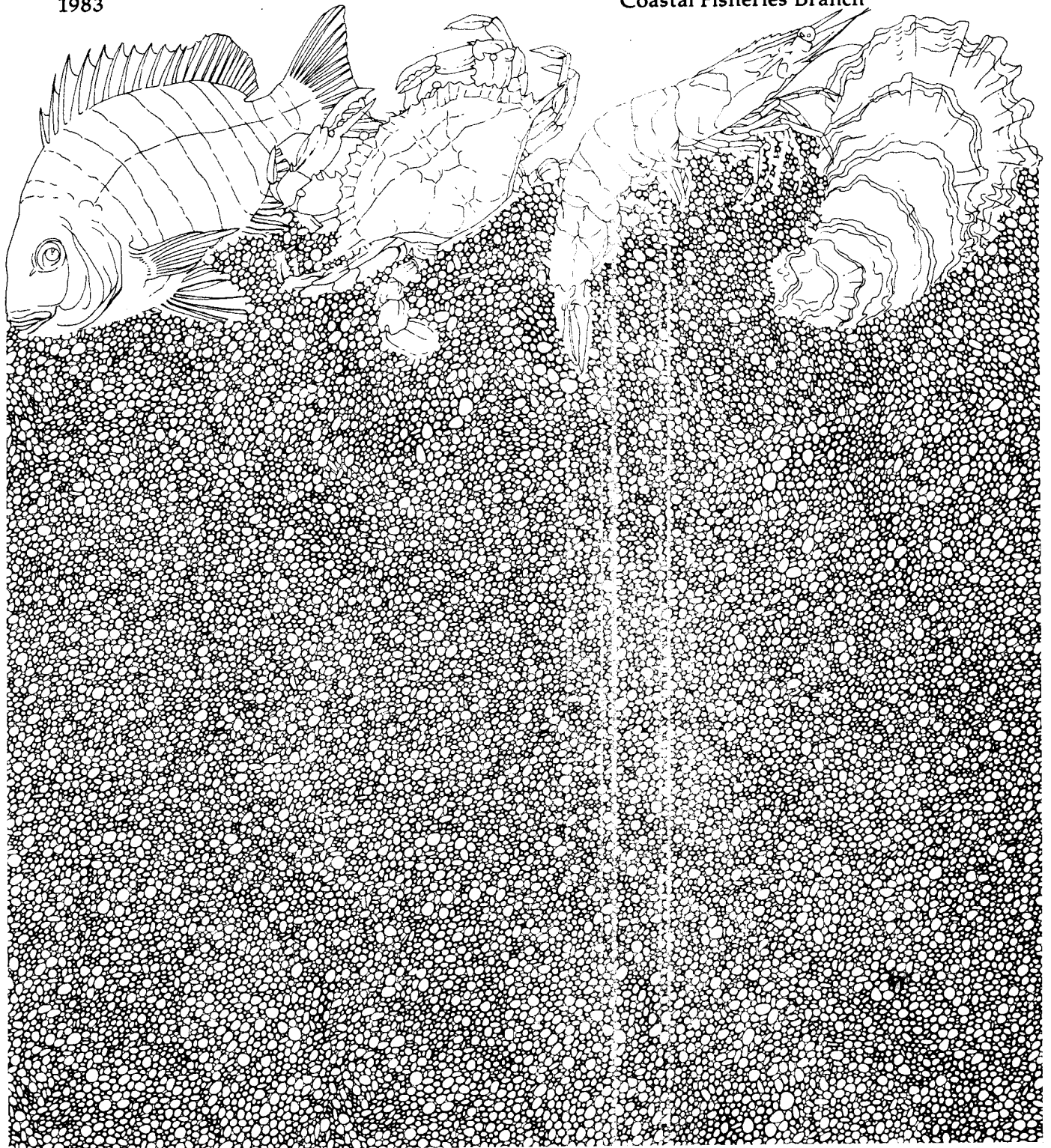


# MONITORING OF COASTAL FINFISH RESOURCES FOR SPORT FISH MANAGEMENT, OCTOBER 1981-SEPTEMBER 1982

by H. E. Hegen

Management Data Series Number 49  
1983

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

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## ABSTRACT

Trends in relative abundance and size of six economically important saltwater fishes -- red drum (Sciaenops ocellatus), spotted seatrout (Cynoscion nebulosus), black drum (Pogonias cromis), sheepshead (Archosargus probatocephalus), southern flounder (Paralichthys lethostigma) and Atlantic croaker (Micropogonias undulatus) -- were monitored with gill nets and bag seines in eight Texas bay systems. Monofilament gill nets were utilized intensively during fall 1981 and spring 1982 and monthly during winter. Bag seines were sampled monthly from October 1981 through September 1982.

The coastwide catch rates of red drum generally declined from 1975 through spring 1979; peak catches in fall 1979 and spring 1980 were followed by declines through spring 1982. The coastwide catch rates of spotted seatrout, black drum and Atlantic croaker generally declined from fall 1975 through 1979 and increased through 1982. The annual trends were similar for both fall and spring. The coastwide mean catch rates of southern flounder ( $<0.1$  fish/h) and sheepshead ( $\sim 0.2$  fish/h) remained about the same throughout the survey period.

Coastwide mean total lengths for each species during both seasons combined were within a narrow size range: red drum (373-466 mm), spotted seatrout (424-496 mm), black drum (346-393 mm), sheepshead (292-350 mm), southern flounder (321-365 mm) and Atlantic croaker (270-320 mm).

Mean total lengths for red drum, spotted seatrout and sheepshead were typically larger during the spring than fall, whereas the mean lengths of black drum, southern flounder and Atlantic croaker were larger in the fall than in the spring.

The catch rates of each species varied among mesh size during both seasons. Higher catches of red drum, spotted seatrout and Atlantic croaker occurred in the 7.6- and 10.2-cm stretched mesh, while black drum and southern flounder had higher catch rates in the 10.2- and 12.7-cm meshes. Sheepshead had generally higher catch rates in the 12.7- and 15.2-cm meshes.

No trends in monthly catch rates (December 1981-March 1982) of red drum, spotted seatrout, black drum, sheepshead, southern flounder and Atlantic croaker were apparent because of the variation of catches among months and mesh sizes. Monthly catch rates were generally lower than seasonal mean catch rates within each bay system.

Mean total lengths varied among months and mesh sizes, however, monthly mean sizes of red drum, spotted seatrout and sheepshead were similar to the larger fish encountered during spring and the mean sizes of black drum, southern flounder and Atlantic croaker were similar to the larger fish encountered during fall.

The bag seine catches of red drum, southern flounder and Atlantic croaker generally increased coastwide and within bay systems from 1977 through 1982. The 1981-82 catch rates were the highest catches recorded during the past five years in most bay systems. The coastwide catch

rates of spotted seatrout and black drum declined from 1977 through 1982 although this trend varied among bay systems. Sheepshead had the lowest catch rates of all species and no annual trends were apparent.

Monthly catch rate patterns revealed specific periods during which red drum (October-March), spotted seatrout (July-October), black drum (June-September), sheepshead (May-July), southern flounder (February-May) and Atlantic croaker (July-December) were most available. During the period of highest availability, the mean total lengths of red drum, black drum, southern flounder and Atlantic croaker increased monthly.

## INTRODUCTION

Finfish in Texas bays support both commercially and recreationally important industries. Commercial fishermen in Texas bay systems (Galveston, East Matagorda, Matagorda, San Antonio, Aransas, Corpus Christi Bays and Laguna Madre) reported landing 1,038,580 kg of fish during January-December 1981 (Hamilton 1982). Recreational boat, wade/bank and lighted pier fishermen harvested an estimated 1,900,000 kg of fish from these same bay systems during May 1981-May 1982 (McEachron and Green 1983). Six species -- red drum (Sciaenops ocellatus), spotted seatrout (Cynoscion nebulosus), black drum (Pogonias cromis), sheepshead (Archosargus probatocephalus), southern flounder (Paralichthys lethostigma) and Atlantic croaker (Micropogonias undulatus)--accounted for 94% of the total weight reported by commercial fishermen and 88% of the estimated total weight caught by recreational fishermen.

Estimates of the harvest and availability of the finfish resource are necessary in order to evaluate and implement management decisions effectively. Texas Parks and Wildlife Department (TPWD) has collected commercial harvest statistics since 1936 (Heffernan and Kemp 1980) and marine recreational harvest and pressure statistics since 1974 (Heffernan et al. 1976). Fish availability and gear selectivity studies have been conducted periodically along the Texas coast since the late 1800's (Stevenson 1893).

In November 1975 the Coastal Fisheries Branch of TPWD initiated a standardized fishery-independent program for gathering comparable information on the availability of finfish in Texas bay systems. Analyses of gear type and sample size requirements demonstrated that monofilament gill nets used intensively during spring and fall produced a statistically reliable and cost efficient method for obtaining catch rate and mean total length data for adult finfish (Hegen et al. 1983). Bag seine sampling was initiated in 1977 to obtain the same data for juvenile fishes.

This report is the summarization of data collected during September 1981-September 1982. Annual, seasonal and monthly catch rate and mean total length data for each gear are summarized with previous years' data. Any differences in this report compared to previous reports is due to updating the data base and the most recent report should be considered the most accurate.

## AREA DESCRIPTION

The Texas Gulf coastline, extending from Sabine Pass (Texas/Louisiana border) to the mouth of the Rio Grande (Texas/Mexico border) is approximately 600 km long (Diener 1975). Eight distinct bay systems (excluding Sabine Lake), separated from the Gulf of Mexico by a series of barrier islands, constitute the majority of Texas' estuarine environment and provide an additional 3049 km of shoreline (Matlock and Ferguson 1982). These bay systems include Galveston, East Matagorda, Matagorda, San Antonio, Aransas, Corpus Christi and the Laguna Madre (Figure 1). The Laguna Madre is comprised of the upper and lower areas due to a land barrier located approximately in the middle of the system.

A comprehensive description of physical and biological characteristics of the Texas coastal zone is found in Diener (1975). Bay area descriptions from Matlock and Weaver (1979) are presented in Appendix A.

## MATERIAL AND METHODS

### Gill Nets

Gill nets were 183 m long and 1.2 m deep with separate 46-m sections of 7.6-, 10.2-, 12.7- and 15.2-cm stretched monofilament meshes. Thread sizes were #12 (Nylon Net Company) for the 7.6- and 10.2-cm meshes, #6 for the 12.7-cm mesh and #7 for the 15.2-cm mesh. Webbing in each section was hung to both the float and lead lines on a one-half basis. One-half basis indicates that the finished gill net is one half the length of the original stretched webbing before hanging. All four sections were tied together; 7.6-cm tied to 10.2-cm, 10.2-cm tied to 12.7-cm and 12.7-cm tied to 15.2-cm.

Sampling with gill nets was conducted in the Galveston Bay, East Matagorda Bay, Matagorda Bay, San Antonio Bay, Aransas Bay, Corpus Christi Bay, upper Laguna Madre and lower Laguna Madre systems (Figures 2-10). Stations were randomly selected from a list of <100 sample stations compiled for each bay system (Appendix B). Each station on the list was at least 1.6 km of continuous shoreline from any other gill net station.

Forty-five gill nets sets were made in each of two seasonal sampling periods: early fall (13 September-21 November 1981) and late spring (13 April-19 June 1982). Not more than seven or less than three overnight gill net sets were made each week to insure sampling was conducted over a wide range of environmental conditions. No more than 9 stations (20% of total) were duplicated during each season. Seasonal sampling was conducted in all bay systems except East Matagorda Bay.

Monthly sampling consisted of two gill net sets during the first two fullest weeks of each month and two sets during the last two fullest weeks. Each sampling week extended from 1 h before sunset on Sunday through 1 h after sunrise the following Sunday. Monthly sampling was

conducted in East Matagorda Bay system during October 1981-March 1982 and in the remaining bay systems only during December 1981-March 1982.

Each gill net was set perpendicular to shore with the smallest mesh shoreward. Gill nets were set within 1 h before sunset and were retrieved no later than 2 h after the following sunrise. Total fishing time was recorded to the nearest 0.1 h.

Fish were identified to species (Gallaway et al. 1972, Hoese and Moore 1977), enumerated and recorded according to the appropriate mesh size. Total length (to the nearest mm) was obtained for the first 19 individuals of each species from each mesh size during each week in seasonal sampling and during each set in monthly sampling.

Catch rates and mean total lengths were determined for red drum, black drum, spotted seatrout, sheepshead, southern flounder and Atlantic croaker caught in each mesh size and in all meshes combined.

Catch rates (No./h) for each species were calculated by dividing the total number of fish caught by the total hours fished. Values were reported to the nearest 0.1 fish/h; the notation  $<.1$  fish/h indicates that at least one fish was caught but due to the rounding, the value of the derived catch rate was less than the established degree of precision (Cochran 1977). Size (total length to the nearest 1 mm) of each species for each season or month was calculated by adding the individual total lengths and then dividing by the total number of fish measured. Individual fish lengths were actual measurements of total lengths or they were derived from standard length-total length or total length-weight regressions (Harrington et al. 1979) when total lengths were not obtained. Coastwide data were weighted according to the percentage each bay system's shoreline contributed to the coastwide shoreline (Matlock and Ferguson 1982).

Hydrologic variables including salinity, water temperature, turbidity and dissolved oxygen were measured at the time of the set and retrieval of each gill net sample. Seasonal means of these variables are summarized in Appendix D, Tables 1-4.

### Bag Seines

Each bag seine was 18.3 m long and 1.8 m deep with 1.9-cm stretched nylon multifilament mesh in the lateral wings and 1.3-cm stretched nylon multifilament mesh in the central bag.

Bag seine sampling was conducted from October 1981 through September 1982 in all bay systems except East Matagorda (Figures 11-18). Ten different shoreline stations were sampled each month in each bay system. Stations were randomly selected from a list of  $\leq 100$  sample stations compiled for each bay system (Appendix C). Each station on the list was at least 1.6 km of continuous shoreline from any other bag seine station.



Five 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 day.

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

Fish were identified to species (Pearson 1929; Hildebrand and Cable 1930, 1940; Guthertz 1967; Walls 1975; Hoese and Moore 1977) and counted. Total length (nearest mm) was measured from a random sample of no more than 19 individuals of each species. Abundance estimates (No./ha) were calculated in the same manner used for gill net data except total area fished (ha to the nearest 0.01) was used instead of total hours fished. Mean size of each species was calculated in the same manner as for gill nets. Coastwide weighting was also the same as for gill nets.

Hydrologic variables including salinity, water temperature, turbidity and dissolved oxygen were measured at the time of each bag seine sample. Monthly means of these variables are summarized in Appendix D, Tables 5-8.

## RESULTS

### Seasonal Gill Nets

The coastwide mean catch rates of red drum generally declined from 1975 through 1979; peak catches in fall 1979 and spring 1980 were followed by general declines through spring 1982 (Tables 1 & 2). The coastwide mean catch rates of spotted seatrout, black drum, sheepshead and Atlantic croaker generally declined from fall 1975 through 1979 and increased through 1982. The annual trends were similar for both fall and spring. The coastwide mean catch rates of southern flounder ( $\leq 0.1$  fish/h) and sheepshead ( $\sim 0.2$  fish/h) remained stable during the survey period.

During both seasons combined, the coastwide mean total lengths generally fell within a narrow size range for each species: red drum (373-466 mm), spotted seatrout (424-496 mm), black drum (346-393 mm), sheepshead (292-350 mm), southern flounder (321-365) and Atlantic croaker (270-320 mm) (Tables 1 & 2). Mean total lengths for red drum, spotted seatrout and sheepshead were typically larger during the spring than fall, whereas the mean lengths of black drum, southern flounder and Atlantic croaker were larger in the fall than in the spring.

The catch rates of each species varied among mesh size during both seasons (Tables 3-18). Higher catches of red drum, spotted seatrout, and Atlantic croaker occurred in the 7.6- and 10.2-cm stretched mesh, while black drum and southern flounder had higher catch rates in the 10.2- and 12.7-cm meshes. Sheepshead had higher catch rates in the 12.7- and 15.2-cm meshes.

## Red drum

Fall: The coastwide mean catch rate of red drum caught with gill nets (all meshes combined) generally declined (~30%) from 1975 through 1978, increased (~30%) in 1979 and declined through 1981 (Table 1). Catch rates within Galveston, East Matagorda, Matagorda, San Antonio and Aransas Bays generally followed this same trend. Catch rates in Corpus Christi Bay were 0.4-0.5 fish/h during 1975-78, increased to 0.8 fish/h in 1979 and declined to 0.6 fish/h in 1981. The fall catch rates of red drum in the upper Laguna Madre were 0.3 fish/h during all years except during 1979 and 1980 when they were 0.5 fish/h. In the lower Laguna Madre the catch rates of red drum have declined from 1976 (1.3 fish/h) to 1977 (0.4 fish/h) and increased annually through 1981 (0.8 fish/h). The upper Laguna Madre had the lowest range of fall catch rates (0.3-0.5 fish/h) during 1975-81. The highest catch rate (1.9 fish/h) occurred in San Antonio Bay in 1979.

