Palacios	215	28°41'30"	96°12'21"	Redfish Lake
Matagorda	Matagorda	216	28°26'33"	96°23'44"	Pt. O'Connor Little jetties
Matagorda	Matagorda	217	28°24'05"	96°24'20"	Saluria Bayou North
Matagorda	Matagorda	218	28°26'15"	96°20'00"	North Inside jetties
Matagorda	Matagorda	219	28°38'35"	96°14'00"	Oliver Point South
Matagorda	Matagorda	220	28°37'53"	96°13'22"	Pipeline Crossing
Matagorda	Matagorda	221	28°37'00"	96°12'45"	Palacios Bayou Flats
Matagorda	Matagorda	222	28°35'25"	96°13'50"	Boat Harbor
Oyster Lake	Oyster Lake	223	28°37'22"	96°11'16"	Oyster Lake
Oyster Lake	Oyster Lake	224	28°37'41"	96°10'40"	N Corner, Oyster Lake
Matagorda	Matagorda	225	28°34'47"	96°13'00"	Palacios Point South
Matagorda	Matagorda	226	28°35'44"	96°11'00"	ICWW, Southwest
Matagorda	Matagorda	227	28°35'53"	96°10'16"	ICWW, Northwest
Matagorda	Matagorda	228	28°37'20"	96°06'26"	Mad Island
Matagorda	Matagorda	229	28°36'32"	96°09'00"	Tank Battery
Matagorda	Matagorda	230	28°35'50"	96°03'15"	Between tide gauge and Watermelon Mott
Matagorda	Matagorda	231	28°35'22"	96°02'43"	Tide Gauge
Matagorda	Matagorda	232	28°33'07"	96°07'15"	Watermelon Mott
Matagorda	Matagorda	233	28°31'17"	96°11'25"	Oil Well Cut
Matagorda	Matagorda	234	28°29'05"	96°15'00"	Poco Aqua
Matagorda	Matagorda	235	28°25'00"	96°21'35"	Decro Point

(Cont'd).

Bay system	Bay	Station number	Latitude	Longitude	Station identification
Matagorda	Matagorda	236	28°27'10"	96°29'30"	La Salle Bayou
	Powderhorn Lake	237	28°30'00"	96°29'05"	East Corner Powderhorn Lake
	Powderhorn Lake	238	28°29'00"	96°30'42"	Powderhorn Ranch Marsh
	Powderhorn Lake	239	28°28'37"	96°31'39"	Powderhorn Lake, West
	Powderhorn Lake	240	28°30'10"	96°31'00"	Powderhorn N Central Shore
	Lavaca	241	28°33'25"	96°31'30"	Indian Point
	Lavaca	242	28°34'50"	96°36'25"	1 mile West of Alamo Beach
	Matagorda	243	28°31'54"	96°36'20"	Blind Bayou
	Matagorda	244	28°27'37"	96°24'40"	Boggy Bayou
	Lavaca	245	28°41'46"	96°39'45"	Six Mile Creek
	Lavaca	246	28°42'38"	96°38'31"	Garcitas Cove
	Lavaca	247	28°43'05"	96°37'11"	Venado West
	Lavaca	248	28°42'30"	96°34'15"	2 miles SE Venado Creek
	Lavaca	249	28°43'10"	96°35'00"	0.5 miles E. Venado Creek
	Redfish Lake	250	28°47'41"	96°34'27"	Redfish Lake, Northwest
	Redfish Lake	251	28°46'41"	96°33'43"	Redfish Lake, Southeast
	Lavaca	252	28°38'07"	96°36'50"	Noble Point
	Swan Lake	253	28°45'00"	96°34'09"	Swan Lake, North
	Swan Lake	254	28°43'55"	96°33'41"	Swan Lake, East
	Cox	255	28°38'22"	96°33'05"	Point Comfort Harbor
	Lavaca	256	28°39'58"	96°34'30"	Alcoa
	Lavaca	257	28°36'52"	96°30'00"	Rhodes Point
	Cox	258	28°38'24"	96°31'05"	Cox Point
	Matagorda	259	28°30'00"	96°14'25"	Greens Bayou Point
	Cox	260	28°34'24"	96°30'35"	Huisache Cove
	Cox	261	28°38'07"	96°30'00"	Cox Cove, North
	Matagorda	262	28°28'00"	96°17'00"	Matagorda Airfield Club jetties, North
	Keller	263	28°36'33"	96°28'55"	Mud Point
	Keller	264	28°37'49"	96°28'00"	Olivia
	Keller	265	28°37'39"	96°27'02"	Smith Ranch House
	Keller	266	28°35'55"	96°26'20"	Smith's Slough
	Keller	267	28°35'10"	96°27'35"	Keller Bay, SW Corner
	Keller	268	28°35'48"	96°28'30"	Smith's Point
	Lavaca	269	28°35'00"	96°29'00"	Humble Oil Dock
	Lavaca	270	28°35'15"	96°29'18"	Sand Point Lavaca
	Matagorda	271	28°35'25"	96°26'20"	Smith's Cedars

(Cont'd).

Bay system	Bay	Station number	Latitude	Longitude	Station identification
Matagorda	Redfish Lake	272	28°37'43"	96°23'07"	Redfish Lake, N Pocket
	Redfish Lake	273	28°37'15"	96°22'55"	Redfish Lake, E Shore
	Redfish Lake	274	28°37'15"	96°23'55"	Redfish Lake, SW Shore
	Salt Lake	275	28°37'50"	96°23'53"	Salt Lake, E Pocket
	Salt Lake	276	28°37'55"	96°25'00"	Salt Lake, W Pocket
	Carancahua	277	28°38'26"	96°25'00"	Port Alto, South
	Carancahua	278	28°41'33"	96°24'42"	Port Alto, North
	Carancahua	279	28°42'31"	96°25'55"	Wolf Point Flats
	Carancahua	280	28°44'19"	96°26'18"	Carancahua Bay, North
	Carancahua	281	28°44'32"	96°25'51"	Carancahua Bay, East
	Carancahua	282	28°43'03"	96°25'48"	Cape Carancahua
	Carancahua	283	28°44'05"	96°25'20"	Crescent V, West
	Carancahua	284	28°43'57"	96°23'40"	Crescent V, East
	Matagorda	285	28°25'00"	96°24'05"	Big Bayou
	Carancahua	286	28°39'43"	96°22'16"	Houston Point
	Carancahua	287	28°37'57"	96°21'34"	Schicke Point, Inside
	Matagorda	288	28°37'30"	96°21'34"	Schicke Point, Outside
	Matagorda	289	28°38'20"	96°20'00"	Piper Lake
	Matagorda	290	28°38'30"	96°19'11"	Marine Fisheries Research Station
	Matagorda	291	28°36'28"	96°09'05"	S E Pocket
	Matagorda	292	28°32'10"	96°09'54"	Trout Bayou
	Matagorda	293	28°30'30"	96°12'35"	Cotton Bayou
	Matagorda	294	28°27'25"	96°18'15"	Tom Cherry
	Matagorda	295	28°28'24"	96°25'24"	Broad Bayou
	Matagorda	296	28°30'32"	96°28'47"	Powderhorn Bayou
	Lavaca	297	28°35'00"	96°35'00"	Alamo Beach
	Matagorda	298	28°34'12"	96°28'49"	Sand Point, South
	Matagorda	299	28°37'00"	96°22'55"	Carancahua Pass, West
	Lavaca	300	28°33'50"	96°32'50"	1 mile NW of Magnolia Beach boat launch

(Cont'd).