Coastwide mean total lengths of red drum ranged from 373 to 460 mm with generally larger fish associated with low catch rates and smaller fish associated with higher catch rates (Table 1). Mean total lengths within bays ranged from 323 mm in San Antonio Bay in 1975 to 510 mm in the upper Laguna Madre in 1976.

The fall catch rates of red drum were highest in the 7.6- and 10.2-m meshes in all bay systems except East Matagorda Bay (Tables 3-10). The high catch rate in East Matagorda Bay (0.9 fish/h) occurred in the 12.7-cm mesh in 1976. The highest catch rate (1.3 fish/h) for all bay systems occurred in San Antonio Bay in the 7.6-cm mesh in 1979. Mean total length of red drum increased with increased mesh size in all bay systems.

Spring: The coastwide mean catch rate of red drum in gill nets (all meshes combined) declined (~ 50%) from 0.7 fish/h during 1976 to 0.3 fish/h during 1977, 1978 and 1979 (Table 2). The catch rate increased (~ 60%) in 1980 (0.8 fish/h), declined (~ 50%) in 1981 to 0.4 fish/h and increased in 1982 (0.6 fish/h). Generally this same trend occurred within each bay system. The highest catch rates in East Matagorda Bay (0.4 fish/h) occurred in 1978, 1980 and 1982. The highest catch rates of red drum (0.9 fish/h) in Galveston Bay occurred in 1980 and 1982. The catch rates of red drum in the lower Laguna Madre declined from 1.2 fish/h in 1976 to 0.3 fish/h in 1979 and increased to 1.0 fish/h in 1981 and 1982.

Coastwide mean total lengths for red drum during spring ranged from 391 to 466 mm (Table 2). Mean total lengths ranged from 269 mm in the lower Laguna Madre during 1977 to 538 mm in the upper Laguna Madre during 1976.

The spring catch rates of red drum were highest in the 7.6- and 10.2-cm meshes in all bay systems (Tables 11-18). The highest catch rate (0.8 fish/h) occurred in the 7.6-cm mesh in Matagorda Bay during spring 1980. Although the catch rates were generally low, especially in the 12.7- and 15.2-cm meshes, mean total length increased with increased mesh size.

## Spotted seatrout

Fall: The coastwide mean catch rates of spotted seatrout in gill nets (all meshes combined) declined ( $\sim 57\%$ ) from 1977 through 1980 and increased ( $\sim 33\%$ ) in 1981 (Table 1). Generally this same trend occurred within each bay system. Spotted seatrout catch rates in Matagorda Bay declined 50% from 1978 (0.8 fish/h) to 1981 (0.4 fish/h). Galveston Bay had the lowest range of fall catch rates (0.2-0.4 fish/h) during 1975-81. The highest catch rate (1.1 fish/h) occurred in East Matagorda Bay in 1976.

Coastwide mean total lengths of spotted seatrout ranged from 432 to 462 mm (Table 1). Mean total lengths within bays ranged from 385 mm in East Matagorda Bay during 1979 to 548 mm in Galveston Bay during 1978.

The fall catch rates of spotted seatrout were highest in the 7.6- and 10.2-cm meshes in all bay systems (Tables 3-10). The highest catch (1.6 fish/h) occurred in the lower Laguna Madre in the 7.6-cm mesh in 1976. The mean total length of spotted seatrout generally increased with increased mesh size.

Spring: The coastwide mean catch rate of spotted seatrout in gill nets (all meshes combined) declined ( $\sim 70\%$ ) from 1.1 fish/h in 1976 to 0.3 fish/h in 1979 and increased ( $\sim 66\%$ ) to 0.9 fish/h in 1982 (Table 2). Generally this same trend occurred with each bay system. Generally, the 1982 catch rates in each bay system were at least 50% greater than catch rates during 1979 and 1980, but not equal to the highest catches observed within each bay system. The catch rates of spotted seatrout ranged from 0.0 to 3.4 fish/h in the upper and lower Laguna Madre, respectively, during 1976.

Spring coastwide mean total lengths of spotted seatrout ranged from 424 to 496 mm (Table 2). Mean total lengths ranged from 365 to 533 mm in 1976 and 1979, respectively, in Corpus Christi Bay.

The spring catch rates of spotted seatrout were highest in the 7.6- and 10.2-cm meshes in all bay systems (Tables 11-18). The highest catch rate (2.4 fish/h) occurred in the 7.6-cm mesh in the lower Laguna Madre in 1976. The mean total length of spotted seatrout generally increased with increased mesh size.

## Black drum

Fall: The coastwide mean catch rate of black drum in gill nets (all meshes combined) declined ( $\sim 60\%$ ) from 1976 through 1979 (Table 1). Catch rates increased ( $\sim 60\%$ ) in 1980 followed by another decline ( $\sim 37\%$ ) in 1981. The same trend occurred within each bay system. The lowest fall catch of black drum (0.1 fish/h) occurred in Corpus Christi Bay in 1978; the highest catch (2.7 fish/h) occurred in the lower Laguna Madre in 1977.

The fall coastwide mean total lengths of black drum ranged from 367 to 393 mm (Table 1). Mean total lengths within bays ranged from 287 mm in Aransas Bay during 1978 to 506 mm in the upper Laguna Madre during 1976.

The fall catch rates of black drum were generally highest in the 10.2- and 12.7-cm meshes in all bay systems (Tables 3-10). The highest catch of black drum (1.0 fish/h) occurred in the 12.7-cm mesh in the lower Laguna Madre in 1976 and 1977. The mean total lengths of black drum generally increased with increased mesh size.

Spring: The coastwide mean catch rate of black drum in gill nets (all meshes combined) declined ( $\sim 57\%$ ) from 0.7 fish/h in 1976 to 0.3 fish/h in 1978 and increased to 0.7 fish/h in 1982 (Table 2). Generally, this same trend occurred within each bay system. The highest catch rate of black drum (1.2 fish/h) occurred in 1977 in Aransas Bay and in 1982 in the lower Laguna Madre.

Spring coastwide mean total lengths of black drum ranged from 346 to 384 mm (Table 2). Mean total lengths ranged from 250 mm in East Matagorda Bay to 518 mm in Matagorda Bay, both in 1977.

The catch rates of black drum were highest in the 7.6- and 10.2-cm meshes in all bay systems except Galveston and the lower Laguna Madre (Tables 11-18). The 12.7-cm mesh yielded the highest catches of black drum in Galveston Bay (0.4 fish/h in 1981) and the lower Laguna Madre (0.6 fish/h in 1976). Mean total lengths of black drum generally increased with increased mesh size.

#### Sheepshead

Fall: The coastwide mean catch rate of sheepshead in gill nets (all meshes combined) ranged from 0.2 to 0.3 fish/h during fall, 1975-81 (Table 1). Catches were  $\leq 0.4$  fish/h during all years within all bays systems except San Antonio and Aransas Bays. Catch rates of sheepshead in San Antonio Bay ranged from  $< 0.1$  fish/h in 1977 to 0.7 fish/h in 1980 with no annual trend apparent. Sheepshead catches in Aransas Bay declined ( $\sim 60\%$ ) from 1975 (1.5 fish/h) through 1978 (0.6 fish/h) followed by an increase in 1979 (0.8 fish/h). Subsequent decline to 0.2 fish/h in 1981 represents an 87% decrease from 1975.

Coastwide mean total lengths of sheepshead ranged from 292 to 337 mm (Table 1). Mean total lengths within bays ranged from 266 in Aransas Bay during 1977 to 409 in the upper Laguna Madre during 1975.

The fall catch rates of sheepshead were highest in the 12.7- and 15.2-cm meshes in all bay systems (Tables 3-10). The highest catch rate of sheepshead (0.9 fish/h) occurred in the 12.7-cm mesh in Aransas Bay in 1975. Low catch rates produced high variability in the mean total lengths by mesh size, although a trend was apparent for generally larger fish to be caught in larger meshes.

Spring: Coastwide mean catch rates of sheepshead in gill nets (all meshes combined) were  $\leq 0.3$  fish/h during 1976-82 (Table 2). Catch rates in Galveston and Matagorda Bays were  $\leq 0.1$  fish/h each spring during 1976-82. The highest catch rate of sheepshead (0.6 fish/h) occurred in San Antonio Bay (1981), Aransas Bay (1976) and the lower Laguna Madre (1981). No annual trends were apparent.

Coastwide mean total lengths of sheepshead during ranged from 315 to 350 mm (Table 2). Mean total lengths ranged from 232 in Aransas Bay in 1977 to 453 mm in Matagorda Bay in 1981.

The 12.7- and 15.2-cm meshes yielded the highest catch rates of sheepshead for all bay systems (Tables 11-18). The highest catch rate (0.5 fish/h) occurred in the 15.2-cm mesh in Aransas Bay in 1976. No sheepshead were caught in any spring 1976-82 in the 7.6-cm mesh in East Matagorda Bay and the upper Laguna Madre. Mesh size selectivity (i.e. larger fish in larger mesh sizes) was more apparent in bay systems with higher catch rates, such as Aransas and Corpus Christi Bays and the upper and lower Laguna Madre.

#### Southern flounder

Fall: Coastwide mean catch rates of southern flounder in gill nets (all meshes combined) during the fall remained 0.1 fish/h during all years, except 1980 when the catch rate was 0.2 fish/h (Table 1). Fall 1981 catch rates were 0.1 fish/h in all bay systems. Catch rates during all years were  $\leq 0.3$  fish/h in all bays except in East Matagorda and San Antonio Bays. The highest catch rates occurred in 1976 (0.6 fish/h) in East Matagorda Bay and 1977 (0.3 fish/h) in San Antonio Bay.

Coastwide total lengths of southern flounder ranged from 337 to 355 mm (Table 1). Mean total lengths within bays ranged from 243 mm in Corpus Christi Bay in 1979 to 491 mm in the upper Laguna Madre in 1977.

Catch rates of southern flounder were highest in the 10.2- and 12.7-cm meshes in all bay systems (Tables 3-10). Catch rates by mesh size were  $< 0.1$  fish/h in all bay systems except East Matagorda in 1976 and San Antonio Bays in 1977. Generally, larger fish were caught with larger mesh sizes although mean sizes varied among mesh sizes, probably due to low numbers of flounder caught.

Spring: Mean catch rates of southern flounder in gill nets (all meshes combined) from 1976 to 1982 were  $\leq 0.1$  fish/h coastwide and within all bay systems except the lower Laguna Madre, where peak catch rates of 0.2 fish/h occurred during 1976 and 1979 (Table 2).

Coastwide mean total lengths of southern flounder caught ranged from 321 to 365 mm (Table 2). Mean total lengths ranged from 208 mm in San Antonio Bay in 1977 to 451 mm in Galveston Bay in 1979.

The catch rates of southern flounder by individual mesh sizes during spring 1976-82 occurred most consistently in the 10.2- and 12.7-cm meshes (Tables 11-18). The highest catch rate (0.2 fish/h) occurred in the

12.7-cm mesh in the lower Laguna Madre in 1976. Generally mean total length increased with increased mesh size.

#### Atlantic croaker

Fall: Coastwide mean catch rates of Atlantic croaker in gill nets (all meshes combined) increased from 0.1 fish/h in 1975 to 0.4 fish/h in 1977 and declined to 0.1 fish/h in 1979 (Table 1). Catch rates increased to 0.3 fish/h in 1980 and 1981. Generally this same trend occurred in all bay systems except years of peak catches varied. Fall catch rates were  $\leq$  0.4 fish/h within all bays except Aransas Bay, Corpus Christi Bay and the upper Laguna Madre. The highest catch rates of Atlantic croaker in Aransas Bay (0.9 fish/h) and the upper Laguna Madre (0.8 fish/h) occurred during fall 1977; the highest catch rate in Corpus Christi Bay (1.7 fish/h) occurred in 1980. The 1981 catch rates of Atlantic croaker were  $\leq$  0.4 fish/h in all bays except Aransas and Corpus Christi Bays, which had catch rates of 0.7 and 0.8 fish/h, respectively.

Coastwide mean total lengths of Atlantic croaker ranged from 290 to 320 mm (Table 1). Mean total lengths of Atlantic croaker ranged from 243-301 mm in the upper coast bays (Galveston, East Matagorda, Matagorda and San Antonio) and from 287-350 mm in the lower coast bays (Aransas, Corpus Christi, upper Laguna Madre, lower Laguna Madre).

The highest catches of Atlantic croaker occurred in the 7.6-cm mesh in all bay systems except Aransas Bay, Corpus Christi Bay and the upper Laguna Madre (Table 3-10). The 10.2-cm mesh caught the most Atlantic croaker in these bay systems. Generally, mean total length increased with increased mesh size.

Spring: The coastwide mean catch rate of Atlantic croaker in gill nets (all meshes combined) during spring was highest in 1976 and 1977 (0.3 fish/h) and remained low (0.1 fish/h) during 1978-81 and increased to 0.2 fish/h in 1982 (Table 2). Generally this trend occurred within each bay system. The highest catch rates occurred in Corpus Christi Bay (1.0 fish/h in 1976 and 1977) and the lower Laguna Madre (0.8 fish/h in 1976).

Spring coastwide mean total length of Atlantic croaker ranged from 270 to 306 mm (Table 2). Mean total lengths ranged from 240 mm in Aransas Bay in 1980 to 342 mm in the lower Laguna Madre in 1982.

The highest catches of Atlantic croaker in gill nets (individual meshes) occurred in the 7.6- and 10.2-cm meshes in all bay systems (Tables 11-18). The highest catch rate (1.0 fish/h) occurred in the 7.6-cm mesh in Corpus Christi Bay during spring 1976.

#### Monthly Gill Nets

No trends in monthly catch rates (December 1981-March 1982) of red drum, spotted seatrout, black drum, sheepshead, southern flounder and Atlantic croaker were apparent because of the variation of catches

among months and mesh sizes (Tables 19-26). Monthly catch rates were usually lower than seasonal mean catch rates within each bay system.

Mean total lengths varied among months and mesh sizes, however, monthly mean sizes of red drum, spotted seatrout and sheepshead were similar to the larger fish encountered during spring and the mean sizes of black drum, southern flounder and Atlantic croaker were similar to the larger fish encountered during fall.

#### Red drum

Highest mean catch rates of red drum varied among months and mesh sizes in all bay systems (Tables 19-26). In all meshes combined, the highest catch rate (4.6 fish/h) occurred in Matagorda Bay in February 1982. Mean total lengths ranged from 338 mm in December in Matagorda Bay to 585 mm in January in Aransas Bay.

#### Spotted Seatrout

Highest mean catches of spotted seatrout generally occurred in the 7.6- and 10.2-cm meshes although the month of highest catch varied among bay systems (Tables 19-26). The lower Laguna Madre had the highest catch rate for all meshes combined (2.1 fish/h) in February 1982. Mean total lengths ranged from 379 mm in February in San Antonio Bay to 578 mm in December in the lower Laguna Madre.

#### Black drum

Highest mean catch rates of black drum varied among months but occurred most consistently in the 10.2- and 12.7-cm meshes in all bay systems (Tables 19-26). In all meshes combined, the highest catch rate (2.6 fish/h) occurred in the lower Laguna Madre in February 1982. Mean total lengths ranged from 247 mm in March 1982 in Galveston Bay to 539 mm in January in the upper Laguna Madre.

#### Sheepshead

Highest mean catches of sheepshead varied among months but occurred most consistently in the 12.7- and 15.2-cm meshes in all bay systems (Tables 19-26). No sheepshead were caught in the 7.6-cm mesh in Galveston Bay, San Antonio Bay, Corpus Christi Bay, the upper Laguna Madre and the lower Laguna Madre. In all meshes combined, the highest catch rate (2.4 fish/h) occurred in Corpus Christi in December 1981. Mean total lengths ranged from 290 mm in December in Aransas Bay to 448 mm in January 1982 in Corpus Christi Bay.

#### Southern flounder

Southern flounder were caught more frequently in the 10.2- and 12.7-cm meshes although monthly catch rates were  $\leq 0.1$  fish/h in all mesh sizes in all bay systems except the lower Laguna Madre (Tables 19-26). In all meshes combined, the highest catch rate (0.2 fish/h) occurred in the lower Laguna Madre in December 1981. Mean total lengths ranged from 235 to 409 mm in Aransas and East Matagorda Bays, respectively.

## Atlantic croaker

Monthly catches of Atlantic croaker occurred predominantly in the 7.6-cm mesh (Tables 19-26). During December 1981-March 1982, no Atlantic croaker were caught in San Antonio and Aransas Bays; all other bay systems had at least one month during which no Atlantic croaker were caught. The highest catch rate (0.5 fish/h) occurred in December in the lower Laguna Madre. Mean total lengths (all meshes combined) ranged from 259 mm in December on East Matagorda Bay to 422 mm in January in the lower Laguna Madre.

## Bag Seines

Bag seine catches of red drum, southern flounder and Atlantic croaker generally increased coastwide and within bay systems from 1977 through 1982 (Table 27). The 1981-82 catch rates were the highest catches recorded during the past five years in most bay systems. The coastwide catch rates of spotted seatrout and black drum declined from 1977 through 1982 although this trend varied among bay systems. Sheepshead had the lowest catch rates of all species and no annual trends were apparent.

Monthly catch rate patterns revealed specific seasons during which red drum (October-March), spotted seatrout (July-October), black drum (June-September), sheepshead (May-July), southern flounder (February-May) and Atlantic croaker (July-December) were most available (Table 28). During the period of highest availability, the mean total lengths of red drum, black drum, southern flounder and Atlantic croaker generally increased monthly.

## Red drum

The 1981-82 coastwide mean catch rate (31.31 fish/ha) and mean total length (92 mm) of red drum caught with bag seines exceeded all previous years (Table 27). The 1981-82 catch rates were record high catches within each bay system except in Galveston Bay and the upper Laguna Madre. However, in these two bays, the 1981-82 catch rates exceeded the 1980-81 catches. The highest annual mean catch rate (70.09 fish/ha) occurred in 1979-80 in Galveston Bay; the lowest catch rate (0.35 fish/ha) occurred in 1980-81 in the upper Laguna Madre. Annual mean lengths within bay systems ranged from 50 to 178 mm.

Monthly mean catches of red drum in bag seines were highest in each bay system and coastwide during October 1981-March 1982 (Table 28). Peak catches ranged from 37.50 fish/ha in December in the upper Laguna Madre to 250.00 fish/ha in November in Corpus Christi Bay. Each bay system, except Matagorda Bay had at least one month during which no red drum were collected. Monthly mean total lengths ranged from 27 to 395 mm. Overall mean lengths were similar in all bay systems as were the apparent increases in size from October 1981 through September 1982 within each bay system as well as coastwide.



### Spotted seatrout

Coastwide mean bag seine catches of spotted seatrout declined about 50% from 1977-78 (17.50 fish/ha) to 1981-82 (8.87 fish/ha) (Table 27). The annual mean catch rates in Galveston Bay, Matagorda Bay and the upper Laguna Madre declined about 75% from 1977 through 1982. Annual mean bag seine catch rates among other bay systems varied among years. The highest annual mean catch rate (39.41 fish/ha) occurred in 1977-78 in Galveston Bay; the lowest catch rate (0.34 fish/ha) occurred in 1979-80 in the lower Laguna Madre. Annual mean lengths ranged from 41 to 132 mm.

Monthly catches of spotted seatrout were generally highest during October-December 1981 and July-September 1982 in all bay systems and coastwide (Table 28). The highest catch (100.00 fish/ha) occurred in September in San Antonio Bay. No spotted seatrout were collected during January and March in any bay system. Monthly mean total lengths ranged from 34 to 338 mm.

### Black drum

The coastwide mean catches of black drum caught with bag seines have declined about 50% from 1977 (12.52 fish/ha) to 1982 (5.73 fish/ha) (Table 27). Annual mean catch rates in Galveston Bay and the lower Laguna paralleled the coastwide trend; the mean catch rates in the other bay systems varied among years. The highest annual mean bag seine catch of black drum (37.04 fish/ha) occurred in 1978-79 in Galveston Bay. No black drum were caught in the lower Laguna Madre during 1977-78. Annual mean total lengths within bay systems ranged from 46 to 206 mm.

Monthly bag seine catches of black drum were the highest in all bay systems and coastwide during October 1981 and June-September 1982 (Table 28). Peak catches ranged from 2.50 fish/ha in the upper Laguna Madre to 53.33 fish/ha in San Antonio Bay. No black drum were caught with bag seines during January 1982. Monthly mean total lengths ranged from 32 to 277. A general increase in mean monthly total lengths was apparent in coastwide and some individual bay systems during June-September.

### Sheepshead

Coastwide mean total lengths of sheepshead caught in bag seines increased from 1977-78 (70 mm) to 1981-82 (251 mm) although catch rates did not vary much (1.22-1.72 fish/ha) in all years except 1978-79 (6.49 fish/ha) (Table 27). The highest annual mean catch rate of sheepshead (15.74 fish/ha) occurred in 1978-79 in Galveston Bay. No sheepshead were caught in the upper Laguna Madre during 1977-78, 1979-80, 1980-81 and 1981-82. Annual mean total lengths within bay systems ranged from 40 to 368 mm.

The highest monthly mean catch (23.33 fish/ha) of sheepshead with bag seines occurred in June in Galveston Bay (Table 28). Each bay system had at least seven months during which no sheepshead were collected. Mean total lengths ranged from 27 to 425. No monthly or seasonal trend

was apparent, although May-July generally had the highest coastwide mean catch rates.

#### Southern flounder

Coastwide mean catch rates of southern flounder caught with bag seines have increased 70% from 1977-78 (2.52 fish/ha) to 1981-82 (8.73 fish/ha) (Table 27). Annual mean catch rates varied among years and among bag systems, except in Aransas Bay, the upper Laguna Madre and the lower Laguna Madre. Aransas Bay and the lower Laguna Madre have shown generally increased flounder catches from 1977-78 through 1981-82; the catch rates in the upper Laguna Madre have generally declined during the same time period. The 1981-82 catches of southern flounder in Galveston Bay, San Antonio Bay, Aransas Bay and the lower Laguna Madre were higher than any previous annual catch rate within each bay. Aransas Bay had the lowest mean catch (0.00 fish/ha in 1978-79) and the highest mean catch (19.01 fish/ha in 1981-82) in bag seines. Mean total lengths within bay systems ranged from 36 to 300 mm.

Monthly mean bag seine catches of southern flounder were generally highest in all bay systems and coastwide during February-May 1982 (Table 28). The highest monthly mean catch rate (164.00 fish/ha) occurred in March in Aransas Bay. Each bay system had at least three months during which no southern flounder were caught. Monthly mean total lengths ranged from 20 to 398 mm. A general increase in monthly mean total lengths was apparent coastwide during February-September.

#### Atlantic croaker

The 1981-82 coastwide mean catch rate (482.23 fish/ha) of Atlantic croaker in bag seines exceeds all previous years (Table 27). The 1981-82 catch rates were record high catches in each bay system except Corpus Christi Bay, the upper Laguna Madre and the lower Laguna Madre. However, in these three bay systems, the 1981-82 catch rates exceeded the 1980-81 catches. Annual mean catch rates of Atlantic croaker ranged from 0.35 fish/ha in 1980-81 in the upper Laguna Madre to 1861.80 fish/ha in 1981-82 in Galveston Bay. Higher annual catch rates generally occurred in Galveston Bay, Matagorda Bay and the lower Laguna Madre than in other bay systems. Annual mean total lengths within bay systems ranged from 40 to 140 mm.

Monthly mean bag seine catches of Atlantic croaker were generally highest in all bay systems and coastwide during December 1981-July 1982 (Table 28). The highest monthly mean catch rate (8230.00 fish/ha) occurred in April in Galveston Bay. Each bay system except Galveston Bay had at least one month during which no Atlantic croaker were collected. There was only one month (November) during which Atlantic croaker were caught (7.50 fish/ha) in the upper Laguna Madre. Monthly mean total lengths ranged from 29 to 184 mm. Within bays and coastwide, lengths increased from December 1981 through September 1982.

## LITERATURE CITED

- Cochran, W. G. 1977. Sampling techniques. 3rd Ed. John Wiley and Sons. New York 428 p.
- Diener, R. A. 1975. Cooperative Gulf of Mexico estuarine inventory and study-Texas: area description. NOAA tech. Reports NMFS Circ. 393. 129 p.
- Gallaway, B. J., J. C. Parker and D. Moore. 1972. Key to the estuarine and marine fishes of Texas. Texas Agriculture Extension Service, Tx. A&M Univ. Sea Grant, Publ. No. 72-404. 177 p.
- Gutherz, E. J. 1967. Field guide to the flatfishes of the family Bothidae in the western North Atlantic. Bur. Comm. Fish Circ. 263. 47 p.
- Hamilton, C. L. 1982. Texas commercial harvest statistics, 1977-81. Tx. Pks. & Wildl. Dept. Coast. Fish. Branch. Mgmt. Data Ser. 45. 59 p.
- Harrington, R. A., G. C. Matlock and J. E. Weaver. 1979. Length-weight and dressed-whole weight conversion tables for selected saltwater fishes. Tx. Pks. & Wildl. Dept. Coast. Fish. Branch Mgmt. Data Ser. No. 6. 64 p.
- Heffernan, T. L., A. W. Green, L.W. McEachron, M. G. Weixelman, P. C. Hammerschmidt and R. A. Harrington. 1976. Survey of finfish harvest in selected Texas bays. Tx. Pks. & Wildl. Dept. Coast. Fish. Branch Proj. Rept. No. 2-231-R-1. 116 p.
- \_\_\_\_\_ and R. J. Kemp. 1980. Management of the red drum resource in Texas. Pages 71-80 in Proceedings of the colloquium on the biology and management of red drum and seatrout, Oct. 19-20, 1978, Tampa, Fla. Gulf States Mar. Fish. Comm. Oceans Springs, Miss.
- Hegen, H. E., G. C. Matlock and A. W. Green. 1983. Evaluation of gill and trammel net sampling strategies for monitoring finfish availability in Texas bays. Tx. Pks. & Wildl. Dept. Coast. Fish. Branch. Tech. Ser. No. 33. (In press)
- Hildebrand, S. F. and L. E. Cable. 1930. Development and life history of fourteen teleostean fishes at Beaufort, N.C. Bull. Bur. Fish. 46:383-488.
- \_\_\_\_\_ and L. E. Cable. 1940. Further notes on the development and life history of some teleosts at Beaufort, N.C. Bull. Bur. Fish. 548:504-642.
- Hoese, H. D. and R. H. Moore. 1977. Fishes of the Gulf of Mexico, Texas, Louisiana, and adjacent waters. Tx. A&M Univ. Press College Station. 327 p.

- Matlock, G. C. and M. O. Ferguson. 1982. Shallow-water surface areas and shoreline distances on the Texas coast. Tx. Pks. & Wildl. Dept. Coast. Fish. Branch Mgmt. Data Series No. 37. 10 p.
- Matlock, G. C. and J. E. Weaver. 1979. Assessment and monitoring of Texas coastal finfish resources. Tx. Pks. & Wildl. Dept. Coast. Fish. Branch PWD 3000-66. 247 p.
- McEachron, L. W. and A. W. Green. 1983. Weekend sport boat fishermen finfish catch statistics for Texas bay systems, May 1974-May 1982. Tx. Pks. & Wildl. Dept. Coast. Fish. Branch. Mgmt. Data Ser. No. (In press).
- Pearson, J. C. 1929. Natural history and conservation of redfish and other commercial sciaenids of the Texas coast. Bull. Bur. Fish. 44:129-214.
- Stevenson, C. H. 1893. Report on the coast fisheries of Texas. Part II. Report of the Commissioner for 1880 to 1891. U. S. Comm. Fish and Fisheries: 373-420.
- Walls, J. G. 1975. Fishes of the northern Gulf of Mexico. T. F. H. Publications, Inc. Ltd., Neptune City, N.J. 432 p.



Table 1. (Cont'd).

Species	Year	Bay system																	
		Galveston		East Matagorda		Matagorda		San Antonio		Aransas		Corpus Christi		Upper Laguna Madre		Lower Laguna Madre		Coastwide	
		No./h	Length	No./h	Length	No./h	Length	No./h	Length	No./h	Length	No./h	Length	No./h	Length	No./h	Length	No./h	Length
Southern Flounder	1975	0.1	380			0.1	323	0.1	250	0.1	312	0.1	380	0.1	448	0.1	338	0.1	348
	1976	<.1	365	0.6	310	<.1	296	0.2	363	0.1	304	0.2	352	0.1	347	0.1	392	0.1	343
	1977	0.2	326	0.3	337	<.1	322	0.3	314	0.2	360	0.1	353	<.1	491	<.1	330	0.1	337
	1978	0.1	353	0.1	345	<.1	310	0.1	314	0.1	364	0.2	360	<.1	357	<.1	334	0.1	347
	1979	<.1	341	0.1	341	0.1	352	0.2	388	0.1	336	0.1	243	0.1	396	0.1	367	0.1	355
	1980	0.2	345	0.3	362	0.2	330	0.1	325	0.1	354	0.2	342	0.2	363	0.1	400	0.1	348
	1981	0.1	322	0.1	357	0.1	332	0.1	303	0.1	358	0.1	345	0.1	385	0.1	363	0.1	342
Atlantic croaker	1975	<.1	243			0.0		0.1	295	0.2	333	0.4	319	0.1	314	0.1	344	0.1	317
	1976	0.3	262	0.1	250	0.3	263	0.4	301	0.2	316	0.6	317	0.4	350	0.3	338	0.3	302
	1977	0.2	294	0.1	274	0.2	270	0.2	285	0.9	307	0.8	350	0.8	350	0.2	334	0.4	320
	1978	0.1	274	0.1	248	0.2	250	0.1	260	0.5	317	0.5	294	0.4	287	<.1	331	0.2	290
	1979	<.1	265	0.2	253	0.1	282	0.2	273	0.1	316	0.5	318	0.1	316	0.2	330	0.1	304
	1980	0.2	287	0.1	263	0.2	262	0.1	258	0.2	323	1.7	303	1.7	317	0.2	298	0.3	296
1981	0.2	280	0.2	253	0.1	271	0.2	270	0.7	329	0.8	317	0.8	323	0.4	332	0.3	311	

Table 2. Mean catch rates (No./h) and mean total lengths (mm) of selected fishes caught with gill nets (all meshes combined) during spring in Texas bay systems during 1976-1982 (Blank indicates no measurement taken).

Species	Year	Bay system																															
		Galveston			East Matagorda			Matagorda			San Antonio			Aransas			Corpus Christi			Upper Laguna Madre			Lower Laguna Madre			Coastwide							
		No./h	Length		No./h	Length		No./h	Length		No./h	Length		No./h	Length		No./h	Length		No./h	Length		No./h	Length		No./h	Length		No./h	Length			
Red drum	1976	<.1	310		1.0	429		1.0	405		1.0	451		0.6	412		0.2	538		1.2	333		1.2	333		0.7	407		0.7	407			
	1977	0.3	451	0.2	415		0.3	386		0.4	435		0.4	396		0.1	438		0.5	269		0.5	269		0.3	391		0.3	391				
	1978	0.1	394	0.4	430		0.2	399		0.2	449		0.3	470		0.2	495		0.5	275		0.5	275		0.3	415		0.3	415				
	1979	0.2	491	0.1	447		0.2	427		0.2	426		0.3	498		0.2	479		0.3	304		0.3	304		0.3	429		0.3	429				
	1980	0.9	449	0.4	440		0.7	400		0.4	373		1.0	432		0.8	418		0.6	288		0.6	288		0.6	288		0.8	402		0.8	402	
	1981	0.3	431	0.2	462		0.5	397		0.5	406		0.3	431		0.3	411		1.0	441		1.0	441		1.0	441		0.4	443		0.4	443	
	1982	0.9	477	0.4	439		0.4	409		0.4	432		0.5	473		0.3	496		1.0	502		1.0	502		1.0	502		0.6	466		0.6	466	
Spotted seatrout	1976	<.1	530		0.3	400		0.5	382		3.3	474		0.3	365		0.0	444		3.4	457		3.4	457		1.1	456		1.1	456			
	1977	0.2	516	2.0	440		0.9	400		1.0	402		0.4	384		1.3	444		1.5	423		1.5	423		0.8	424		0.8	424				
	1978	0.2	524	0.4	432		1.4	413		0.1	446		0.5	446		0.9	472		1.4	511		1.4	511		0.7	461		0.7	461				
	1979	0.2	518	0.5	430		0.2	486		0.1	443		0.3	533		0.4	438		0.6	527		0.6	527		0.3	496		0.3	496				
	1980	0.1	439	0.8	396		0.6	428		0.9	397		0.2	475		0.3	505		0.9	527		0.9	527		0.5	457		0.5	457				
	1981	0.4	483	1.9	410		0.7	464		0.7	470		0.5	440		0.4	430		2.2	485		2.2	485		2.2	485		0.8	462		0.8	462	
	1982	0.4	492	0.9	462		0.8	444		0.8	470		0.7	493		0.8	489		2.5	503		2.5	503		2.5	503		0.9	480		0.9	480	
Black drum	1976	0.2	310		0.8	443		1.0	306		0.9	389		0.6	360		1.1	352		0.9	387		0.9	387		0.7	370		0.7	370			
	1977	0.4	388	0.3	250		1.0	315		1.2	330		0.5	347		0.4	376		0.9	430		0.9	430		0.7	377		0.7	377				
	1978	0.2	453	0.4	352		0.1	318		0.4	336		0.4	318		0.1	388		0.8	397		0.8	397		0.3	370		0.3	370				
	1979	0.3	295	0.6	320		<.1	465		0.4	315		0.1	396		0.3	370		0.9	416		0.9	416		0.4	377		0.4	377				
	1980	0.4	312	1.0	276		0.5	256		1.0	321		0.3	353		0.7	384		0.4	456		0.4	456		0.6	346		0.6	346				
	1981	0.8	422	0.8	301		0.4	358		0.8	362		0.1	372		1.1	390		0.9	402		0.9	402		0.6	384		0.6	384				
	1982	0.6	349	0.8	323		0.7	328		1.1	305		0.4	342		0.7	382		1.2	401		1.2	401		0.7	353		0.7	353				
Sheeps-head	1976	0.0			0.1	420		0.3	341		0.6	342		0.0	367		0.5	367		0.3	318		0.3	318		0.2	349		0.2	349			
	1977	<.1	338	<.1	234		0.1	308		<.1	232		0.1	294		0.1	380		0.1	336		0.1	336		0.1	315		0.1	315				
	1978	0.0		0.4	294		<.1	278		0.1	313		0.2	356		0.2	395		0.2	358		0.2	358		0.2	350		0.2	350				
	1979	<.1	305	0.1	289		0.1	391		<.1	402		0.5	364		0.1	370		0.2	339		0.2	339		0.2	350		0.2	350				
	1980	<.1	353	0.3	352		0.1	344		0.1	320		0.2	322		0.2	369		0.3	346		0.3	346		0.3	346		0.2	346				
	1981	<.1	393	0.2	320		<.1	453		0.6	335		0.3	319		0.2	390		0.6	325		0.6	325		0.6	325		0.3	342				
	1982	<.1	332	0.0	333		<.1	333		0.1	354		0.1	344		0.2	361		0.4	326		0.4	326		0.4	326		0.1	338				

Table 2. (Cont'd).