Bay system	Bay	Station number	Latitude	Longitude	Station identification
San Antonio	San Antonio	201	28° 23' 22"	96° 42' 35"	Swan Point
	San Antonio	202	28° 22' 45"	96° 41' 50"	Mosquito Cove, 1 mile S of Swan Point
	San Antonio	203	28° 21' 55"	96° 42' 00"	Mosquito Cove, 1.25 miles N of Mosquito Cove
	San Antonio	204	28° 19' 00"	96° 39' 15"	W point of Grass Island
	San Antonio	205	28° 19' 05"	96° 37' 55"	E point of Grass Island
	Shoalwater	206	28° 19' 25"	96° 38' 00"	N point of Grass Island
	San Antonio	207	28° 18' 15"	96° 37' 35"	Small island just W of Steamboat Island
	Espiritu Santo	208	28° 18' 36"	96° 37' 05"	Middle of E side of Steamboat Island
	Shoalwater	209	28° 19' 30"	96° 36' 55"	1 mile from W point of Long Island in Shoalwater Bay
	Espiritu Santo	210	28° 19' 25"	96° 37' 35"	1.25 mile from W point of Long Island in Espiritu Santo Bay
	Espiritu Santo	211	28° 20' 20"	96° 35' 47"	2.50 miles from W point of Long Island in Espiritu Santo Bay
	Espiritu Santo	212	28° 21' 10"	96° 34' 52"	Long Island 0.5 mile W of Lane
	Espiritu Santo	213	28° 21' 45"	96° 33' 52"	Long Island 0.5 mile E of Lane
	Espiritu Santo	214	28° 22' 10"	96° 32' 55"	Long Island 1.5 miles E of Lane
	Espiritu Santo	215	28° 22' 47"	96° 31' 07"	0.5 mile from W point of Dewberry Island
	Espiritu Santo	216	28° 23' 15"	96° 30' 10"	1.5 miles from W point of Dewberry Island
	Espiritu Santo	217	28° 23' 50"	96° 29' 12"	Dewberry Island 0.5 mile W of Army channel
	Espiritu Santo	218	28° 24' 13"	96° 28' 18"	Blackberry Island 0.75 mile E of Army channel
	Espiritu Santo	219	28° 24' 48"	96° 27' 12"	Blackberry Island 1.75 miles E of Army channel
	Espiritu Santo	220	28° 15' 18"	96° 26' 06"	Blackberry Island at mouth of Barroom Bay
	Espiritu Santo	221	28° 23' 49"	96° 26' 12"	1.25 miles E of Bayoucou Point
	Espiritu Santo	222	28° 23' 00"	96° 27' 09"	Bayoucou Point

(Cont'd).

Bay system	Bay	Station number	Latitude	Longitude	Station identification
San Antonio	Espiritu Santo	223	28°22'40"	96°27'20"	N side of Grass Island 0.5 mile from E point
	Espiritu Santo	224	28°22'15"	96°28'10"	N side of Grass Island 0.5 mile from W point
	Espiritu Santo	225	28°21'35"	96°27'25"	W point of Farwell Island
	Espiritu Santo	226	28°21'50"	96°26'53"	E point of Farwell Island
	Espiritu Santo	227	28°21'15"	96°26'25"	0.5 mile S of second oil well off Saluria Bayou
	Espiritu Santo	228	28°21'00"	96°26'22"	Big Pocket
	Espiritu Santo	229	28°20'33"	96°26'33"	Lighthouse Cove W of derelict boat on shore
	Espiritu Santo	230	28°19'51"	96°28'48"	0.25 mile W of Army hole on Vanderveer Island
	Pringle Lake	231	28°18'51"	96°30'22"	S shore Pringle Lake 2 miles E of Rahal Bayou
	Pringle Lake	232	28°18'22"	96°31'25"	S shore Pringle Lake 1 mile E of Rahal Bayou
	Espiritu Santo	233	28°19'25"	96°31'21"	Pringle Cut in center of Vanderveer Island
	Espiritu Santo	234	28°18'07"	96°33'10"	Rahal Bayou
	Espiritu Santo	235	28°18'05"	96°34'30"	South Pass Lake, E cut
	San Antonio	236	28°17'10"	96°35'53"	South Pass Lake, W cut
	San Antonio	237	28°16'50"	96°36'45"	Long Lake mouth on N shore
	San Antonio	238	28°16'35"	96°37'06"	Island N of Corey Cove
	San Antonio	239	28°16'05"	96°37'50"	Corey Cove point
	San Antonio	240	28°15'35"	96°37'50"	Pats Bay mouth on S shore
	San Antonio	241	28°15'12"	96°39'06"	1 mile S Pats Bay between two guts
	San Antonio	242	28°14'25"	96°39'15"	Mouth of Twin Lakes
	San Antonio	243	28°13'54"	96°39'54"	Cedar Point
	San Antonio	244	28°13'35"	96°40'00"	Mouth of Cedar Lake on S shore
	San Antonio	245	28°13'15"	96°41'00"	1 mile S of Cedar Lake
	San Antonio	246	28°12'30"	96°42'06"	0.5 mile S of Panther Point
	San Antonio	247	28°12'05"	96°41'55"	Panther Point Lake, just inside mouth on S shore

(Cont'd).

Bay system	Bay	Station number	Latitude	Longitude	Station identification
San Antonio	San Antonio	248	28°11'45"	96°42'55"	1 mile S of Panther Point Lake mouth
	San Antonio	249	28°11'20"	96°45'05"	Mouth of Cottonwood Bayou
	San Antonio	250	28°11'21"	96°47'24"	Ayres Point
	Ayres	251	28°10'30"	96°48'55"	Point S of Ayres Point
	Ayres	252	28°10'05"	96°49'10"	Ayres Dugout
	Ayres	253	28°11'20"	96°50'00"	Rattlesnake Island
	Mustang Island	254	28°13'50"	96°47'30"	Mouth of Mustang Lake E shore
	San Antonio	255	28°14'43"	96°46'35"	Point of land N of Marker 35
	San Antonio	256	28°15'20"	96°47'15"	Live Oak Point
	San Antonio	257	28°16'27"	96°47'47"	Dagger Point
	San Antonio	258	28°19'17"	96°47'45"	Webb Point
	San Antonio	259	28°20'21"	96°47'33"	0.5 mile S of Hopper Landing
	Hynes	260	28°21'48"	96°47'51"	McDowell Point
	Hynes	261	28°22'22"	96°49'00"	1 mile N of McDowell Point
	Hynes	262	28°25'20"	96°50'51"	Point of land in center head of Hynes Bay
	Hynes	263	28°25'40"	96°49'40"	1 mile S of Townsend Bayou
	Hynes	264	28°25'10"	96°48'45"	Opposite steel gate in marsh
	Hynes	265	28°24'33"	96°47'50"	Swan Lake bayou N of mouth
	Hynes	266	28°23'54"	96°46'37"	Grassey Point
	San Antonio	267	28°24'25"	96°47'20"	Midway between Grassey Point and Marsh Point
	Guadalupe	268	28°25'25"	96°45'50"	Foster Point
	Hynes	269	28°24'15"	96°51'00"	Opposite tall cylindrical tower
	San Antonio	270	28°14'00"	96°47'50"	Mouth of Mustang Lake W shore
	San Antonio	272	28°20'18"	96°42'01"	Opposite Channel Marker 13
	San Antonio	273	28°19'30"	96°41'30"	Opposite Channel Marker 11
	Guadalupe	276	28°27'15"	96°47'25"	South Guadalupe River
	Guadalupe	277	28°27'05"	96°46'40"	E of South Guadalupe River
	Long Lake	278	28°17'00"	96°35'50"	N shore of Long Lake
	Long Lake	279	28°16'35"	96°35'45"	S shore of Long Lake
	Pats	280	28°15'55"	96°37'05"	N shore of Pats Bay
	San Antonio	281	28°13'40"	96°47'05"	1 mile S of False Live Oak Pt.
	San Antonio	282	28°11'25"	96°46'45"	1 mile E of Ayres Pt.
	San Antonio	283	28°11'25"	96°44'00"	2 mile S of Panther Pt. Lake mouth

(Cont'd).

Bay system	Bay	Station number	Latitude	Longitude	Station identification
Aransas	Little Aransas	201	28°01'40"	97°02'45"	SE corner of Little Bay
		202	28°03'17"	97°02'00"	0.25 miles S of Fulton Mansion off Fulton Beach Road
Aransas	Aransas	203	28°05'21"	97°02'00"	1 mile S of Racquet Club
		204	28°06'45"	97°01'35"	S end of Copano Causeway
		205	28°08'35"	97°01'00"	N end of Copano Causeway
		206	28°04'45"	97°05'25"	0.5 miles E Hannibal Point near tanks
Copano	Copano	207	28°04'13"	97°06'26"	Junction of Salt Lake and Copano Bay
		208	28°03'35"	97°07'50"	E of Rattlesnake Point
		209	28°02'19"	97°07'48"	Mouth of Italian Bend, N shore
		210	28°01'38"	97°08'20"	E end of old bridge ruins
		211	27°59'38"	97°10'02"	Redfish Camp
		212	28°01'57"	97°08'53"	Hey Camp Bend
		213	28°04'32"	97°13'28"	Black Point, SW side
		214	28°03'39"	97°11'05"	Rincon de la Cera
		215	28°07'57"	97°09'27"	Mouth of Mission, W shore
		216	28°10'00"	97°05'27"	3.5 miles NE of mouth of Mission Bay
Copano	Copano	217	28°11'18"	1.5 mile SW of Turtle Pen Point	
		218	28°10'30"	97°01'02"	Holiday Beach
St. Charles	St. Charles	219	28°07'57"	96°58'28"	Hail Point
		220	28°08'53"	96°58'20"	Just N of Big Tree
		221	28°09'57"	96°56'53"	EGG Point
		222	28°07'20"	96°56'45"	Halfway between Blackjack and Dunham Points
Redfish	Redfish	223	27°56'00"	97°56'00"	Second island NW of Big Bayou in Redfish Bay
		224	28°07'50"	96°54'15"	NE side of Cape Carlos
Aransas	Aransas	225	28°03'12"	96°56'44"	Long Reef
		226	28°07'09"	96°51'08"	1.5 mile W of mouth of Cedar Bayou
Aransas	Aransas	227	27°59'52"	96°58'47"	Junction of Allyns Lake and Aransas Bay
		228	28°01'14"	96°58'00"	1.5 mile NE of Allyns Lake

(Cont'd).

Bay system	Bay	Station number	Latitude	Longitude	Station identification
Aransas	Aransas	229	27°58'00"	96°58'48"	1.0 mile NE of St. Joseph Island Ranch House
	Aransas	230	27°56'42"	97°01'28"	N shore in middle of Mud Island
	Aransas	231	27°55'17"	97°01'03"	1.0 mile SW of oil tanks on San Jose Island
	Aransas	232	27°55'13"	97°04'22"	Corpus Christi Bayou
	Aransas	233	27°53'55"	97°08'08"	At entrance to Conn Brown Harbor
	Aransas	234	27°55'15"	97°07'22"	ICWW Marker 34
	Aransas	235	27°57'15"	97°04'15"	Oil well channel between Big and Trout bayous
	Aransas	236	27°59'05"	97°04'00"	Between Turtle Bayou and ICWW Marker 7
	Aransas	237	28°00'52"	97°03'09"	Hunts Courts
	Aransas	238	28°01'37"	97°02'35"	Rockport Beach, across from the big shell
	Copano	239	28°07'05"	97°02'22"	0.75 miles E of Redfish Point
	Copano	240	28°05'50"	97°03'04"	Third T-head N of Copano Village
	Copano	241	28°09'43"	97°01'08"	Palmetto Point
	Copano	242	28°04'18"	97°12'39"	N end of Egery Island
	Copano	243	28°06'07"	97°12'00"	Bayside
	Aransas	244	28°59'30"	97°04'10"	Just N of Cove Harbor between ICWW Marker 10 and 12
	Redfish	245	27°51'07"	97°04'00"	Harbor Island, near Fina loading dock
	Redfish	246	27°51'55"	97°04'54"	Most easterly bridge between Aransas Pass and Port Aransas
	Redfish	247	27°53'25"	97°06'35"	Fin and Feather Bait Stand
	Redfish	248	27°57'20"	97°05'53"	City by the Sea
	Little	249	28°02'45"	97°02'00"	Bridge in Little Bay
	Copano	250	28°05'10"	97°04'15"	1.0 mile SW of Aransas County Airport
	Redfish	251	27°54'10"	97°05'47"	NE tip of Hog Island
	Mesquite	252	28°09'55"	96°52'32"	1.0 mile W of area of junction of Sundown and Mesquite Bays
	Aransas	253	28°04'16"	97°02'07"	Sandollar Motel

(Cont'd).

Bay system	Bay	Station number	Latitude	Longitude	Station identification
Aransas	St. Charles	254	28°12'05"	96°55'43"	Indian Head Point
	St. Charles	255	28°12'55"	96°57'53"	Mouth of Cavasso Creek
	St. Charles	256	28°14'32"	96°55'34"	McHugh Bayou
	Mesquite	257	28°08'00"	96°48'37"	Bray Cove
	Mesquite	258	28°10'23"	96°51'07"	Roddy Island
	Aransas	259	28°06'40"	96°53'25"	N shore of Spaldings Bight
	Redfish	260	27°58'22"	97°04'50"	Estes Flats

(Cont'd).

Bay system	Bay	Station number	Latitude	Longitude	Station identification
Corpus Christi	Corpus Christi	201	27°42'51"	97°19'09"	0.75 mile SE of Oso Fishing Pier
	Corpus Christi	202	27°46'25"	97°23'21"	Holiday Inn on Ocean Drive
	Corpus Christi	203	27°49'50"	97°22'48"	Rincon Point
	Corpus Christi	204	27°51'58"	97°19'37"	2.0 miles NE of Indian Point Pier
	Corpus Christi	205	27°52'48"	97°16'45"	0.75 mle W of jetties in La Quinta Channel
	Corpus Christi	206	27°51'37"	97°14'45"	0.25 mile W of La Quinta Channel Marker 14
	Sunset Lake	207	27°51'38"	97°20'36"	S end of Sunset Lake
	Nueces	208	27°52'28"	97°22'38"	Just W of clay pits
	Nueces	209	27°51'40"	97°28'30"	White Point
	Nueces	210	27°52'12"	97°25'05"	0.5 mile E of westerly power-lines on N shore
	Nueces	211	27°50'14"	97°23'15"	Mouth of Rincon Industrial Park canal
	Nueces	212	27°51'52"	97°20'37"	Ramada Inn Motel
	Nueces	213	27°51'14"	97°21'31"	Gunderland's
	Corpus Christi	214	27°50'06"	97°13'21"	Public boat ramp in Ingleside Cove
	Corpus Christi	215	27°49'14"	97°12'09"	Sun Oil Dock 1 at Port Ingleside
	Corpus Christi	216	27°48'45"	97°11'41"	ICWV Marker 31
	Corpus Christi	217	27°49'47"	97°07'12"	N shore of Point of Mustang near Corpus Christi Channel Marker 13
	Corpus Christi	218	27°50'24"	97°06'06"	Corpus Christi Channel Marker 8
	Redfish	219	27°52'15"	97°08'04"	Middle of E shore of North Ransom Island
	Corpus Christi	220	27°49'53"	97°10'26"	S tip of Dagger Island
	Redfish	221	27°51'28"	97°10'05"	ICWV Marker 51
	Redfish	222	27°53'33"	97°07'32"	0.5 mile SE of Conn Brown Harbor on S shore
	Redfish	223	27°52'08"	97°05'55"	1.0 mile SE of Fin and Feather Marina
	Redfish	224	27°51'35"	97°04'56"	Most easterly bridge on causeway between Aransas Pass and Port Aransas

(Cont'd).