Species	Year	Bay system																							
		Galveston			East Matagorda			Matagorda			San Antonio			Aransas		Corpus Christi		Upper Laguna Madre		Lower Laguna Madre		Coastwide			
		No./h	Length		No./h	Length		No./h	Length		No./h	Length		No./h	Length		No./h	Length	No./h	Length	No./h	Length	No./h	Length	
Southern flounder	1976	0.0			0.0			0.0			0.1	335	0.0	0.0	0.0	0.0	0.0	0.0	0.2	350	<.1	345	<.1	345	
	1977	<.1	351	0.1	326	<.1	328	<.1	208	<.1	208	0.1	358	<.1	430	0.0	345	<.1	345	<.1	345	0.1	340	0.1	340
	1978	<.1	249	0.1	312	<.1	330	0.1	294	0.1	294	<.1	338	0.1	334	0.1	345	0.1	344	0.1	344	0.1	321	0.1	321
	1979	<.1	451	0.1	337	<.1	292	0.1	405	0.1	405	<.1	282	0.1	380	0.1	320	0.2	371	0.2	371	0.1	365	0.1	365
	1980	0.1	344	0.1	318	0.1	307	<.1	320	<.1	320	0.1	295	0.1	316	<.1	364	0.1	376	0.1	376	0.1	330	0.1	330
	1981	<.1	244	<.1	340	<.1	270	<.1	291	<.1	291	<.1	363	0.1	332	0.1	348	0.1	338	0.1	338	0.1	321	0.1	321
1982	<.1	344	<.1	319	<.1	304	<.1	309	<.1	309	<.1	299	<.1	362	0.1	337	0.1	350	0.1	350	0.1	339	0.1	339	
Atlantic croacker	1976	0.2	298	0.1	255	0.1	293	0.2	238	<.1	238	0.0	285	1.0	277	0.0	297	0.8	333	0.2	269	0.3	306	0.3	306
	1977	0.3	268	0.1	270	<.1	264	<.1	250	<.1	250	<.1	248	0.1	281	0.4	281	0.2	275	0.2	275	0.1	270	0.1	270
	1978	0.1	252	<.1	258	<.1	264	0.0	235	<.1	235	0.0	240	0.1	263	0.2	299	0.1	288	0.2	304	0.1	276	0.1	276
	1979	0.2	256	<.1	248	0.0	276	<.1	267	<.1	267	<.1	264	0.1	275	0.3	315	0.1	288	0.1	288	0.1	287	0.1	287
	1980	0.1	268	0.1	250	<.1	270	0.0	267	0.0	267	0.1	290	0.1	266	0.3	304	0.1	273	0.1	273	0.1	282	0.1	282
	1981	0.1	260	0.1	263	<.1	270	<.1	267	<.1	267	<.1	264	0.1	283	0.2	314	0.4	342	0.1	342	0.1	282	0.1	282
1982	0.2	266	0.1	263	<.1	270	<.1	267	<.1	267	<.1	264	0.1	283	0.2	314	0.4	342	0.1	342	0.1	282	0.1	282	







Table 4. Mean catch rates (No./h) and mean total lengths (mm) by mesh size for selected fishes caught with gill nets during fall in the East Matagorda Bay system during 1975-1981 (Blank indicates no measurement taken).

Species	Year	Mesh size							
		7.6-cm		10.2-cm		12.7-cm		15.2-cm	
		No./h	Length	No./h	Length	No./h	Length	No./h	Length
Red drum	1975								
	1976	0.2	326	0.6	482	0.9	533	0.1	581
	1977	0.7	348	0.1	442	0.1	551	<.1	662
	1978	0.5	352	0.1	390	0.1	479	0.0	
	1979	0.4	373	0.2	419	0.1	498	<.1	538
	1980	0.3	353	0.1	448	0.2	584	0.1	593
	1981	0.5	378	<.1	408	<.1	472	<.1	637
Spotted seatrout	1975								
	1976	0.5	378	0.8	461	0.2	582	0.0	
	1977	0.1	382	0.1	534	<.1	555	<.1	536
	1978	0.2	366	0.1	458	<.1	542	0.0	
	1979	0.1	374	<.1	506	0.0		<.1	
	1980	0.1	413	<.1	455	<.1	400	<.1	366
	1981	0.6	397	0.1	488	<.1	586	0.0	
Black drum	1975								
	1976	0.2	210	0.4	286	0.3	342	0.1	426
	1977	<.1	313	0.2	324	0.2	400	0.1	425
	1978	0.2	235	0.3	330	0.4	372	0.1	462
	1979	<.1	894	<.1	306	0.1	401	<.1	496
	1980	<.1	253	0.5	298	0.2	374	0.1	480
	1981	0.1	253	0.2	310	0.1	374	0.1	441
Sheepshead	1975								
	1976	0.0		0.0		0.1	307	0.0	
	1977	0.0		0.1	261	0.2	304	0.1	370
	1978	0.0		<.1	259	0.1	286	0.1	362
	1979	<.1	350	<.1	377	0.2	340	<.1	386
	1980	0.0		<.1	239	<.1	315	<.1	360
	1981	0.0		0.1	224	<.1	292	<.1	382

Table 4. (Cont'd).

Species	Year	Mesh size							
		7.6-cm		10.2-cm		12.7-cm		15.2-cm	
		No./h	Length	No./h	Length	No./h	Length	No./h	Length
Southern flounder	1975	<.1	328	0.3	275	0.4	330	0.1	366
	1976	<.1	207	0.1	317	0.1	337	0.1	404
	1977	<.1	290	<.1	372	<.1	368	<.1	
	1978	<.1	323	<.1	271	<.1	369	<.1	530
	1979	<.1	250	0.1	341	0.1	368	0.1	427
	1980	<.1	348	<.1	296	<.1	367	<.1	385
	1981								
Atlantic croaker	1975								
	1976	0.1	254	0.0		0.0		0.0	
	1977	0.1	275	0.0		0.0		0.0	
	1978	0.1	248	0.0		0.0		0.0	
	1979	0.2	244	<.1	335	0.0		0.0	
	1980	0.1	270	<.1		0.0		0.0	
1981	0.2	253	0.0		0.0		0.0		



Table 5. (Cont'd).

Species	Year	Mesh size			
		7.6-cm No./h Length	10.2-cm No./h Length	12.7-cm No./h Length	15.2-cm No./h Length
Southern flounder	1975	0.1 254	<.1 280	<.1 438	<.1 460
	1976	<.1 220	<.1 307	<.1 338	0.0 390
	1977	<.1 250	0.0	<.1 326	<.1 387
	1978	0.0 240	0.0 310	<.1 284	<.1 454
	1979	<.1 202	<.1 311	<.1 437	<.1 436
	1980	<.1 271	0.1 298	0.1 401	<.1 413
	1981	<.1	<.1	<.1	<.1
Atlantic croaker	1975	0.0	0.0	0.0	0.0
	1976	0.3 262	<.1 308	0.0 347	0.0
	1977	0.2 259	<.1	0.0	0.0
	1978	0.2 255	0.0	0.0	0.0
	1979	0.1 282	0.0	0.0	0.0
	1980	0.2 261	0.0	0.0	0.0
	1981	0.1 267	0.0	0.0	0.0

Table 6. Mean catch rates (No./h) and mean total lengths (mm) by mesh size for selected fishes caught with gill nets during fall in the San Antonio Bay system during 1975-1981 (Blank indicates no measurement taken).

Species	Year	Mesh size							
		7.6-cm		10.2-cm		12.7-cm		15.2-cm	
		No./h	Length	No./h	Length	No./h	Length	No./h	Length
Red drum	1975	0.8	320	0.1	408	<.1	360	<.1	310
	1976	0.9	349	0.4	487	0.2	511	<.1	361
	1977	0.6	335	0.1	383	0.1	524	<.1	602
	1978	0.5	359	0.1	414	<.1	568	<.1	630
	1979	1.3	343	0.3	409	0.2	492	0.1	588
	1980	0.4	346	0.2	447	0.2	495	<.1	609
	1981	0.5	343	0.1	436	<.1	524	<.1	577
Spotted seatrout	1975	0.9	378	0.1	471	0.0	456	0.0	397
	1976	0.5	398	0.2	500	<.1		<.1	
	1977	0.6	380	<.1	457	0.0		0.0	
	1978	0.4	369	0.1	481	0.0		0.0	
	1979	0.2	397	0.1	542	0.0	445	0.0	
	1980	0.2	409	0.1	487	<.1	477	<.1	422
	1981	0.2	398	0.1	494	<.1	549	<.1	509
Black drum	1975	0.2	227	0.3	350	0.1	387	0.0	
	1976	0.2	228	0.6	315	0.3	386	0.1	461
	1977	0.1	291	0.3	308	0.1	395	<.1	512
	1978	0.1	228	0.1	311	0.1	381	<.1	500
	1979	0.1	246	0.2	327	0.1	439	<.1	509
	1980	0.5	255	0.6	316	<.1	363	0.1	461
	1981	0.2	244	0.2	338	0.1	392	<.1	492
Sheepshead	1975	<.1	210	0.1	217	0.1	298	0.1	412
	1976	<.1	166	0.1	260	0.1	319	0.2	356
	1977	0.0		<.1	225	<.1	391	<.1	260
	1978	0.0		<.1	276	0.1	356	0.3	383
	1979	<.1	205	<.1	270	0.2	359	0.2	380
	1980	0.0		0.2	254	0.4	303	0.1	410
1981	<.1	340	0.1	294	0.1	331	0.1	371	

Table 6. (Cont'd).

Species	Year	Mesh size			
		7.6-cm No./h Length	10.2-cm No./h Length	12.7-cm No./h Length	15.2-cm No./h Length
Southern flounder	1975	<.1 205	<.1 265	0.0 363	0.0 413
	1976	<.1 245	<.1 318	0.1 323	0.1 393
	1977	<.1 283	0.2 290	0.1 300	<.1 412
	1978	<.1 202	0.1 300	<.1 401	<.1 421
	1979	<.1 333	<.1 328	0.1 354	0.1 390
	1980	<.1 252	<.1 310	<.1 338	<.1 372
	1981	<.1 257	0.1 286	<.1 338	<.1 372
	1981	0.2 260	<.1 312	0.0 363	0.0 372
Atlantic croaker	1975	<.1 288	<.1 310	0.0 363	0.0 413
	1976	0.3 263	0.1 352	<.1 363	0.0 393
	1977	0.1 261	<.1 343	0.0 300	0.0 412
	1978	0.1 210	<.1 336	0.0 401	0.0 421
	1979	0.2 263	<.1 348	0.0 354	0.0 390
	1980	0.1 252	<.1 317	0.0 338	0.0 372
	1981	0.2 260	<.1 312	0.0 363	0.0 372
	1981	0.2 260	<.1 312	0.0 363	0.0 372



Table 7. Mean catch rates (No./h) and mean total lengths (mm) by mesh size for selected fishes caught with gill nets during fall in the Aransas Bay system during 1975-1981 (Blank indicates no measurement taken).

Species	Year	Mesh size								
		7.6-cm No./h      Length	10.2-cm No./h      Length	12.7-cm No./h      Length	15.2-cm No./h      Length					
Red drum	1975	1.0	335	384	<.1	575	<.1	575	0.0	
	1976	0.3	335	464	0.2	464	<.1	518	0.0	
	1977	0.5	346	445	0.1	445	<.1	495	<.1	659
	1978	0.5	383	423	0.4	423	<.1	690	0.0	
	1979	0.6	345	415	0.1	415	0.1	550	<.1	357
	1980	0.6	336	417	0.3	417	0.1	542	<.1	293
	1981	0.5	348	446	0.1	446	0.1	526	<.1	600
Spotted seatrout	1975	0.3	410	521	0.4	521	0.0		0.0	
	1976	0.1	358	496	0.1	496	<.1	553	0.0	
	1977	<.1	356	528	0.1	528	<.1	528	0.0	
	1978	<.1	396	462	<.1	462	<.1		0.0	
	1979	<.1	421	487	<.1	487	<.1	628	0.0	
	1980	0.1	393	470	0.1	470	<.1	494	0.0	
	1981	0.1	405	493	0.1	493	<.1	548	0.0	511
Black drum	1975	0.2	236	342	0.4	342	0.1	379	0.0	
	1976	0.1	254	305	0.2	305	0.1	483	<.1	632
	1977	0.1	244	310	0.2	310	0.1	400	<.1	663
	1978	0.2	232	330	0.1	330	0.1	377	<.1	498
	1979	0.1	241	310	0.1	310	0.1	435	0.1	553
	1980	0.2	240	303	0.5	303	0.1	494	0.1	614
	1981	0.1	256	329	0.2	329	0.1	393	0.1	450
Sheepshead	1975	0.0		266	0.8	266	0.9	320	0.2	341
	1976	<.1		233	0.5	233	0.3	271	0.1	370
	1977	0.0		234	0.2	234	0.2	268	0.1	335
	1978	0.0		268	0.3	268	0.2	322	0.1	348
	1979	0.0		282	0.1	282	0.4	309	0.2	351
	1980	<.1	360	246	0.1	246	0.2	293	0.2	356
	1981	<.1	262	288	<.1	288	0.1	315	0.1	365

Table 7. (Cont'd).

Species	Year	Mesh size											
		7.6-cm		10.2-cm		12.7-cm		15.2-cm					
		No./h	Length	No./h	Length	No./h	Length	No./h	Length	No./h	Length	No./h	Length
Southern flounder	1975	0.0		<.1	280	0.1	280	0.1	280	0.0		0.0	
	1976	<.1	268	0.1	304	<.1	341	<.1	341	0.0		0.0	
	1977	<.1	250	<.1	311	<.1	355	<.1	355	0.1		0.1	397
	1978	<.1	215	0.0		0.1	375	0.1	375	<.1		<.1	397
	1979	<.1	281	<.1	336	<.1	380	<.1	380	<.1		<.1	353
	1980	<.1	228	<.1	336	<.1		<.1		0.1		0.1	453
	1981	<.1	291	<.1	321	<.1	399	<.1	399	<.1		<.1	398
Atlantic croaker	1975	0.1	280	0.2	358	0.0		0.0		0.0		0.0	
	1976	0.2	291	0.1	368	0.0		0.0		0.0		0.0	
	1977	0.4	266	0.5	336	<.1	377	<.1	377	0.0		0.0	
	1978	0.4	285	0.2	57	0.0		0.0		0.0		0.0	
	1979	0.1	274	0.1	337	<.1	382	<.1	382	0.0		0.0	
	1980	0.1	269	0.1	347	<.1	355	<.1	355	<.1		<.1	
	1981	0.3	285	0.2	350	0.1	379	0.1	379	<.1		<.1	364

Table 8. Mean catch rates (No./h) and mean total lengths (mm) by mesh size for selected fishes caught with gill nets during fall in the Corpus Christi Bay system during 1975-1981 (Blank indicates no measurement taken).