Bay system	Bay	Station number	Latitude	Longitude	Station identification
Corpus Christi	Corpus Christi	225	27°50'21"	97°04'18"	Port Aransas side of ferry landing
	Corpus Christi	226	27°45'05"	97°08'49"	0.25 mile S of sportsmen club cabin
	Corpus Christi	227	27°45'38"	97°10'00"	Middle of Shamrock Island on SE shore
	Corpus Christi	228	27°44'36"	97°09'38"	Long Cove
	Corpus Christi	229	27°43'27"	97°10'05"	Boat Cove
	Corpus Christi	230	27°41'58"	97°10'55"	Water Exchange Channel
	Corpus Christi	231	27°41'18"	97°13'17"	ICWW Marker 3
	Redfish	232	27°52'56"	97°08'41"	Junction of Ransom Drive and ICWW
	Corpus Christi	233	27°48'30"	97°05'44"	Mustang Beach
	Nueces	234	27°51'10"	97°30'00"	Just W of Nueces River Cut on shore
	Nueces	235	27°52'30"	97°30'40"	3.0 miles NW of mouth of Nueces River
	Corpus Christi	236	27°50'35"	97°14'47"	0.25 mile NW of Ingleside on La Quinta Channel spoil
	Corpus Christi	237	27°46'35"	97°07'54"	Mouth of Sinclair Cut
	Corpus Christi	238	27°48'24"	97°23'16"	Corpus Christi Channel Marker 85
	Oso	239	27°40'48"	97°18'27"	Mouth of Oso Bay
	Corpus Christi	240	27°48'56"	97°11'15"	Corpus Christi Channel Marker 31
	Redfish	241	27°51'36"	97°08'39"	S tip of North Ransom Island
	Corpus Christi	242	27°50'05"	97°14'00"	La Quinta Channel Marker 7
	Corpus Christi	243	27°49'28"	97°13'10"	McGloin Bluff
	Oso	244	27°42'35"	97°18'33"	Mouth of Oso Bay
	Corpus Christi	245	27°44'04"	97°09'39"	Boat Cove
	Corpus Christi	246	27°43'28"	97°20'40"	0.75 mile NW of Oso Fishing Pier
	Redfish	247	27°50'51"	97°07'21"	0.75 mile E of South Ransom Island
	Corpus Christi	248	27°50'46"	97°09'22"	0.25 mile NE of Dagger Island
	Corpus Christi	249	27°49'18"	97°09'43"	Corpus Christi Channel Marker 25
	Corpus Christi	250	27°42'22"	97°17'26"	0.5 mile NW of Naval Air Station bulkheads
	Corpus Christi	251	27°48'34"	97°07'06"	East flats

(Cont'd).

Bay system	Bay	Station number	Latitude	Longitude	Station identification
Corpus Christi	Corpus Christi	252	27°46'00"	97°09'53"	N side of Shamrock Island
	Corpus Christi	253	27°45'14"	97°09'29"	Glenn Cove
	Corpus Christi	254	27°45'21"	97°08'21"	SE of Green cabin in Shamrock Cove
	Corpus Christi	255	27°41'42"	97°14'51"	N shore of Demit Island
	Nueces	256	27°52'59"	97°23'38"	E powerlines on N shore
	Corpus Christi	257	27°48'47"	97°12'29"	SE of CCSC Marker 36
	Redfish	258	27°50'12"	97°10'11"	N shore of Dagger Island
	Corpus Christi	259	27°49'40"	97°10'46"	SW of Dagger Island
	Redfish	260	27°51'03"	97°08'08"	SE shore of S Ransom Island
	Redfish	261	27°52'41"	97°08'20"	N of N Ransom Island
	Corpus Christi	262	27°50'08"	97°07'14"	NE of CCSC Marker 14
	Corpus Christi	263	27°49'26"	97°07'55"	Point of Mustang

(Cont'd).

Bay system	Bay	Station number	Latitude	Longitude	Station identification
Laguna Madre	Upper Laguna Madre	201	27°40'40"	97°15'03"	1.0 mile SSW of E tip of Demit Island
	Upper Laguna Madre	202	27°19'40"	97°24'25"	Point of Rocks
	Upper Laguna Madre	203	27°14'58"	97°25'32"	0.8 mile NW of ICWW Flasher 19(S)
	Baffin	204	27°17'02"	97°36'45"	3.2 miles E of Riviera Beach
	Baffin	205	27°18'11"	97°39'15"	1.3 miles NNW of Riviera Beach
	Laguna Salada	206	27°16'33"	97°38'57"	1.2 miles SE of Riviera Beach
	Upper Laguna Madre	207	27°41'30"	97°15'01"	S shore of Demit Island
	Laguna Salada	208	27°17'00"	97°40'18"	0.7 mile SW of Riviera Beach
	Upper Laguna Madre	209	27°40'50"	97°14'06"	0.8 mile ESE of Demit Island
	Upper Laguna Madre	210	27°40'25"	97°15'20"	1.3 miles SW of Demit Island
	Upper Laguna Madre	211	27°40'20"	97°15'57"	1.7 miles SW of Demit Island
	Upper Laguna Madre	212	27°39'20"	97°13'40"	2.0 miles WNW of Corpus Christi Pass
	Upper Laguna Madre	214	27°38'28"	97°13'45"	2.0 miles WSW of Corpus Christi Pass
	Upper Laguna Madre	215	27°38'50"	97°16'40"	1.0 miles S of Kennedy Causeway
	Upper Laguna Madre	216	27°38'25"	97°15'25"	3.0 miles NE of Pita Island
	Upper Laguna Madre	217	27°37'47"	97°15'45"	2.3 miles NE of Pita Island
	Upper Laguna Madre	218	27°37'20"	97°16'20"	1.4 miles NE of Pita Island
	Upper Laguna Madre	219	27°36'00"	97°16'00"	0.3 mile ESE of Pita Island
	Upper Laguna Madre	220	27°36'30"	97°17'55"	0.6 mile NW of Pita Island
	Upper Laguna Madre	221	27°35'40"	97°17'40"	0.6 mile SW of Pita Island
	Upper Laguna Madre	222	27°32'08"	97°17'10"	0.9 mile NNE of North Bird Island
	Upper Laguna Madre	223	27°33'10"	97°19'35"	3.0 miles NW of North Bird Island
	Upper Laguna Madre	224	27°27'10"	97°19'55"	2.5 miles SSE of South Bird Island
	Upper Laguna Madre	225	27°22'08"	97°21'20"	8.6 miles SSW of South Bird Island
	Alazan	226	27°20'25"	97°31'52"	3.5 miles NNE of Starvation Point
	Cayo del Grullo	227	27°19'32"	97°41'00"	0.7 mile SE of Loyola Beach
	Laguna Salada	228	27°16'10"	97°41'20"	1.4 miles ESE of Williamson's Boat Dock
	Laguna Salada	229	27°16'31"	97°42'20"	0.2 mile ESE of Williamson's Boat Dock
	Upper Laguna Madre	230	27°36'08"	97°17'35"	SW shore of Pita Island

(Cont'd).

Bay system	Bay	Station number	Latitude	Longitude	Station identification
Laguna Madre	Upper Laguna Madre	231	27°34'20"	97°15'36"	2.4 miles W of Bob Hall Pier
	Upper Laguna Madre	232	27°34'30"	97°15'55"	2.2 miles SE of Pita Island
	Upper Laguna Madre	233	27°35'03"	97°18'15"	1.5 miles SW of Pita Island
	Upper Laguna Madre	234	27°34'02"	97°16'40"	2.3 miles SSE of Pita Island
	Upper Laguna Madre	235	27°35'58"	97°16'15"	3.1 miles NNE of North Bird Island
	Upper Laguna Madre	236	27°34'24"	97°19'10"	2.5 miles SW of Pita Island
	Upper Laguna Madre	237	27°33'25"	97°16'38"	2.3 miles NNE of North Bird Island
	Upper Laguna Madre	238	27°31'55"	97°20'10"	2.8 miles WNW of North Bird Island
	Upper Laguna Madre	239	27°30'30"	97°18'00"	0.8 mile SW of North Bird Island
	Upper Laguna Madre	240	27°31'00"	97°20'35"	3.2 miles W of North Bird Island
	Upper Laguna Madre	241	27°29'50"	97°20'48"	2.5 miles W of South Bird Island
	Upper Laguna Madre	242	27°29'00"	97°18'25"	0.7 mile S of South Bird Island
	Upper Laguna Madre	243	27°28'10"	97°21'28"	3.3 miles WSW of South Bird Island
	Upper Laguna Madre	244	27°26'42"	97°20'40"	3.7 miles SW of South Bird Island
	Upper Laguna Madre	245	27°27'57"	97°21'48"	1.6 miles WNW of ICWW Marker 139
	Upper Laguna Madre	246	27°06'00"	97°19'50"	1.9 miles S of ICWW Marker 127
	Upper Laguna Madre	247	27°25'35"	97°20'41"	0.9 mile SSW of ICWW Marker 139
	Upper Laguna Madre	248	27°25'10"	97°19'49"	3.0 miles S of ICWW Marker 127
	Upper Laguna Madre	249	27°25'50"	97°22'06"	1.8 miles WSW of ICWW Marker 139
	Upper Laguna Madre	250	27°23'48"	97°20'27"	1.5 miles SE of ICWW Marker 151
	Upper Laguna Madre	251	27°23'32"	97°21'45"	0.8 mile NE of ICWW Flasher 169
	Upper Laguna Madre	252	27°22'56"	97°21'04"	1.3 miles E of ICWW Flasher 169
	Upper Laguna Madre	253	27°22'56"	97°21'04"	1.3 miles E of ICWW Marker 181
	Upper Laguna Madre	254	27°20'31"	97°24'00"	0.7 mile WNW of ICWW Marker 193
	Upper Laguna Madre	255	27°18'40"	97°23'51"	0.2 mile SE of ICWW Flasher 207
	Upper Laguna Madre	256	27°12'20"	97°25'25"	0.6 mile S of ICWW Marker 31(S)
	Upper Laguna Madre	257	27°10'39"	97°25'45"	0.7 mile NNE of ICWW Marker 55(S)
	Upper Laguna Madre	258	27°09'56"	97°25'54"	0.1 mile SE of ICWW Marker 55(S)
	Upper Laguna Madre	259	27°08'30"	97°26'35"	0.1 mile E of ICWW Marker 67(S)
	Raffin	260	27°18'27"	97°27'49"	3.7 miles WNW of ICWW Marker 217
	Raffin	261	27°15'50"	97°26'30"	1.0 mile W of Pt. Penascal

(Cont'd).

Bay system	Bay	Station number	Latitude	Longitude	Station identification
Laguna Madre	Baffin	262	27°17'37"	97°29'13"	1.8 miles NE of East Kleberg Point
	Baffin	263	27°14'25"	97°30'15"	2.4 miles S of East Kleberg Point
	Alazan	264	27°18'45"	97°29'48"	3.3 miles ENE of Starvation Point
	Alazan	265	27°19'40"	97°30'22"	3.5 miles NE of Starvation Point
	Alazan	266	27°18'20"	97°31'04"	2.2 miles NNE of East Kleberg Point
	Alazan	267	27°19'53"	97°32'43"	2.8 miles N of Starvation Point
	Baffin	268	27°13'43"	97°32'41"	4.0 miles S of Starvation Point
	Alazan	269	27°17'30"	97°36'03"	0.9 miles NE of Kleberg Point
	Baffin	270	27°15'47"	97°38'27"	0.8 mile SSE of Pie de Gallo
	Laguna Salada	271	27°16'20"	97°40'00"	1.0 mile S of Riviera Beach
	Laguna Salada	272	27°15'55"	97°42'45"	0.8 mile SSW of Williamson's Boat Dock
	Laguna Salada	273	27°15'45"	97°43'30"	1.5 miles SW of Williamson's Boat Dock
	Laguna Salada	274	27°16'55"	97°41'18"	1.5 miles WSW of Riviera Beach
	Baffin	275	27°17'20"	97°39'35"	E of Riviera Beach on Baffin Bay shore
	Gayo del Grullo	276	27°21'15"	97°45'13"	1.3 mile N of Loyola Beach
	Cayo del Grullo	277	27°21'56"	97°40'34"	2.5 miles NNE of Loyola Beach
	Cayo del Grullo	278	27°20'35"	97°40'00"	1.7 miles ENE of Loyola Beach
	Cayo del Grullo	279	27°19'43"	97°39'30"	1.5 miles ENE of Kleberg County Kauffer Park
	Cayo del Grullo	280	27°18'09"	97°38'00"	2.0 miles NE of Riviera Beach
	Upper Laguna Madre	281	27°37'52"	97°13'12"	1.3 mile E of ICWW Bridge on Kennedy Causeway (Packery Channel)
	Upper Laguna Madre	282	27°35'16"	97°15'50"	1.8 mile SE of Pita Island
	Upper Laguna Madre	283	27°31'11"	97°17'30"	On W shore of N Bird Island
	Upper Laguna Madre	284	27°29'40"	97°17'45"	0.5 mile E of S Bird Island
	Upper Laguna Madre	285	27°24'20"	97°22'10"	1.2 mile SWS of ICWW Marker 155
	Upper Laguna Madre	286	27°23'07"	97°22'55"	0.8 mile W of ICWW Flasher 169
	Upper Laguna Madre	287	27°21'47"	97°23'30"	0.7 mile W of ICWW Marker 181
	Raffin	288	27°19'04"	97°25'12"	1.2 mile WNW of ICWW Flasher 207

(Cont'd).

Bay system	Bay	Station number	Latitude	Longitude	Station identification
Laguna Madre	Cayo del Grullo	289	27°19'32"	97°38'32"	1.7 mile N of Sandy Hook
	Cayo del Grullo	290	27°18'35"	97°40'09"	1.0 mile WNW of Neubauer Point
	Baffin	291	27°14'30"	97°35'00"	2.0 mile SSE of Kleberg Point
	Upper Laguna Madre	292	27°20'50"	97°23'00"	1.5 mile NE of Point of Rocks
	Upper Laguna Madre	293	27°08'40"	97°26'10"	0.2 mile E of old Marker 185
	Alazan	294	27°23'20"	97°29'10"	0.5 mile SSW of Alazan Mott
	Laguna Salada	295	27°16'10"	97°43'47"	0.8 mile SW of Williamson's Boat Dock
	Alazan	296	27°19'00"	97°34'25"	Inside mouth of Cayo del Infernillo

(Cont'd).