Species	Year	Mesh size							
		7.6-cm No./h	Length	10.2-cm No./h	Length	12.7-cm No./h	Length	15.2-cm No./h	Length
Red drum	1975	0.3	328	0.1	344	<.1	370	<.1	290
	1976	0.2	357	0.1	486	0.2	544	<.1	638
	1977	0.2	328	0.2	455	0.1	561	0.1	546
	1978	0.2	346	0.1	427	0.1	590	<.1	600
	1979	0.6	328	0.1	398	<.1	587	<.1	673
	1980	0.6	327	0.1	480	<.1	554	<.1	540
	1981	0.3	337	0.1	432	0.1	508	<.1	494
	1975	0.2	388	0.2	497	0.1	606	<.1	680
	1976	0.4	367	0.1	443	<.1	418	<.1	645
1977	0.2	403	0.1	516	<.1	657	<.1	655	
1978	0.1	385	<.1	533	0.0		0.0		
1979	0.2	381	<.1	508	<.1	592	<.1	431	
1980	0.2	373	0.1	535	<.1	624	<.1	577	
1981	0.3	402	0.1	474	<.1	577	<.1	589	
Black drum	1975	<.1	232	0.1	311	0.2	387	0.1	445
	1976	<.1	220	0.1	329	0.2	374	<.1	488
	1977	<.1		0.1	317	0.1	398	0.1	479
	1978	<.1	358	0.1	343	<.1	386	<.1	427
	1979	0.1	222	0.1	308	0.1	393	<.1	504
	1980	0.1	243	0.1	337	0.3	383	0.1	438
	1981	0.1	241	0.2	321	0.1	391	0.1	473
	1975	0.0		0.0		<.1	390	0.1	373
	1976	0.0		0.0		<.1	306	<.1	371
1977	0.0		<.1	310	0.2	344	<.1	323	
1978	<.1	274	0.0		0.1	360	<.1	376	
1979	0.0		<.1	284	0.1	327	0.1	368	
1980	<.1	288	<.1	320	0.1	364	0.1	390	
1981	<.1	324	<.1	299	0.1	326	<.1	390	









Table 10. (Cont'd).

Species	Year	Mesh size					
		7.6-cm No./h Length	10.2-cm No./h Length	12.7-cm No./h Length	15.2-cm No./h Length		
Southern flounder	1975	<.1	278	0.1	355	<.1	462
	1976	0.0	362	<.1	393	<.1	419
	1977	0.0		<.1	330	<.1	
	1978	0.0	281	<.1	352	0.0	
	1979	<.1	279	<.1	361	0.1	421
	1980	<.1	628	0.1	374	<.1	446
	1981	<.1	338	<.1	397	<.1	410
Atlantic croaker	1975	<.1	351	0.0		0.0	
	1976	0.1	345	<.1	377	0.0	
	1977	0.1	355	0.0		<.1	371
	1978	<.1	377	0.0		0.0	
	1979	<.1	342	<.1	422	0.0	
	1980	0.2	366	<.1	406	0.0	
	1981	0.3	347	<.1	375	<.1	276



Table 11. Mean catch rates (No./h) and mean total lengths (mm) by mesh size for selected fishes caught with gill nets during spring in the Galveston Bay system during 1976-1982 (Blank indicates no measurement taken).

Species	Year	Mesh size									
		7.6-cm		10.2-cm		12.7-cm		15.2-cm			
		No./h	Length	No./h	Length	No./h	Length	No./h	Length		
Red drum	1976	<.1	310	0.0		0.0		0.0		0.0	
	1977	0.1	401	0.1	451	0.1	556	0.0		0.0	
	1978	<.1	246	0.1	468	0.0					
	1979	0.1	345	0.1	479	0.1	548	0.1	693	0.0	
	1980	0.1	445	0.7	446	<.1	518	0.0		0.0	
	1981	0.2	386	0.1	451	<.1	518	<.1	611	<.1	
	1982	0.3	434	0.4	459	0.1	537	0.1	605	0.1	
Spotted seatrout	1976	0.0		0.1	530	0.1		0.0		0.0	
	1977	<.1	352	0.1	515	<.1	576	<.1	727	<.1	
	1978	<.1	431	0.1	451	0.1	616	0.1	674	0.1	
	1979	0.1	379	0.1	475	0.1	653	0.1	639	0.1	
	1980	0.1	420	0.1	408	0.0		0.0		0.0	
	1981	0.2	435	0.1	537	<.1	596	<.1		0.0	
	1982	0.2	415	0.2	512	0.1	605	0.1	542	<.1	
Black drum	1976	0.1	250	0.0		<.1	370	<.1		0.0	
	1977	0.1	223	<.1	571	0.2	397	0.1	522	0.1	
	1978	0.1	371	<.1	473	0.1	461	0.1	461	0.1	
	1979	0.2	239	<.1	265	<.1	385	0.1	458	0.1	
	1980	0.2	225	<.1	430	0.1	370	0.1	415	<.1	
	1981	0.2	244	0.1	329	0.4	512	0.4	445	<.1	
	1982	0.2	240	0.1	393	0.1	403	0.1	479	0.1	
Sheepshead	1976	0.0		0.0		0.0		0.0		0.0	
	1977	<.1	197	0.0		0.0		0.0	480	<.1	
	1978	0.0		0.0		0.0		0.0		0.0	
	1979	0.0		<.1	250	0.0		0.0		<.1	
	1980	0.0		0.0		<.1	324	<.1	360	<.1	
	1981	0.0		<.1	377	<.1	380	<.1	410	<.1	
	1982	0.0		<.1	292	<.1	314	<.1	422	<.1	

Table 11. (Cont'd).

Species	Year	Mesh size							
		7.6-cm No./h	Length	10.2-cm No./h	Length	12.7-cm No./h	Length	15.2-cm No./h	Length
Southern flounder	1976	0.0		0.0		0.0		0.0	
	1977	0.0		0.0		<.1	351	0.0	
	1978	<.1	205	<.1	293	0.0		0.0	
	1979	0.0		0.0		0.0		<.1	451
	1980	<.1	218	<.1	312	<.1	392	<.1	484
	1981	<.1	244	0.0		0.0		0.0	
1982	<.1	371	<.1	315	<.1	340	<.1	388	
Atlantic croaker	1976	0.1	247	0.1	375	0.0		0.0	
	1977	0.3	262	<.1	297	<.1	276	0.0	
	1978	0.1	252	0.0		0.0		0.0	
	1979	0.2	265	0.0		<.1	164	0.0	
	1980	0.1	268	0.0		0.0		0.0	
	1981	0.1	262	0.0		0.0		<.1	246
1982	0.2	267	<.1	258	<.1		0.0		

Table 12. Mean catch rates (No./h) and mean total lengths (mm) by mesh size for selected fishes caught with gill nets during spring in the East Matagorda Bay system during 1976-1982 (Blank indicates no measurement taken).

Species	Year	Mesh size									
		7.6-cm		10.2-cm		12.7-cm		15.2-cm			
		No./h	Length	No./h	Length	No./h	Length	No./h	Length		
Red drum	1976										
	1977	0.1	374	0.1	462	0.0		0.0		0.0	
	1978	0.2	400	0.1	455	<.1	414	<.1		<.1	536
	1979	0.1	428	<.1	406	0.0		0.0		<.1	655
	1980	0.1	418	0.2	436	0.1	392	0.1		0.1	634
	1981	0.1	422	0.2	479	0.0		0.0		0.0	
1982	0.1	420	0.3	433	0.0		0.0		<.1	687	
Spotted seatrout	1976										
	1977	1.3	394	0.5	491	0.1	576	0.1		<.1	695
	1978	0.3	414	0.1	474	<.1	632	<.1		0.0	
	1979	0.3	386	0.2	479	<.1	628	<.1		<.1	375
	1980	0.6	377	0.1	506	<.1	488	<.1		<.1	
	1981	1.4	395	0.4	489	<.1	494	<.1		<.1	470
1982	0.6	414	0.3	509	0.1	544	0.1		0.0		
Black drum	1976										
	1977	0.2	217	0.1	296	<.1	376	<.1		0.0	
	1978	0.1	315	0.1	297	0.1	372	0.1		0.1	457
	1979	0.1	246	0.4	302	0.1	369	0.1		0.1	428
	1980	0.7	231	0.2	310	0.1	406	0.1		<.1	485
	1981	0.3	242	0.3	308	0.2	417	0.2		<.1	450
1982	0.3	232	0.3	291	0.1	401	0.1		0.1	459	
Sheepshead	1976										
	1977	0.0		0.0	291	<.1	234	<.1		0.0	341
	1978	0.0		0.1		0.3	295	0.3		<.1	297
	1979	0.0		0.0		0.1	297	0.1		<.1	375
	1980	0.0		<.1	239	0.2	342	0.2		0.1	400
	1981	0.0		0.1	235	<.1	347	<.1		0.1	
1982	0.0		0.0		0.0		0.0		0.0		



Table 13. Mean catch rates (No./h) and mean total lengths (mm) by mesh size for selected fishes caught with gill nets during spring in the Matagorda Bay system during 1976-1982 (Blank indicates no measurement taken).

Species	Year	Mesh size							
		7.6-cm		10.2-cm		12.7-cm		15.2-cm	
		No./h	Length	No./h	Length	No./h	Length	No./h	Length
Red drum	1976	0.2	396	0.2	428	<.1	600	<.1	390
	1977	<.1	423	0.1	476	0.0		0.0	
	1978	0.1	418	0.2	442	0.1	550	0.1	589
	1979	0.1	404	<.1	434	<.1	360	<.1	457
	1980	0.8	378	0.2	402	0.1	431	0.0	
	1981	0.2	407	<.1	422	0.0		0.0	
	1982	0.3	406	0.2	423	<.1	565	<.1	604
Spotted seatrout	1976	0.1	422	0.0		0.0		0.0	
	1977	0.2	380	0.0		0.0		0.0	
	1978	0.4	373	0.2	494	0.0		0.0	
	1979	0.1	420	0.1	531	<.1	631	0.0	
	1980	0.4	384	0.2	495	<.1	531	0.0	
	1981	0.3	387	<.1	524	0.0		0.0	
	1982	0.2	403	0.2	486	0.1	571	<.1	527
Black drum	1976	<.1	218	<.1	270	0.0		0.0	
	1977	0.1	241	0.1	533	0.2	663	0.1	468
	1978	0.1	220	0.1	298	<.1	388	<.1	521
	1979	0.2	236	0.2	390	0.1	647	<.1	498
	1980	0.4	270	0.2	328	0.1	611	<.1	459
	1981	0.2	227	0.1	301	<.1	673	<.1	780
	1982	0.2	262	0.1	348	0.1	431	<.1	640
									504
Sheepshead	1976	0.0		0.0		0.0		<.1	420
	1977	0.0		<.1	242	<.1	292	<.1	329
	1978	0.0		<.1	278	0.0		0.0	
	1979	0.0		0.0		<.1	362	<.1	420
	1980	0.0		<.1	242	0.1	348	<.1	389
	1981	<.1	370	<.1	536	0.0		<.1	
	1982	0.0	221	<.1	276	<.1	314	0.0	381

Table 13. (Cont'd).

Species	Year	Mesh size											
		7.6-cm		10.2-cm		12.7-cm		15.2-cm					
		No./h	Length	No./h	Length	No./h	Length	No./h	Length	No./h	Length	No./h	Length
Southern flounder	1976	0.0		0.0		0.0		0.0		0.0		0.0	
	1977	0.0		<.1	265	<.1		<.1	391	<.1		0.0	
	1978	0.0		0.0		<.1		<.1	346	<.1		0.0	315
	1979	0.0		<.1	294	<.1		<.1		<.1		0.0	
	1980	0.0		<.1	276	<.1		<.1	339	<.1		0.0	
	1981	0.0		<.1	270	0.0		0.0		0.0		0.0	
	1982	<.1	310	<.1	291	<.1		<.1	316	<.1		<.1	335
Atlantic croaker	1976	0.0		0.0		0.0		0.0		0.0		<.1	
	1977	0.0		0.0		0.0		0.0		0.0		0.0	
	1978	<.1		0.0		0.0		0.0		0.0		0.0	
	1979	<.1	293	0.0		0.0		0.0		0.0		0.0	
	1980	0.0	264	0.0		0.0		0.0		0.0		0.0	
	1981	<.1	276	0.0		0.0		0.0		0.0		0.0	
	1982	<.1	270	0.0		0.0		0.0		0.0		0.0	

Table 14. Mean catch rates (No./h) and mean total lengths (mm) by mesh size for selected fishes caught with gill nets during spring in the San Antonio Bay system during 1976-1982 (Blank indicates no measurement taken).

Species	Year	Mesh size							
		7.6-cm		10.2-cm		12.7-cm		15.2-cm	
		No./h	Length	No./h	Length	No./h	Length	No./h	Length
Red drum	1976	0.7	414	0.3	400	0.0		0.0	
	1977	0.2	367	0.1	422	0.0		0.0	
	1978	0.1	395	<.1	428	0.0		0.0	
	1979	0.1	397	0.1	465	<.1	449	0.0	
	1980	0.4	384	0.3	422	<.1	448	0.0	
	1981	0.5	383	<.1	407	<.1	519	0.0	
	1982	0.2	391	0.1	431	<.1	457	<.1	615
Spotted seatrout	1976	0.1		0.3	382	0.1		0.0	
	1977	0.8	382	0.1	431	<.1	670	0.0	
	1978	1.1	391	0.2	484	<.1	473	0.0	
	1979	0.1	443	0.0		0.0		0.0	
	1980	0.7	377	0.2	501	<.1	365	<.1	612
	1981	0.3	390	0.2	528	0.1	507	<.1	404
	1982	0.6	400	0.2	508	<.1	551	<.1	384
Black drum	1976	0.8	300	0.2	335	0.0		0.0	
	1977	0.2	238	0.6	306	0.1	475	0.0	
	1978	<.1	273	<.1	292	0.0		<.1	496
	1979	<.1	307	0.0		<.1	386	<.1	578
	1980	0.3	236	0.1	299	<.1	373	<.1	470
	1981	<.1	251	0.2	314	0.1	407	<.1	497
	1982	0.3	240	0.2	334	0.1	420	0.1	495
Sheepshead	1976	0.2	302	0.0		0.2	380	0.0	
	1977	0.0		0.0		0.1	295	<.1	386
	1978	0.0		<.1	280	<.1	350	<.1	323
	1979	0.0		0.0		<.1	402	0.0	
	1980	<.1	234	<.1	253	<.1	387	<.1	448
	1981	0.0		0.1	246	0.3	309	0.2	394
	1982	<.1	295	<.1	295	<.1	339	0.1	395

Table 14. (Cont'd).

Species	Year	Mesh size			
		7.6-cm No./h Length	10.2-cm No./h Length	12.7-cm No./h Length	15.2-cm No./h Length
Southern flounder	1976	0.0	0.1	0.0	0.0
	1977	<.1	0.0	0.0	0.0
	1978	208	335		
	1979	236	303	311	
	1980	350		374	422
	1981	325	310	324	
	1982	281	322		
		225	276	339	369
Atlantic croaker	1976	0.2	0.0	0.0	0.0
	1977	<.1	0.0	0.0	0.0
	1978	238			
	1979	250			
	1980	0.0	0.0	0.0	0.0
	1981	<.1	0.0	0.0	0.0
	1982	0.0	0.0	0.0	0.0
		<.1	<.1	0.0	0.0



Table 15. Mean catch rates (No./h) and mean total lengths (mm) by mesh size for selected fishes caught with gill nets during spring in the Aransas Bay system during 1976-1982 (Blank indicates no measurement taken).

Species	Year	Mesh size							
		7.6-cm		10.2-cm		12.7-cm		15.2-cm	
		No./h	Length	No./h	Length	No./h	Length	No./h	Length
Red drum	1976	0.2	394	0.6	458	0.1	600	0.1	362
	1977	0.3	363	0.1	480	0.1	475	0.0	
	1978	<.1	403	<.1	464	0.1	468	0.0	
	1979	0.3	402	0.1	413	<.1	505	<.1	443
	1980	0.3	353	<.1	471	<.1	443	<.1	394
	1981	0.3	369	<.1	453	0.1	488	<.1	458
	1982	0.3	400	0.1	527	<.1	522	<.1	631
Spotted seatrout	1976	1.8	410	0.7	527	0.4	585	0.4	480
	1977	0.8	372	0.1	506	0.1	615	0.0	
	1978	0.1	381	<.1	502	<.1	578	0.0	
	1979	0.2	445	0.2	543	<.1	600	<.1	606
	1980	0.1	399	0.1	517	<.1	619	0.0	690
	1981	0.5	414	0.2	533	0.1	535	<.1	456
	1982	0.5	400	0.2	494	0.1	388	<.1	
Black drum	1976	0.0		0.1	320	0.6	388	0.2	428
	1977	0.2	223	0.8	305	0.2	390	0.1	454
	1978	0.1	228	0.2	348	0.1	396	0.1	440
	1979	0.1	228	0.1	310	0.2	366	<.1	457
	1980	0.3	233	0.3	309	0.2	413	0.1	447
	1981	0.3	259	0.3	361	0.1	482	0.1	491
	1982	0.5	246	0.4	314	0.1	418	<.1	493
Sheepshead	1976	0.0		0.0		0.1	281	0.5	352
	1977	0.0		<.1	230	<.1	235	0.0	
	1978	0.0		0.1	264	<.1	343	0.1	448
	1979	0.0		<.1		0.1	317	0.1	323
	1980	<.1	265	<.1	249	<.1	374	0.1	377
	1981	<.1	224	0.1	324	0.1	305	0.1	399
	1982	<.1	182	<.1	301	<.1	337	<.1	362

Table 15. (Cont'd).

Species	Year	Mesh size							
		7.6-cm No./h	Length	10.2-cm No./h	Length	12.7-cm No./h	Length	15.2-cm No./h	Length
Southern flounder	1976	0.0		0.0		0.0		0.0	
	1977	0.0		<.1	282	0.1		0.0	383
	1978	0.0		<.1	338	0.0		0.0	
	1979	0.0		<.1	281	0.0		0.0	
	1980	<.1	263	<.1	307	<.1		<.1	312
	1981	0.0		0.0		<.1		<.1	363
1982	<.1	266	<.1	292	<.1		<.1	346	
Atlantic croaker	1976	0.0		0.0		0.0		0.0	
	1977	<.1	285	0.0		0.0		0.0	
	1978	<.1	248	0.0		0.0		0.0	
	1979	0.0		0.0		0.0		0.0	
	1980	<.1	240	0.0		0.0		0.0	
	1981	<.1	274	<.1	320	<.1		<.1	310
1982	<.1	264	0.0		0.0		0.0		





Table 17. Mean catch rates (No./h) and mean total lengths (mm) by mesh size for selected fishes caught with gill nets during spring in the upper Laguna Madre system during 1976-1982 (Blank indicates no measurement taken).

Species	Year	Mesh size							
		7.6-cm		10.2-cm		12.7-cm		15.2-cm	
		No./h	Length	No./h	Length	No./h	Length	No./h	Length
Red drum	1976	0.0		0.2		0.0		0.0	
	1977	0.0		0.1	414	<.1	535	0.0	
	1978	<.1	442	0.2	454	<.1	610	<.1	671
	1979	<.1	481	0.2	475	0.0		0.0	
	1980	0.4	384	0.4	446	<.1	423	<.1	434
	1981	0.2	385	0.2	421	<.1	620	0.0	
	1982	<.1	431	0.2	448	0.1	559	<.1	595
Spotted seatrout	1976	0.0		0.0		0.0		0.0	
	1977	0.8	379	0.4	517	0.1	682	<.1	683
	1978	0.6	456	0.2	502	<.1	665	<.1	670
	1979	0.3	403	0.1	528	<.1	586	<.1	369
	1980	0.3	421	0.1	516	<.1	629	<.1	613
	1981	0.3	411	0.1	402	0.1	542	<.1	347
	1982	0.4	408	0.2	529	0.1	577	<.1	578
Black drum	1976	0.0		0.6		0.4		0.1	
	1977	0.0		0.1	305	0.2	386	0.1	473
	1978	0.0		<.1	294	<.1	376	0.1	454
	1979	0.0		0.1	299	0.1	418	0.1	478
	1980	<.1	346	0.3	333	0.3	407	0.1	477
	1981	<.1	295	0.2	347	0.6	388	0.3	441
	1982	<.1	250	0.4	306	0.1	425	0.2	476
Sheepshead	1976	0.0		0.0		0.3		0.3	
	1977	0.0		0.0		<.1	336	0.1	387
	1978	0.0		0.0		0.1	366	0.1	416
	1979	0.0		0.0		<.1	360	0.1	375
	1980	0.0		<.1	352	0.1	361	0.1	378
	1981	0.0		<.1	314	<.1	350	0.1	428
	1982	0.0		<.1	327	0.1	351	0.1	373

Table 17. (Cont'd).

Species	Year	Mesh size							
		7.6-cm		10.2-cm		12.7-cm		15.2-cm	
		No./h	Length	No./h	Length	No./h	Length	No./h	Length
Southern flounder	1976	0.0		0.0		0.0		0.0	
	1977	0.0		0.0		0.0		0.0	
	1978	<.1	237	<.1	366	0.0		<.1	411
	1979	<.1	216	<.1	351	0.0		<.1	410
	1980	<.1	230	<.1	262	0.0		<.1	477
	1981	<.1	222	0.1	345	<.1	383	<.1	
	1982	<.1	229	<.1	325	<.1	369	<.1	397
	1982	0.0		0.0		0.0		0.0	
Atlantic croaker	1976	0.0		0.0		0.0		0.0	
	1977	0.2	277	0.2	326	0.0		0.0	
	1978	0.1	261	<.1	325	0.0		0.0	
	1979	0.1	286	0.1	314	0.0		0.0	
	1980	0.2	303	0.1	334	0.0		0.0	
	1981	0.2	280	0.2	322	<.1	280	<.1	290
	1982	0.1	295	0.1	331	<.1	336	<.1	
	1982	0.0		0.0		0.0		0.0	







Table 18. (Cont'd).

Species	Year	Mesh size							
		7.6-cm		10.2-cm		12.7-cm		15.2-cm	
		No./h	Length	No./h	Length	No./h	Length	No./h	Length
Southern flounder	1976	0.0		0.0		0.2	350	0.0	
	1977	0.0		0.0		<.1	323	<.1	388
	1978	<.1	216	<.1	363	<.1	335	<.1	467
	1979	<.1	351	0.1	307	0.1	385	<.1	456
	1980	<.1	325	<.1	346	<.1	361	<.1	518
	1981	<.1	270	<.1	287	<.1	402	<.1	418
	1982	<.1	310	0.1	321	<.1	360	<.1	445
Atlantic croaker	1976	0.2	285	0.5	345	0.1	360	0.0	
	1977	0.2	267	<.1	300	0.0		0.0	
	1978	0.1	273	0.0		0.0		0.0	
	1979	0.1	263	0.1	344	<.1	412	0.0	
	1980	0.1	277	<.1	354	0.0		0.0	
	1981	0.1	277	0.0		0.0		0.0	
	1982	0.2	300	0.2	367	<.1	423	0.0	
								<.1	343

Table 19. Mean catch rates (No./h) and mean total lengths (mm) by mesh size of selected fishes caught with gill nets in the Galveston Bay system during December 1981-March 1982 (Blank indicates no measurement taken).

Species	Month and Year	Mesh size				All meshes					
		7.6-cm	10.2-cm	12.7-cm	15.2-cm						
		No./h	Length	No./h	Length	No./h	Length	No./h	Length	No./h	Length
Red drum	Dec 1981	0.6	385	0.1	478	0.1	553	<.1	628	0.8	444
	Jan 1982	0.3	425	0.2	449	0.6	553	0.3	613	1.4	521
	Feb 1982	0.2	374	0.4	427	0.2	538	0.1	598	0.9	458
	Mar 1982	0.3	396	0.4	436	0.1	540	<.1	651	0.8	440
Spotted seatrout	Dec 1981	0.3	454	0.1	527	0.1	570	0.0		0.5	501
	Jan 1982	<.1	355	0.0		0.0		<.1	598	<.1	476
	Feb 1982	0.1	416	0.2	498	<.1	629	<.1	560	0.3	488
	Mar 1982	0.2	402	0.2	551	0.2	576	0.0		0.6	515
Black drum	Dec 1981	0.1	278	0.4	310	0.1	392	<.1	450	0.6	320
	Jan 1982	0.0		0.2	291	0.1	385	<.1	491	0.3	339
	Feb 1982	<.1	200	0.2	328	0.2	356	<.1	414	0.4	332
	Mar 1982	0.3	216	0.1	326	<.1	459	<.1	448	0.4	247
Sheepshead	Dec 1981	0.0		0.0		<.1	242	0.1	366	0.1	331
	Jan 1982	0.0		0.0		0.0		0.0		0.0	
	Feb 1982	0.0		<.1	442	<.1	326	0.1	361	0.1	362
	Mar 1982	0.0		0.0		<.1	297	0.0		<.1	297
Southern flounder	Dec 1981	0.0		<.1	306	0.0		<.1	293	0.1	302
	Jan 1982	0.0		<.1	419	<.1	325	0.0		<.1	372
	Feb 1982	0.0		<.1	284	0.0		0.0		<.1	284
	Mar 1982	0.0		<.1	382	0.1	374	0.0		<.1	377
Atlantic croaker	Dec 1981	0.1	265	0.0		0.0		0.0		0.1	265
	Jan 1982	<.1	278	0.0		0.0		0.0		<.1	278
	Feb 1982	0.0		0.0		0.0		0.0		0.0	
	Mar 1982	<.1	285	0.0		0.0		0.0		<.1	285

Table 20. Mean catch rates (No./h) and mean total lengths (mm) by mesh size of selected fishes caught with gill nets in the East Matagorda Bay system during December 1981-March 1982 (Blank indicates no measurement taken).

Species	Month and Year	Mesh size												All meshes	
		7.6-cm			10.2-cm			12.7-cm			15.2-cm			No./h	Length
		No./h	Length	No./h	Length	No./h	Length	No./h	Length	No./h	Length				
Red drum	Dec 1981	0.5	405	0.4	429	<.1	490	<.1	490	0.0	633	0.9	432		
	Jan 1982	0.1	379	0.4	431	<.1	539	<.1	539	0.1	633	0.6	458		
	Feb 1982	0.2	367	0.1	440	0.2	561	0.1	561	0.1	645	0.6	459		
	Mar 1982	0.1	422	0.1	416	0.1	530	<.1	530	<.1	612	0.3	476		
Spotted seatrout	Dec 1981	0.1	415	0.1	497	<.1	630	<.1	630	<.1	610	0.2	532		
	Jan 1982	<.1	375	0.1	459	0.0	459	<.1	459	<.1	430	0.1	436		
	Feb 1982	<.1	385	0.1	468	0.0	468	<.1	468	<.1	544	0.1	447		
	Mar 1982	0.2	438	0.2	497	<.1	586	<.1	586	0.0	467	0.4	467		
Black drum	Dec 1981	<.1	207	0.3	305	0.3	406	0.3	406	0.1	440	0.7	380		
	Jan 1982	0.1	222	0.1	317	0.1	367	0.1	367	0.1	448	0.4	350		
	Feb 1982	0.1	233	0.6	328	0.4	378	0.4	378	0.2	437	1.3	358		
	Mar 1982	<.1	219	<.1	382	<.1	407	<.1	407	<.1	468	0.2	364		
Sheepshead	Dec 1981	<.1	456	<.1	286	0.1	273	0.1	273	<.1	361	0.2	321		
	Jan 1982	0.0		<.1	290	<.1	290	<.1	290	<.1	514	0.1	365		
	Feb 1982	0.0		0.0		0.0		0.0		0.0		0.0			
	Mar 1982	0.0		0.0		0.0		0.0		0.0		0.0			
Southern flounder	Dec 1981	0.0		<.1		<.1	390	<.1	390	<.1	448	0.1	409		
	Jan 1982	<.1	240	<.1	254	<.1	355	<.1	355	<.1	400	0.1	305		
	Feb 1982	0.0		0.0		<.1	363	<.1	363	0.0	412	<.1	363		
	Mar 1982	<.1	300	0.0		<.1	365	<.1	365	<.1	412	0.1	372		
Atlantic croaker	Dec 1981	<.1	259	0.0		0.0		0.0		0.0		<.1	259		
	Jan 1982	0.0		0.0		0.0		0.0		0.0		0.0			
	Feb 1982	0.0		0.0		0.0		0.0		0.0		0.0			
	Mar 1982	0.0		0.0		0.0		0.0		0.0		0.0			

Table 21. Mean catch rates (No./h) and mean total lengths (mm) by mesh size of selected fishes caught with gill nets in the Matagorda Bay system during December 1981-March 1982 (Blank indicates no measurement taken).

Species	Month and Year	Mesh size				All meshes					
		7.6-cm	10.2-cm	12.7-cm	15.2-cm						
		No./h	Length	No./h	Length	No./h	Length	No./h	Length		
Red drum	Dec 1981	0.9	335	<.1	406	0.0		0.0		0.9	338
	Jan 1982	0.9	358	0.2	444	<.1	541	0.1	584	1.2	392
	Feb 1982	3.2	362	1.0	441	0.3	555	0.1	596	4.6	442
	Mar 1982	0.3	381	0.1	375	<.1	449	0.1	559	0.5	409
Spotted seatrout	Dec 1981	0.4	409	0.1	507	0.0		0.0		0.5	424
	Jan 1982	0.3	416	0.1	550	<.1	591	0.0		0.4	457
	Feb 1982	0.2	381	<.1	487	0.0		0.0		0.2	398
	Mar 1982	0.2	383	<.1	535	0.0		0.0		0.2	383
Black drum	Dec 1981	0.1	229	<.1	444	0.1	353	0.0		0.2	317
	Jan 1982	0.2	224	0.1	300	0.3	380	0.1	449	0.7	335
	Feb 1982	0.1	225	0.2	362	0.1	407	<.1	501	0.4	374
	Mar 1982	0.1	220	<.1	412	0.1	396	<.1	548	0.2	345
Sheepshead	Dec 1981	0.0		0.0		<.1	373	0.0		<.1	373
	Jan 1982	0.0		0.0		0.0		0.0		0.0	
	Feb 1982	0.0		0.0		<.1	406	0.0		<.1	406
	Mar 1982	<.1	240	0.0		<.1	362	0.1	384	0.2	361
Southern flounder	Dec 1981	<.1	390	0.0		<.1	328	0.0		0.1	349
	Jan 1982	0.0		0.0		0.0		0.0		0.0	
	Feb 1982	0.0		0.0		<.1	377	<.1	390	0.1	380
	Mar 1982	0.0		0.0		0.0		0.0		0.0	
Atlantic croaker	Dec 1981	<.1	297	0.0		0.0		0.0		<.1	297
	Jan 1982	0.0		<.1	346	0.0		0.0		<.1	346
	Feb 1982	0.0		0.0		0.0		0.0		0.0	
	Mar 1982	0.0		0.0		0.0		0.0		0.0	

Table 22. Mean catch rates (No./h) and mean total lengths (mm) by mesh size of selected fishes caught with gill nets in the San Antonio Bay system during December 1981-March 1982 (Blank indicates no measurement taken).

Species	Month and Year	Mesh size											
		7.6-cm		10.2-cm		12.7-cm		15.2-cm		All meshes			
		No./h	Length	No./h	Length	No./h	Length	No./h	Length	No./h	Length		
Red drum	Dec 1981	1.0	362	0.4	419	0.1	534	0.1	549	1.6	400		
	Jan 1982	0.1	343	0.2	424	<.1	593	0.1	500	0.4	442		
	Feb 1982	0.3	388	0.3	412	<.1	531	0.0		0.6	406		
	Mar 1982	0.6	377	<.1	432	0.0		0.0		0.6	383		
Spotted seatrout	Dec 1981	<.1	382	0.1	476	<.1	602	<.1	474	0.2	483		
	Jan 1982	0.0		<.1	512	0.0		<.1	567	0.1	531		
	Feb 1982	0.2	366	0.1	496	0.0		0.0		0.3	379		
	Mar 1982	0.4	405	<.1	548	0.0		0.0		0.4	416		
Black drum	Dec 1981	0.1	222	0.3	333	0.3	382	0.1	449	0.8	372		
	Jan 1982	0.0		<.1	660	0.2	492	<.1	491	0.2	530		
	Feb 1982	0.1	232	0.2	306	<.1	375	<.1	494	0.3	304		
	Mar 1982	0.2	253	<.1	614	0.0		<.1	950	0.2	442		
Sheepshead	Dec 1981	0.0		<.1	220	0.2	357	0.2	390	0.4	368		
	Jan 1982	0.0		0.0		<.1	503	<.1	393	0.1	430		
	Feb 1982	0.0		<.1	283	<.1	325	0.0		0.1	308		
	Mar 1982	0.0		0.0		0.0		0.0		0.0			
Southern flounder	Dec 1981	<.1		0.0		<.1	341	<.1	372	0.1	357		
	Jan 1982	0.0		0.0		<.1	366	<.1	381	0.1	371		
	Feb 1982	0.0		0.0		0.0		0.0		0.0			
	Mar 1982	0.0		<.1	264	0.0		0.0		<.1	264		
Atlantic croaker	Dec 1981	0.0		0.0		0.0		0.0		0.0			
	Jan 1982	0.0		0.0		0.0		0.0		0.0			
	Feb 1982	0.0		0.0		0.0		0.0		0.0			
	Mar 1982	0.0		0.0		0.0		0.0		0.0			

Table 23. Mean catch rates (No./h) and mean total lengths (mm) by mesh size of selected fishes caught with gill nets in the Aransas Bay system during December 1981-March 1982 (Blank indicates no measurement taken).