Bay system	Bay	Station number	Latitude	Longitude	Station identification
Laguna Madre	Lower Laguna Madre	201	26°48'00"	97°28'20"	Shore W of ICWW Marker 223A
	Lower Laguna Madre	202	26°45'15"	97°28'10"	Shore W of ICWW Marker 237
	Lower Laguna Madre	203	26°44'00"	97°28'10"	Shore W of ICWW Marker 241
	Lower Laguna Madre	204	26°42'30"	97°28'00"	Shore W of ICWW Marker 245
	Lower Laguna Madre	205	26°40'40"	97°27'30"	Shore W of ICWW Marker 253
	Lower Laguna Madre	206	26°39'40"	97°27'15"	Shore W of ICWW Marker 259
	Lower Laguna Madre	207	26°39'10"	97°27'10"	Shore W of ICWW Marker 261A
	Lower Laguna Madre	208	26°38'15"	97°26'45"	Shore W of ICWW Marker 265
	Lower Laguna Madre	209	26°36'55"	97°26'50"	Shore W of ICWW Marker 269
	Lower Laguna Madre	210	26°35'50"	97°20'15"	Shore W of ICWW Marker 273A
	Lower Laguna Madre	211	26°33'25"	97°22'45"	N side of Dump at Mansfield Channel Marker 37
	Lower Laguna Madre	212	26°33'30"	97°22'25"	S side of Dump between Mansfield Channel Markers 34 and 36
	Lower Laguna Madre	213	26°31'40"	97°25'11"	Shore W of ICWW Marker 289
	Lower Laguna Madre	214	26°30'15"	97°24'20"	Shore W of ICWW Marker 293A
	Lower Laguna Madre	215	26°31'48"	97°24'20"	W side of Dump at ICWW Marker 289
	Lower Laguna Madre	216	26°30'50"	97°23'50"	W side of Dump at ICWW Marker 293
	Lower Laguna Madre	217	26°29'50"	97°23'30"	W side of Dump by ICWW Marker 297A
	Lower Laguna Madre	218	26°29'25"	97°23'15"	W side of Dump at ICWW Marker 299
	Lower Laguna Madre	219	26°23'40"	97°19'35"	NW tip of Green Island
	Lower Laguna Madre	220	26°22'50"	97°20'05"	E side of Dump at ICWW Marker 220
	Arroyo Colorado	221	26°21'30"	97°20'25"	Mouth of Slough 0.5 mile from mouth of Arroyo Colorado
	Arroyo Colorado	222	26°21'15"	97°21'50"	Mouth of Parker Lake
	Lower Laguna Madre	223	26°17'50"	97°18'00"	Three Islands W of ICWW Marker 33
	Lower Laguna Madre	224	26°17'25"	97°17'30"	W side of Dump E of IWCC Marker 37
	Lower Laguna Madre	225	26°18'05"	97°17'35"	Dump just E of ICWW Marker 33
	Lower Laguna Madre	226	26°18'20"	97°17'45"	Dump just E of ICWW Marker 31

(Cont'd).

Bay system	Bay	Station number	Latitude	Longitude	Station identification
Laguna Madre	Lower Laguna Madre	227	26°17'50"	97°17'20"	Joe Breuer's cabin
	Lower Laguna Madre	228	26°07'50"	97°17'15"	NW end of Loma de la Grulla
	Lower Laguna Madre	229	26°07'10"	97°17'00"	S end of Loma de la Grulla
	Lower Laguna Madre	230	26°05'35"	97°16'50"	0.5 mile SE of Laguna Vista water tower
	Lower Laguna Madre	231	26°09'20"	97°10'50"	1.5 miles N of Padre Island water tower at indentation in bar
	Lower Laguna Madre	232	26°08'50"	97°10'40"	0.25 mile N of Padre Island water tower
	Lower Laguna Madre	233	26°03'10"	97°11'50"	S end of Long Island at Port Isabel
	Lower Laguna Madre	234	26°03'20"	97°10'50"	Shore S of Brownsville Ship Channel Marker 16
	South Bay	235	26°01'50"	97°10'20"	E shore of South Bay, E of shipwreck
	Arroyo Colorado	236	26°21'00"	97°26'00"	Near ditch inlet in Old Arroyo channel
	Lower Laguna Madre	237	26°47'10"	97°28'20"	Shore W of ICWW Marker 229
	Lower Laguna Madre	238	26°46'10"	97°28'15"	Shore W of ICWW Marker 234
	Lower Laguna Madre	239	26°41'40"	97°27'50"	Shore W of ICWW Marker 249A
	Lower Laguna Madre	241	26°34'48"	97°25'50"	Shore W of ICWW Marker 277A
	Lower Laguna Madre	242	26°32'50"	97°25'05"	Shore W of ICWW Marker 285
	Lower Laguna Madre	243	26°35'50"	97°21'45"	Dump S of Mansfield Channel Marker 32
	Lower Laguna Madre	244	26°33'20"	97°24'08	E side of dump on S side of Mansfield Channel Marker 24
	Lower Laguna Madre	245	26°33'50"	97°24'05"	Dump N of Mansfield Channel Marker 26
	Lower Laguna Madre	246	26°24'50"	97°20'50"	Dump W of Marker 315A
	Lower Laguna Madre	247	26°22'00"	97°19'20"	Dump off Mouth of Arroyo Colorado
	Lower Laguna Madre	248	26°20'35"	97°19'10"	Dump W of ICWW Marker 9
	Lower Laguna Madre	249	26°19'20"	97°18'25"	Dump W of ICWW Marker 19
	Lower Laguna Madre	250	26°18'15"	97°18'00"	Dump W of ICWW Marker 31
	Lower Laguna Madre	251	26°17'35"	97°17'20"	E side of Three Islands

(Cont'd).

Bay system	Bay	Station number	Latitude	Longitude	Station identification
Laguna Madre	Lower Laguna Madre	252	26°17'00"	97°17'05"	E side of Island, E of ICWW Marker 41
	Lower Laguna Madre	253	26°15'45"	97°17'00"	Dump W of ICWW Marker 51
	Lower Laguna Madre	254	26°13'10"	97°16'05"	Dump W of ICWW Marker 69
	Lower Laguna Madre	255	26°12'10"	97°15'45"	Dump just NW of ICWW Marker 79
	Lower Laguna Madre	256	26°06'40"	97°13'00"	Dump W of ICWW Marker 127
	Lower Laguna Madre	257	26°03'45"	97°10'10"	Shore on S side of Brownsville Ship Channel between Markers 5 and 9
	South Bay	258	26°01'12"	97°11'13"	S shore at projection SSW of ship wreck
	Lower Laguna Madre	259	26°03'45"	97°11'50"	N end of Long Island at Port Isabel
	Lower Laguna Madre	260	26°23'30"	97°20'10"	East of ICWW Marker 321 on east side of land strip
	Lower Laguna Madre	261	26°19'50"	97°18'50"	Dump west of ICWW Marker 15
	Lower Laguna Madre	262	26°09'20"	97°17'45"	Moranco Blanco
	Lower Laguna Madre	263	26°11'00"	97°17'50"	Mainland shore west of ICWW Marker 89
	Lower Laguna Madre	264	26°12'15"	97°11'15"	2.5 miles N of South Padre Island water tower
	Lower Laguna Madre	265	26°12'50"	97°11'30"	3.5 miles N of South Padre Island water tower
	Lower Laguna Madre	266	26°28'35"	97°22'45"	Dump west of ICWW Marker 301A
	Lower Laguna Madre	267	26°27'50"	97°22'15"	Dump west of ICWW Marker 305
	Lower Laguna Madre	268	26°27'00"	97°21'50"	Dump west of ICWW Marker 307A
	Lower Laguna Madre	269	26°26'12"	97°21'40"	Dump west of ICWW Marker 311
	Lower Laguna Madre	270	26°22'05"	97°19'50"	Dump west of ICWW Marker 325A
	Lower Laguna Madre	272	26°21'12"	97°19'25"	Dump west of ICWW Marker 2
	Lower Laguna Madre	273	26°20'45"	97°19'15"	Dump west of ICWW Marker 7
	Lower Laguna Madre	274	26°20'15"	97°18'58"	Dump west of ICWW Marker 11
	Lower Laguna Madre	275	26°19'28"	97°18'35"	Dump west of ICWW Marker 17
	Lower Laguna Madre	276	26°19'00"	97°18'30"	Dump west of ICWW Marker 21
	Lower Laguna Madre	277	26°18'35"	97°18'15"	Dump west of ICWW Marker 25
	Lower Laguna Madre	278	26°16'48"	97°17'25"	Dump southwest of ICWW Marker 41
	Lower Laguna Madre	279	26°14'50"	97°16'48"	Dump west of ICWW Marker 57

(Cont'd).