Species	Month and Year	Mesh size				All meshes					
		7.6-cm	10.2-cm	12.7-cm	15.2-cm						
		No./h	Length	No./h	Length	No./h	Length	No./h	Length		
Red drum	Dec 1981	0.4	343	<.1	448	<.1	510	0.0	639	0.4	351
	Jan 1982	<.1	395	0.5	528	0.7	611	0.3	639	1.5	585
	Feb 1982	0.5	367	0.3	417	0.2	508	<.1	588	1.0	422
	Mar 1982	0.3	372	0.1	431	0.1	576	0.1	534	0.6	461
Spotted seatrout	Dec 1981	0.2	389	<.1	482	0.0	482	0.0		0.2	416
	Jan 1982	0.1	371	0.1	501	0.0	501	0.0		0.2	430
	Feb 1982	0.1	438	0.1	527	0.2	551	<.1	543	0.4	506
	Mar 1982	0.2	398	0.1	553	0.0		0.0		0.3	450
Black drum	Dec 1981	0.6	229	0.1	316	0.1	462	<.1	698	0.8	294
	Jan 1982	<.1	224	0.1	288	<.1	472	<.1	418	0.2	354
	Feb 1982	0.6	239	1.0	314	0.6	366	0.3	435	2.5	329
	Mar 1982	0.1	230	0.2	313	0.1	371	0.2	421	0.6	367
Sheepshead	Dec 1981	0.0		<.1	235	<.1	345	0.0		<.1	290
	Jan 1982	0.0		<.1	313	0.6	308	0.2	319	0.8	313
	Feb 1982	<.1	230	0.0		0.0	317	<.1	410	<.1	320
	Mar 1982	0.0		0.0	273	<.1		<.1	328	0.1	322
Southern flounder	Dec 1981	<.1	235	0.0		0.0		0.0		<.1	235
	Jan 1982	0.0		<.1	332	<.1	375	0.0		0.1	347
	Feb 1982	0.0		<.1	313	<.1	302	0.0	365	0.1	310
	Mar 1982	0.0		<.1	273	0.1	341	<.1		0.1	332
Atlantic croaker	Dec 1981	0.0		0.0		0.0		0.0		0.0	
	Jan 1982	0.0		0.0		0.0		0.0		0.0	
	Feb 1982	0.0		0.0		0.0		0.0		0.0	
	Mar 1982	0.0		0.0		0.0		0.0		0.0	

Table 24. Mean catch rates (No./h) and mean total lengths (mm) by mesh size of selected fishes caught with gill nets in the Corpus Christi Bay system during December 1981-March 1982 (Blank indicates no measurement taken).

Species	Month and Year	Mesh size											
		7.6-cm		10.2-cm		12.7-cm		15.2-cm		All meshes			
		No./h	Length	No./h	Length	No./h	Length	No./h	Length	No./h	Length		
Red drum	Dec 1981	0.2	350	0.2	436	0.3	567	0.4	601	1.1	522		
	Jan 1982	0.2	372	<.1	456	<.1	641	<.1	551	0.2	435		
	Feb 1982	0.4	381	0.7	434	0.9	538	0.9	566	2.9	478		
	Mar 1982	0.1	402	0.1	484	0.2	507	<.1	540	0.4	468		
Spotted seatrout	Dec 1981	<.1	410	<.1	511	<.1	608	0.0		0.1	524		
	Jan 1982	1.1	383	0.1	472	<.1	644	0.0		1.2	419		
	Feb 1982	0.1	421	0.3	529	<.1	621	<.1	365	0.4	493		
	Mar 1982	0.2	397	0.1	508	0.1	580	0.0		0.4	477		
Black drum	Dec 1981	0.2	220	<.1	362	0.1	382	0.1	452	0.4	314		
	Jan 1982	<.1	232	0.1	322	<.1	394	<.1	509	0.1	332		
	Feb 1982	0.3	219	0.2	314	0.1	405	0.2	444	0.8	328		
	Mar 1982	0.1	223	0.1	562	0.2	631	0.2	604	0.6	536		
Sheepshead	Dec 1981	0.0		0.6	304	1.0	332	0.8	362	2.4	335		
	Jan 1982	0.0		0.0		0.0		<.1	448	<.1	448		
	Feb 1982	0.0		<.1	399	0.2	383	0.4	405	0.6	396		
	Mar 1982	0.0		0.0		<.1	346	<.1	319	0.1	328		
Southern flounder	Dec 1981	0.0		<.1	395	<.1	330	0.0		<.1	362		
	Jan 1982	0.0		<.1	338	0.0		0.0		<.1	338		
	Feb 1982	0.0		0.0		<.1	396	0.0		<.1	396		
	Mar 1982	0.0		0.0		0.0		<.1	388	<.1	388		
Atlantic croaker	Dec 1981	0.2	263	0.0		0.0		0.0		0.2	263		
	Jan 1982	0.0		0.0		0.0		0.0		0.0			
	Feb 1982	0.1	292	<.1	330	0.0		0.0		0.1	302		
	Mar 1982	0.0		<.1	395	0.0		0.0		<.1	395		

Table 25. Mean catch rates (No./h) and mean total lengths (mm) by mesh size of selected fishes caught with gill nets in the upper Laguna Madre system during December 1981-March 1982 (Blank indicates no measurement taken).

Species	Month and Year	Mesh size				All meshes					
		7.6-cm	10.2-cm	12.7-cm	15.2-cm						
		No./h	Length	No./h	Length	No./h	Length	No./h	Length		
Red drum	Dec 1981	<.1	421	0.2	423	0.2	506	<.1	640	0.4	470
	Jan 1982	0.0		<.1	417	0.1	540	0.1	608	0.2	542
	Feb 1982	<.1	335	0.1	486	0.1	579	0.4	604	0.6	566
	Mar 1982	0.0		0.2	449	0.2	574	0.1	568	0.5	521
Spotted seatrout	Dec 1981	0.1	401	0.2	496	<.1	572	0.0		0.3	468
	Jan 1982	<.1	484	0.1	490	<.1	638	0.0		0.2	514
	Feb 1982	0.2	387	0.1	524	<.1	590	<.1	670	0.3	441
	Mar 1982	0.1	399	0.2	528	0.1	589	<.1	497	0.4	502
Black drum	Dec 1981	0.2	233	0.1	346	0.1	400	0.1	463	0.5	336
	Jan 1982	0.0		<.1	740	<.1	509	0.3	532	0.4	539
	Feb 1982	<.1	248	0.1	324	0.4	425	0.5	444	1.0	421
	Mar 1982	0.0		0.1	303	0.2	439	0.4	448	0.7	422
Sheepshead	Dec 1981	0.0		0.0		<.1	370	<.1	350	0.1	360
	Jan 1982	0.0		0.0		0.0		0.1	408	0.1	408
	Feb 1982	0.0		0.0		0.0		0.0		0.0	
	Mar 1982	0.0		0.0		<.1	378	0.1	353	0.1	361
Southern flounder	Dec 1981	0.0		<.1	251	0.1	432	<.1	455	0.1	400
	Jan 1982	0.0		0.0		<.1	350	0.0		<.1	350
	Feb 1982	0.0		0.0		0.0		0.0		0.0	
	Mar 1982	0.0		<.1	303	<.1	336	<.1	370	0.1	336
Atlantic croaker	Dec 1981	<.1	263	0.0		0.0		0.0		<.1	263
	Jan 1982	0.0		0.0		0.0		0.0		0.0	
	Feb 1982	<.1	270	0.1	307	<.1	320	0.0		0.2	296
	Mar 1982	0.0		<.1	320	0.0		0.0		<.1	320



Table 26. Mean catch rates (No./h) and mean total lengths (mm) by mesh size of selected fishes caught with gill nets in the lower Laguna Madre system during December 1981-March 1982 (Blank indicates no measurement taken).

Species	Month and Year	Mesh size									
		7.6-cm		10.2-cm		12.7-cm		15.2-cm		All meshes	
		No./h	Length	No./h	Length	No./h	Length	No./h	Length	No./h	Length
Red drum	Dec 1981	<.1	386	0.3	465	0.2	550	0.5	662	1.0	579
	Jan 1982	0.1	476	0.6	443	0.2	562	0.1	599	1.0	494
	Feb 1982	0.1	392	0.6	449	0.3	553	0.2	624	1.2	502
	Mar 1982	<.1	418	0.6	455	0.2	554	0.1	631	0.9	493
Spotted seatrout	Dec 1981	<.1	376	<.1	683	0.1	611	0.0		0.2	578
	Jan 1982	0.2	412	0.4	518	0.2	598	0.1	605	0.9	526
	Feb 1982	0.5	409	0.7	521	0.7	614	0.2	680	2.1	537
	Mar 1982	1.1	406	0.5	480	0.3	621	0.1	644	2.0	484
Black drum	Dec 1981	0.2	225	0.0		0.1	464	0.1	454	0.4	358
	Jan 1982	0.1	226	0.1	351	0.2	416	0.3	465	0.7	418
	Feb 1982	0.3	238	0.4	437	1.1	402	0.8	475	2.6	407
	Mar 1982	0.1	234	0.1	387	0.2	394	0.3	448	0.7	389
Sheepshead	Dec 1981	0.0		0.0		<.1	360	0.1	340	0.1	346
	Jan 1982	0.0		<.1	337	<.1	319	0.0		0.1	326
	Feb 1982	0.0		0.1	278	0.3	323	0.3	353	0.7	329
	Mar 1982	0.0		0.2	248	0.4	315	0.5	357	1.1	332
Southern flounder	Dec 1981	0.0		<.1	355	0.2	378	0.0		0.2	376
	Jan 1982	0.0		0.0		0.1	365	<.1	395	0.1	371
	Feb 1982	<.1	542	<.1	295	0.0		0.0		0.1	357
	Mar 1982	0.0		<.1	256	<.1	386	<.1	376	0.1	339
Atlantic croaker	Dec 1981	0.5	269	<.1	324	0.0		0.0		0.5	274
	Jan 1982	<.1	420	0.1	422	0.0		0.0		0.1	422
	Feb 1982	0.0		0.0		0.0		0.0		0.0	
	Mar 1982	<.1		0.0		0.0		0.0		<.1	

Table 27. Annual mean catch rate (No./ha) and mean total lengths (mm) of selected fishes caught with bag seines in Texas bay systems during October-September 1977-1982 (Blank indicates no measurement taken).

Species	Year	Bay system															
		Galveston		Matagorda		San Antonio		Aransas		Corpus Christi		Upper Laguna Madre		Lower Laguna Madre		Coastwide	
		No./ha	Length	No./ha	Length	No./ha	Length	No./ha	Length	No./ha	Length	No./ha	Length	No./ha	Length	No./ha	Length
Red drum	1977-1978	9.85	50	3.57	102	29.52	55	5.97	72	1.44	99	4.03	87	1.46	66	8.08	62
	1978-1979	6.02	111	10.65	104	17.13	69	4.84	115	16.09	95	27.43	69	23.76	75	13.92	77
	1979-1980	70.09	77	5.32	131	8.33	178	5.93	81	13.03	83	10.42	55	23.21	61	24.13	80
	1980-1981	8.80	78	9.51	122	29.17	47	4.91	121	11.42	56	0.35	97	4.05	113	9.42	76
1981-1982	38.11	91	13.42	128	32.50	104	43.50	99	39.77	67	4.09	57	44.90	83	31.31	92	
Spotted seatrout	1977-1978	39.41	61	14.52	82	24.76	70	4.78	41	6.32	67	12.82	90	3.65	65	17.50	67
	1978-1979	38.89	77	4.86	89	5.09	76	4.56	62	10.06	48	15.62	81	1.97	132	13.89	77
	1979-1980	13.55	71	1.85	74	18.98	70	14.97	74	4.86	96	3.82	89	0.34	60	8.79	74
	1980-1981	13.89	74	5.10	110	11.11	72	5.78	71	20.06	65	5.90	63	3.47	96	9.18	75
1981-1982	10.56	83	3.72	128	19.44	66	16.23	69	3.62	84	2.50	83	4.00	78	8.87	77	
Black drum	1977-1978	30.54	92	10.24	126	22.38	161	4.78	206	1.44	123	4.03	105	0.00		12.52	119
	1978-1979	37.04	77	10.88	106	3.70	82	1.71	106	7.76	87	5.56	140	17.70	99	14.55	88
	1979-1980	8.88	133	9.95	145	1.15	131	2.54	102	2.83	83	3.47	130	0.68	142	4.92	132
	1980-1981	9.26	102	13.46	117	0.93	132	4.05	128	1.24	57	13.19	46	6.36	128	7.47	99
1981-1982	7.39	139	5.79	182	10.28	117	8.64	133	2.23	187	0.23	140	3.06	133	5.73	141	
Sheepshead	1977-1978	1.97	368	1.43	237	0.48	68	1.49	120	0.86	59	0.00		1.46	61	1.22	70
	1978-1979	15.74	95	1.16	183	6.02	60	4.56	188	12.36	40	0.69	122	0.98	109	6.49	94
	1979-1980	2.34	124	1.62	187	1.85	127	2.54	165	0.28	84	0.00		1.02	62	1.54	138
	1980-1981	1.85	270	2.32	123	0.93	213	1.16	227	1.54	166	0.00		2.02	152	1.48	193
1981-1982	3.69	301	0.99	226	3.33	133	0.69	174	2.23	349	0.00		0.14	122	1.72	251	
Southern flounder	1977-1978	7.39	63	0.71	143	3.33	36	0.60	228	0.57	44	0.37	127	1.09	45	2.52	67
	1978-1979	2.31	240	0.46	272	2.31	86	0.00		0.57	100	2.78	106	1.31	38	1.45	150
	1979-1980	9.81	54	0.93	99	2.31	56	0.85	300	3.68	106	1.74	82	4.78	38	3.97	67
	1980-1981	6.94	119	8.83	103	2.78	112	2.31	84	1.24	115	1.39	66	10.98	70	5.40	97
1981-1982	9.93	71	3.81	125	6.67	96	19.01	73	1.72	62	1.37	77	14.66	49	8.73	73	
Atlantic croaker	1977-1979	298.52	64	225.00	57	9.05	104	36.42	73	3.74	49	11.36	87	10.58	50	111.61	63
	1978-1979	466.20	52	107.87	73	52.78	48	6.84	75	25.86	71	2.78	92	239.02	49	164.67	54
	1979-1980	1086.92	56	84.26	59	16.67	89	16.67	61	24.08	48	0.69	40	197.61	42	291.29	55
	1980-1981	566.20	63	27.61	98	22.68	86	6.94	85	20.68	75	0.35	70	28.61	57	141.20	65
1981-1982	1861.80	60	163.56	73	66.11	67	153.08	59	24.22	66	0.68	140	43.65	55	482.23	61	

Table 28. Mean abundances (No./ha) and mean total lengths (mm) of selected fishes caught with bag seines in Texas bay systems during October 1981-September 1982 (Blank indicates no measurement taken).