Bay system	Bay	Station number	Latitude	Longitude	Station identification
Laguna Madre	Lower Laguna Madre	280	26°13'48"	97°16'30"	Dump west of ICWV Marker 63
	Lower Laguna Madre	281	26°04'50"	97°14'30"	1.0 mile E of Laguna Heights pier
	Lower Laguna Madre	282	26°05'20"	97°10'00"	Just S of new causeway
	Lower Laguna Madre	283	26°34'05"	97°25'40"	End of N dirt road Port Mansfield
	Lower Laguna Madre	284	26°48'05"	97°28'00"	Dump W of ICWV Marker 223A
	Lower Laguna Madre	285	26°46'50"	97°27'45"	Dump W of ICWV Marker 229A
	Lower Laguna Madre	286	26°04'10"	97°09'50"	0.25 mile E of South Padre Island Coast Guard Station
	Lower Laguna Madre	287	26°16'22"	97°18'44"	Townsite Point
	Lower Laguna Madre	288	26°13'00"	97°18'45"	North of Stover Point
	Lower Laguna Madre	289	26°15'35"	97°17'35"	East end of El Realito Peninsula
	Lower Laguna Madre	290	26°19'55"	97°20'02"	South end of Horse Island
	Lower Laguna Madre	291	26°08'20"	97°17'30"	North end of Holly Beach

(S) denotes channel markers south of Riviera Channel - Baffin Bay. Marker numbers recycle back to "1" at this point.

Appendix B - Trawl Station Locations

Table 1. Trawl station locations.

Bay system	Bay	Station number	Latitude	Longitude
Galveston	Clear Lake	7	29 33' 30"	95 02' 30"
	Dickinson	8	29 28' 30"	94 56' 30"
	Trinity	9	29 39' 30"	94 42' 30"
	Galveston	10	29 34' 30"	94 58' 30"
	Galveston	11	29 37' 30"	94 56' 30"
	Trinity	12	29 37' 30"	94 50' 30"
	Trinity	13	29 43' 30"	94 46' 30"
	Galveston	14	29 27' 30"	94 53' 30"
	Galveston	15	29 26' 30"	94 48' 30"
	East	16	29 30' 30"	94 41' 30"
	East	17	29 32' 30"	94 34' 30"
	West	18	29 15' 30"	94 57' 30"
	West	19	29 11' 30"	94 01' 30"
	West	20	29 07' 30"	94 08' 30"
Chocolate	21	29 10' 30"	95 08' 30"	
Matagorda	Carancahua	7	28 40' 30"	96 24' 30"
	Turtle	8	28 39' 30"	96 17' 30"
	Tres Palacios	9	28 42' 30"	96 12' 30"
	Lavaca	10	28 42' 30"	96 35' 30"
	Lavaca	11	28 39' 30"	96 36' 30"
	Lavaca	12	28 37' 30"	96 32' 30"
	Matagorda	13	28 33' 30"	96 28' 30"
	Matagorda	14	28 36' 30"	96 21' 30"
Matagorda	15	28 35' 30"	96 15' 30"	
San Antonio	Hynes	7	28 23' 30"	96 49' 30"
	San Antonio	8	28 23' 30"	96 44' 30"
	Hynes	9	28 23' 30"	96 47' 30"
	San Antonio	10	28 22' 30"	96 44' 30"
	San Antonio	11	28 19' 30"	96 45' 30"
	San Antonio	12	28 20' 30"	96 43' 30"
	San Antonio	13	28 14' 30"	96 45' 30"
	San Antonio	14	28 17' 30"	96 41' 30"
	San Antonio	15	28 13' 30"	96 43' 30"
Espiritu Santo	16	28 16' 30"	96 37' 30"	
Aransas	Copano	7	28 04' 30"	97 12' 30"
	St. Charles	8	28 11' 30"	96 57' 30"
	Aransas	9	28 06' 30"	96 56' 30"
	Copano	10	28 07' 30"	97 08' 30"
	Copano	11	28 07' 30"	97 02' 30"
	Aransas	12	28 05' 30"	97 01' 30"
	Aransas	13	27 58' 30"	97 00' 30"
	Aransas	14	28 01' 30"	97 00' 30"
	Aransas	15	27 56' 30"	97 03' 30"
	Mesquite	16	28 08' 30"	96 51' 30"
Copano	17	28 04' 30"	97 08' 30"	

Appendix C - Hydrological Data Summary

Table 1. Monthly mean surface water temperature (C) at sampled bag seine stations in each Texas bay system during September 1979-December 1981.

Month Year	Galveston	Matagorda	San Antonio	Aransas	Corpus Christi	Upper Laguna Madre	Lower Laguna Madre
Sep 1979	25.0	27.1	28.1	27.4	28.0	28.6	28.4
Oct	25.0	24.3	26.8	26.6	26.6	23.2	25.6
Nov	22.4	18.8	15.8	17.2	16.2	20.7	23.6
Dec	12.0	11.9	13.9	11.6	16.8	4.4	14.2
Jan 1980	14.5	15.2	16.3	17.3	16.2	18.4	20.2
Feb	16.1	13.4	16.5	15.2	14.6	15.8	20.2
Mar	18.1	16.6	18.8	20.6	18.2	19.0	19.5
Apr	21.9	20.4	22.9	21.5	23.1	23.8	20.7
May	28.6	27.3	24.9	26.2	27.4	29.9	28.9
Jun	30.2	28.9	28.6	29.4	30.2	31.8	30.7
Jul	32.1	29.7	29.5	31.5	30.1	32.2	29.8
Aug	29.2	30.2	30.6	31.2	30.8	32.2	31.2
Sep 1980	31.2	29.7	29.0	29.9	30.0	31.4	31.9
Oct	21.6	23.2	24.1	21.4	23.9	24.6	20.8
Nov	17.4	19.2	17.6	18.8	18.2	19.2	18.8
Dec	15.3	16.6	17.9	18.4	18.1	17.0	17.4
Jan 1981	13.4	14.8	14.0	15.4	12.7	16.2	17.2
Feb	15.7	14.6	14.2	17.9	16.7	15.9	19.9
Mar	18.0	16.4	16.4	20.9	17.1	20.3	19.9
Apr	25.0	21.7	26.2	26.8	25.2	26.6	24.6
May	25.8	24.6	26.2	27.3	25.6	26.7	27.6
Jun	30.0	29.0	30.2	28.6	29.5	30.8	28.9
Jul	32.0	29.0	31.8	30.2	29.1	31.9	28.8
Aug	31.6	31.1	27.3	30.6	30.4	32.8	29.7
Sep 1981	28.4	27.9	29.6	27.3	25.9	30.5	29.6
Oct	23.6	21.1	23.6	24.0	26.4	26.7	26.6
Nov	21.4	20.9	23.1	22.0	21.2	23.0	21.0
Dec	16.0	16.7	18.6	19.7	18.8	20.0	24.0

Table 2. Monthly mean surface salinity (o/oo) at sampled bag seine stations in each Texas bay system during September 1979-December 1981.

Month Year	Galveston	Matagorda	San Antonio	Aransas	Corpus Christi		Upper Laguna Madre		Lower Laguna Madre	
					Christi	Laguna Madre	Laguna Madre	Laguna Madre		
Sep 1979	12.5	4.4	12.8	6.1	20.0	27.3	24.6			
Oct	9.2	7.0	16.1	9.1	24.4	27.9	24.0			
Nov	17.3	17.2	24.6	10.4	26.3	29.8	30.3			
Dec	19.1	16.2	17.4	15.8	26.6	30.1	27.3			
Jan 1980	14.8	16.2	19.1	16.5	27.2	27.9	22.6			
Feb	14.1	12.9	17.9	11.6	25.5	29.4	28.4			
Mar	11.8	17.7	15.0	12.2	28.0	32.2	29.8			
Apr	14.1	19.8	25.6	15.9	27.9	33.2	30.0			
May	19.4	17.0	21.5	21.5	31.0	35.3	28.5			
Jun	20.7	11.8	18.1	21.5	29.3	37.7	37.3			
Jul	21.8	20.8	22.5	25.2	40.2	44.2	34.1			
Aug	28.8	25.8	22.3	26.2	19.0	26.1	12.6			
Sep 1980	26.8	23.4	24.5	19.1	24.8	23.0	31.0			
Oct	26.9	27.3	24.4	19.5	27.5	21.6	31.2			
Nov	23.2	24.5	20.7	22.3	29.8	25.9	31.2			
Dec	25.7	25.4	19.7	21.6	30.2	24.4	29.6			
Jan 1981	21.4	30.4	25.7	18.5	29.4	29.1	26.4			
Feb	23.2	26.7	21.6	19.3	27.0	27.8	29.0			
Mar	23.8	26.5	25.9	22.0	30.4	29.3	25.6			
Apr	28.1	28.0	21.2	21.5	32.3	31.1	30.9			
May	27.2	17.4	22.8	12.5	24.8	27.5	24.3			
Jun	6.6	6.2	7.0	6.7	22.2	24.0	30.0			
Jul	19.8	9.3	6.9	5.6	18.1	21.8	19.6			
Aug	9.2	20.4	9.0	9.3	23.9	19.8	36.7			
Sep 1981	12.2	11.3	6.4	6.6	23.3	20.3	29.4			
Oct	12.2	16.7	11.8	10.9	25.9	26.1	33.9			
Nov	11.4	10.4	4.0	5.8	15.9	21.6	25.4			
Dec	15.0	20.5	5.6	5.2	25.3	23.6	31.7			

Table 3. Monthly mean bottom water temperature (C) at sampled trawl stations in each Texas bay system during September 1979-December 1981 (Blank = no measurement taken).

Month Year	Galveston	Matagorda	San Antonio	Aransas
Sep 1979	25.5	25.2	28.0	26.8
Oct	23.5	25.7	26.4	21.8
Nov	14.4	20.6	20.6	20.2
Dec	11.6	10.4	10.5	11.2
Jan 1980				
Feb	11.7	14.7	12.2	12.4
Mar	16.2	17.9	16.0	19.2
Apr	19.3	22.4	24.6	21.0
May	24.7	25.6	26.4	26.7
Jun	28.3	29.9	29.5	28.6
Jul	29.6	31.0	31.2	30.1
Aug	29.4	30.4	29.7	29.2
Sep 1980	29.1	27.9	30.5	29.7
Oct	20.2	23.1	19.7	23.7
Nov	13.8	10.4	18.6	16.2
Dec	14.1	16.6	17.3	15.2
Jan 1981				
Feb	11.2	14.6	12.4	15.2
Mar	15.8	17.6	16.2	16.3
Apr	24.5	24.2	25.1	24.5
May	23.9	25.9	25.6	25.0
Jun	29.0	28.9	29.1	28.3
Jul	29.8	30.0	31.0	29.9
Aug	30.1	30.8	30.0	30.2
Sep 1981	27.6	29.8	28.4	29.0
Oct	23.6	22.3	23.0	25.8
Nov	20.0	29.3	19.8	19.9
Dec	16.0	16.9	17.4	16.2

Table 4. Monthly mean bottom water temperature (°C) at sampled trawl stations in each Texas bay system during September 1979-December 1981 (Blank = no measurement taken).

Month Year	Galveston	Matagorda	San Antonio	Aransas
Sep 1979	8.3	4.0	6.4	8.1
Oct	10.3	7.9	6.9	8.5
Nov	11.3	13.7	13.4	11.0
Dec	14.5	20.5	15.3	13.2
Jan 1980				
Feb	9.9	17.5	17.4	13.2
Mar	14.6	19.0	15.4	15.6
Apr	12.6	22.4	18.9	18.7
May	16.6	13.6	18.2	19.2
Jun	12.5	14.4	12.3	21.2
Jul	18.9	17.9	15.7	25.8
Aug	22.4	20.9	20.1	25.1
Sep 1980	21.5	24.2	17.4	22.6
Oct	20.0	22.6	15.7	19.0
Nov	24.1	26.1	17.4	18.3
Dec	22.0	26.1	18.0	19.7
Jan 1981				
Feb	22.7	27.6	21.4	19.1
Mar	23.0	28.2	19.7	18.9
Apr	28.1	29.8	20.4	23.2
May	24.1	19.0	10.7	17.0
Jun	13.5	5.9	4.2	12.3
Jul	8.7	5.1	0.4	5.4
Aug	17.3	9.9	3.3	10.8
Sep 1981	15.2	10.6	1.2	9.7
Oct	15.5	15.9	4.2	11.2
Nov	15.3	16.9	1.0	6.4
Dec	14.6	16.6	3.7	8.0

Appendix D - September-December 1981 Data Summary

Table 1. Mean abundance (No./ha) and mean width (mm) of blue crabs caught with bag seines in Texas bay systems (Blank = no measurement taken).

Month and year (number of samples)	Galveston		Matagorda		San Antonio		Aransas		Corpus Christi		Upper Laguna Madre		Lower Laguna Madre		Coastwide ^a	
	No./ha	Width	No./ha	Width	No./ha	Width	No./ha	Width	No./ha	Width	No./ha	Width	No./ha	Width	No./ha	Width
Sep 1981 (6)	61.11	78	13.89	103	22.22	92	60.00	53	13.79	93	25.00	128	17.65	87	34.02	89
Oct (10)	20.00	128	18.33	49	53.33	78	139.58	34	36.73	60	2.50	30	115.00	34	53.58	65
Nov (10)	20.69	100	31.67	76	13.33	97	232.00	39	27.08	27	5.00	91	31.58	22	52.11	68
Dec (10)	13.33	38	8.33	43	66.67	44	89.37	36	97.92	34	22.50	33	367.86	24	87.92	36

^aWeighted by amount of shoreline in each bay system.

Table 2. Mean catch rate (No./tow) and mean width (mm) of blue crabs caught with trawls in Texas bay systems. (Blank = no samples or measurements taken).

Month Year	Galveston		Matagorda		San Antonio		Aransas		All bays combined ^a						
	Total tows	No./Tow	Total tows	No./Tow	Total tows	No./Tow	Total tows	No./Tow	Total tows	No./Tow	Width				
Sep 1981	30	2.0	103	1.2	9	1.2	118	7.7	86	22	2.3	59	81	2.7	100
Oct	30	2.1	90	0.9	9	0.9	83	5.4	84	22	1.6	57	81	2.2	84
Nov	30	1.5	114	0.3	9	0.3	49	4.0	80	22	3.9	42	81	1.8	84
Dec	30	0.6	124	0.4	9	0.4	70	1.9	53	22	7.6	40	81	1.5	90

^a Weighted by amount of area in each bay system.

PWD Report 3000-167
August 1983