Species	Month and Year	Bay system																
		Galveston		Matagorda		San Antonio		Aransas		Corpus Christi		Upper Laguna Madre		Lower Laguna Madre		Coastwide		
		No./ha	Length	No./ha	Length	No./ha	Length	No./ha	Length	No./ha	Length	No./ha	Length	No./ha	Length	No./ha	Length	
Red drum	Oct 1981	30.00	32	1.67	335	20.00	38	158.33	27	0.00	0.00	0.00	0.00	11.67	45	33.86	94	
	Nov 1981	68.97	59	38.33	72	83.33	44	24.00	52	250.00	42	0.00	0.00	77.19	45	69.19	54	
	Dec 1981	90.00	53	8.33	88	113.33	60	57.45	57	72.92	52	37.50	43	246.43	54	89.05	59	
	Jan 1982	23.33	58	21.67	95	0.00	0.00	14.00	69	16.33	61	0.00	0.00	46.55	69	18.57	70	
	Feb 1982	40.00	60	8.33	54	30.00	73	21.28	66	79.17	62	0.00	0.00	41.07	80	30.10	65	
	Mar 1982	140.00	87	43.33	69	46.67	107	52.00	94	26.00	59	7.50	62	31.58	96	59.11	83	
	Apr 1982	23.33	193	6.67	148	23.33	127	130.61	126	14.00	138	0.00	0.00	17.86	134	31.72	150	
	May 1982	10.34	182	3.33	395	50.00	149	37.50	150	8.00	143	0.00	0.00	14.55	146	17.14	200	
	Jun 1982	3.33	181	8.33	298	10.00	178	19.15	173	4.17	138	0.00	0.00	3.51	164	6.91	193	
	Jul 1982	16.67	225	3.33	266	3.33	137	0.00	0.00	4.17	203	0.00	0.00	2.04	203	5.34	212	
	Aug 1982	4.17	306	6.25	246	6.67	225	2.08	210	0.00	0.00	0.00	0.00	0.00	0.00	3.03	255	
	Sep 1982	0.00		10.00	308	3.33	230	4.08	248	4.55	246	0.00	0.00	0.00	0.00	3.39	261	
	Spotted seatrout	Oct 1981	16.67	92	15.00	116	40.00	61	77.08	66	16.33	55	7.50	85	21.67	85	27.52	83
		Nov 1981	62.07	99	16.67	94	20.00	81	6.00	108	6.25	109	0.00	0.00	1.75	51	20.69	91
Dec 1981		10.00	83	0.00	0.00	10.00	73	0.00	0.00	4.17	114	2.50	72	7.14	84	5.15	84	
Jan 1982		0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Feb 1982		0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.50	135	0.00	0.00	0.30	135	
Mar 1982		0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Apr 1982		0.00		3.33	338	3.33	331	0.00	0.00	2.00	200	0.00	0.00	0.00	0.00	1.12	301	
May 1981		0.00		0.00	0.00	0.00	0.00	0.00	0.00	2.00	302	0.00	0.00	0.00	0.00	0.19	302	
Jun 1982		0.00		0.00	0.00	13.33	46	2.13	34	0.00	0.00	0.00	0.00	0.00	0.00	1.95	40	
Jul 1982		10.00	69	0.00	0.00	26.67	48	41.30	60	8.33	36	15.00	77	10.20	67	15.48	63	
Aug 1982		29.17	63	6.25	56	20.00	51	45.83	73	2.00	46	0.00	0.00	8.00	76	17.87	62	
Sep 1982		6.67	80	5.00	159	100.00	63	24.49	70	2.27	56	0.00	0.00	0.00	0.00	20.85	89	
Black drum		Oct 1981	40.00	161	6.67	158	6.67	236	4.17	188	8.16	195	0.00	0.00	5.00	163	12.90	179
		Nov 1981	0.00		6.67	178	3.33	122	10.00	229	0.00	0.00	0.00	0.00	3.51	148	3.37	171
	Dec 1981	0.00		1.67	200	3.33	277	4.26	202	0.00	0.00	0.00	0.00	0.00	0.00	1.28	223	
	Jan 1982	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	Feb 1982	0.00		0.00	0.00	0.00	0.00	2.13	197	0.00	0.00	0.00	0.00	0.00	0.00	0.31	197	
	Mar 1982	0.00		1.67	193	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.75	231	0.50	211	
	Apr 1982	3.33	201	5.00	199	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.53	200	
	May 1982	3.45	211	5.00	271	3.33	32	6.25	176	4.00	248	0.00	0.00	0.00	0.00	3.24	192	

Table 28. (Cont'd).

Species	Month and Year	Bay system															
		Galveston		Matagorda		San Antonio		Aransas		Corpus Christi		Upper Laguna Madre		Lower Laguna Madre		Coastwide	
		No./ha	Length	No./ha	Length	No./ha	Length	No./ha	Length	No./ha	Length	No./ha	Length	No./ha	Length	No./ha	Length
Black drum (Cont.)	Jun 1982	3.33	79	18.33	154	53.33	90	38.30	94	8.33	79	0.00	0.00	8.77	83	17.66	97
	Jul 1982	23.33	104	6.67	119	40.00	96	30.43	92	2.08	106	2.50	140	18.37	127	18.61	111
	Aug 1982	4.17	58	14.58	224	3.33	110	2.08	147	2.00	144	0.00	0.00	0.00	0.00	4.10	130
	Sep 1982	10.00	175	5.00	207	10.00	118	8.16	128	2.27	195	0.00	0.00	0.00	0.00	6.42	166
Sheepshead	Oct 1981	0.00		3.33	276	0.00		4.17	238	0.00		0.00	0.00	1.67	122	1.35	215
	Nov 1981	3.45	142	3.33	82	3.33	402	2.00	158	0.00		0.00	0.00	0.00	0.00	1.99	180
	Dec 1981	0.00		0.00		0.00		0.00		0.00		0.00	0.00	0.00	0.00	0.00	0.00
	Jan 1982	0.00		0.00		0.00		0.00		0.00		0.00	0.00	0.00	0.00	0.00	0.00
	Feb 1982	0.00		0.00		0.00		0.00		0.00		0.00	0.00	0.00	0.00	0.00	0.00
	Mar 1982	0.00		1.67	205	0.00		0.00		0.00		0.00	0.00	0.00	0.00	0.26	205
	Apr 1982	3.33	425	0.00		3.33	119	0.00		4.00	410	0.00	0.00	0.00	0.00	1.53	336
	May 1982	0.00		0.00		3.33	27	0.00		18.00	370	0.00	0.00	0.00	0.00	2.09	175
	Jun 1982	23.33	314	0.00		10.00	193	0.00		0.00	198	0.00	0.00	0.00	0.00	6.47	271
Jul 1982	6.67	267	0.00		20.00	42	0.00	62	4.17	198	0.00	0.00	0.00	0.00	4.35	189	
Aug 1982	0.00		0.00		0.00		2.08		0.00		0.00	0.00	0.00	0.00	0.30	62	
Sep 1982	6.67	362	3.33	306	0.00		0.00		0.00		0.00	0.00	0.00	0.00	2.30	339	
Southern flounder	Oct 1981	0.00		1.67	173	0.00		0.00		0.00		0.00	0.00	0.00		0.26	173
	Nov 1981	0.00		1.67	218	3.33	398	4.00	201	0.00		0.00	0.00	1.75	29	1.49	207
	Dec 1981	0.00		0.00		0.00		0.00		0.00		0.00	0.00	17.86	40	2.46	40
	Jan 1982	3.33	26	0.00		0.00		0.00		0.00		0.00	0.00	6.90	41	1.70	32
	Feb 1982	40.00	34	3.33	30	26.67	42	6.38	20	0.00		0.00	0.00	8.93	30	14.93	31
	Mar 1982	6.67	31	13.33	53	16.67	65	164.00	56	2.00	25	10.00	32	73.68	30	40.78	42
	Apr 1982	16.67	58	5.00	74	6.67	41	32.65	48	4.00	40	0.00	0.00	17.86	88	12.88	60
	May 1982	20.69	60	8.33	82	10.00	110	8.33	87	2.00	39	0.00	0.00	25.45	68	12.07	74
	Jun 1982	6.67	156	3.33	242	13.33	104	0.00		6.25	106	0.00	0.00	15.79	99	6.42	149
Jul 1982	6.67	116	1.67	358	3.33	77	2.17	114	6.25	52	5.00	168	0.00	0.00	3.67	154	
Aug 1982	4.17	210	0.00		0.00		4.17	108	0.00		0.00	0.00	0.00	0.00	1.54	170	
Sep 1982	13.33	144	6.67	234	0.00		0.00		0.00		0.00	0.00	0.00	0.00	4.59	181	
Atlantic croaker	Oct 1981	16.67	33	3.33	184	3.33	174	0.00		0.00		0.00	0.00	13.33	38	6.51	96
	Nov 1981	37.93	85	0.00		0.00		0.00		18.75	36	7.50	140	0.00	0.00	11.19	90
	Dec 1981	290.00	43	13.33	32	50.00	29	170.21	30	22.92	29	0.00	0.00	73.21	38	110.11	35

Table 28. (Cont'd).

Species	Month and Year	Bay system															
		Galveston		Matagorda		San Antonio		Aransas		Corpus Christi		Upper Laguna Madre		Lower Laguna Madre		Coastwide	
		No./ha	Length	No./ha	Length	No./ha	Length	No./ha	Length	No./ha	Length	No./ha	Length	No./ha	Length	No./ha	Length
Atlantic croaker (Cont.)	Jan 1982	326.67	37	26.67	37	33.33	32	28.00	35	4.08	35	0.00	24.14	40	89.37	36	
	Feb 1982	4126.67	42	11.67	47	86.67	38	159.57	41	20.83	30	0.00	283.93	55	1003.56	43	
	Mar 1982	3896.67	51	313.33	56	70.00	51	430.00	38	18.00	29	0.00	12.28	51	998.03	48	
	Apr 1982	8230.00	65	693.33	65	176.67	73	608.16	63	104.00	76	0.00	53.57	78	2083.15	69	
	May 1982	2734.48	78	386.67	77	303.33	80	135.42	76	88.00	108	0.00	9.09	58	740.77	78	
	Jun 1982	1553.33	86	336.67	91	60.00	90	168.09	90	6.25	99	0.00	14.04	90	435.44	90	
	Jul 1982	606.67	99	31.67	136	6.67	115	69.57	120	0.00	0.00	0.00	0.00	111	152.05	116	
	Aug 1982	125.00	112	118.75	122	3.33	115	56.25	117	2.00	135	0.00	6.00	95	56.08	117	
	Sep 1982	56.67	137	18.33	116	0.00		2.04	111	0.00	0.00	0.00	20.45	95	21.28	118	

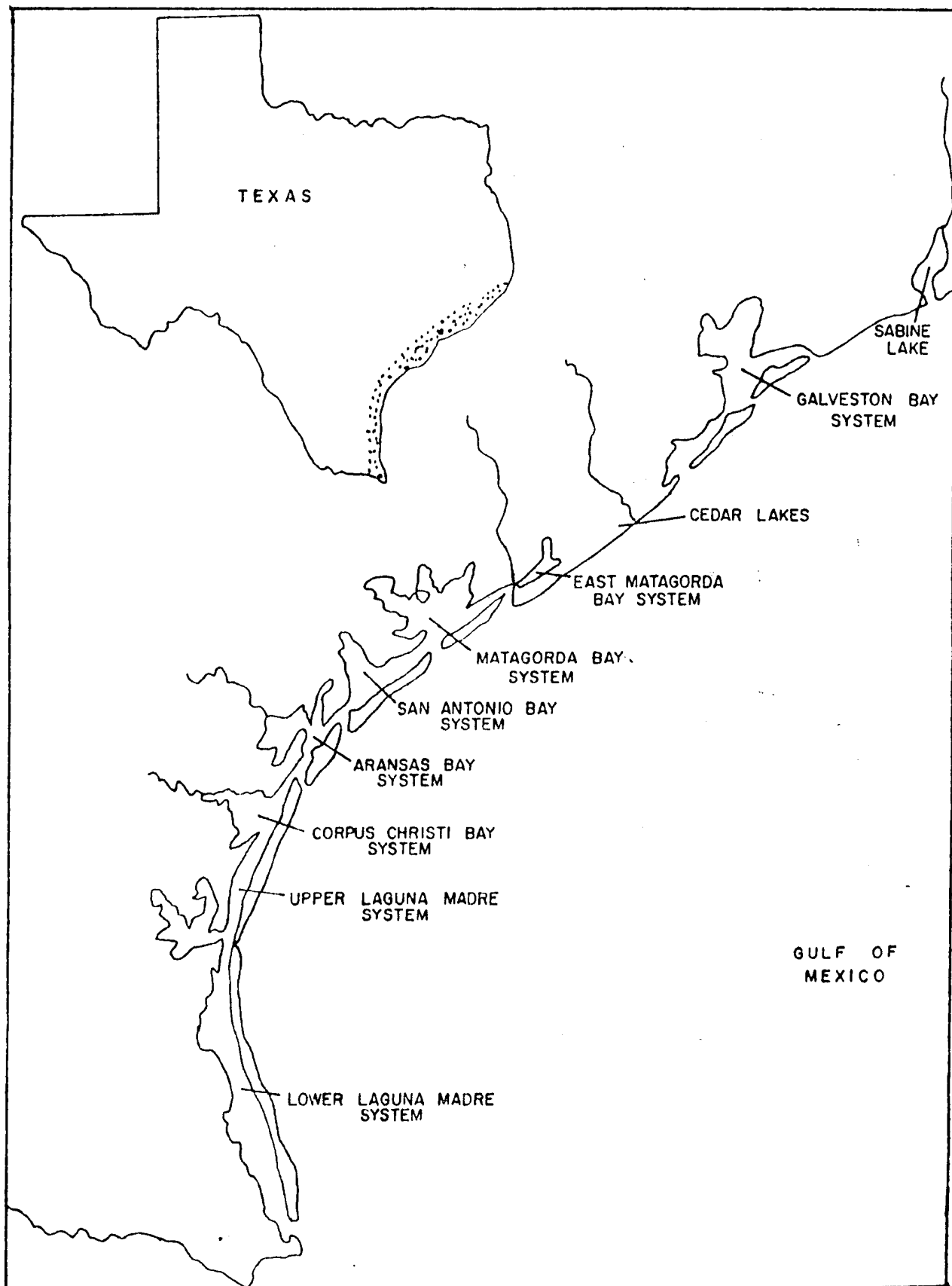


Figure 1. Texas bay systems.

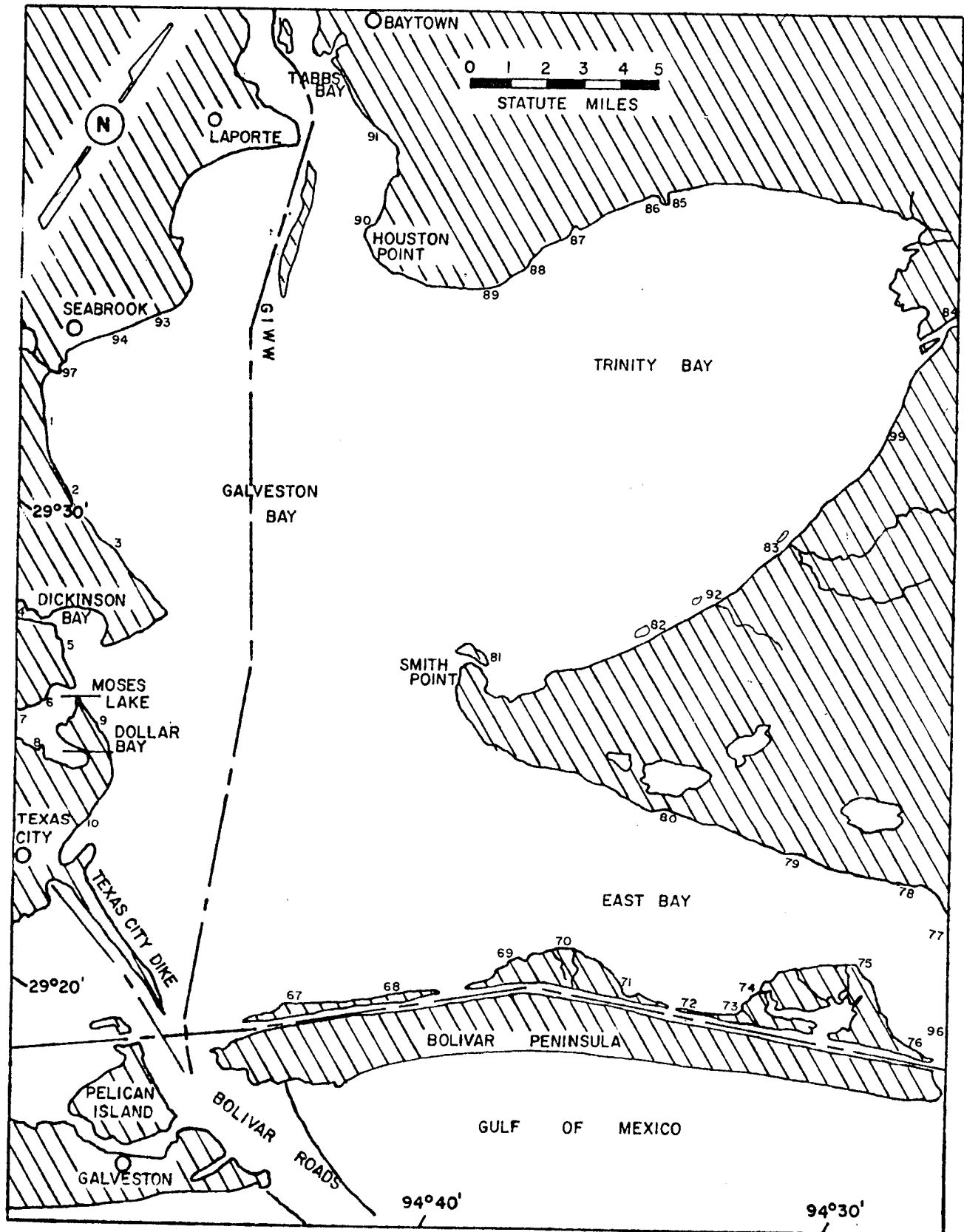


Figure 2. Gill net sample sites in the Galveston Bay system, September 1981-June 1982.

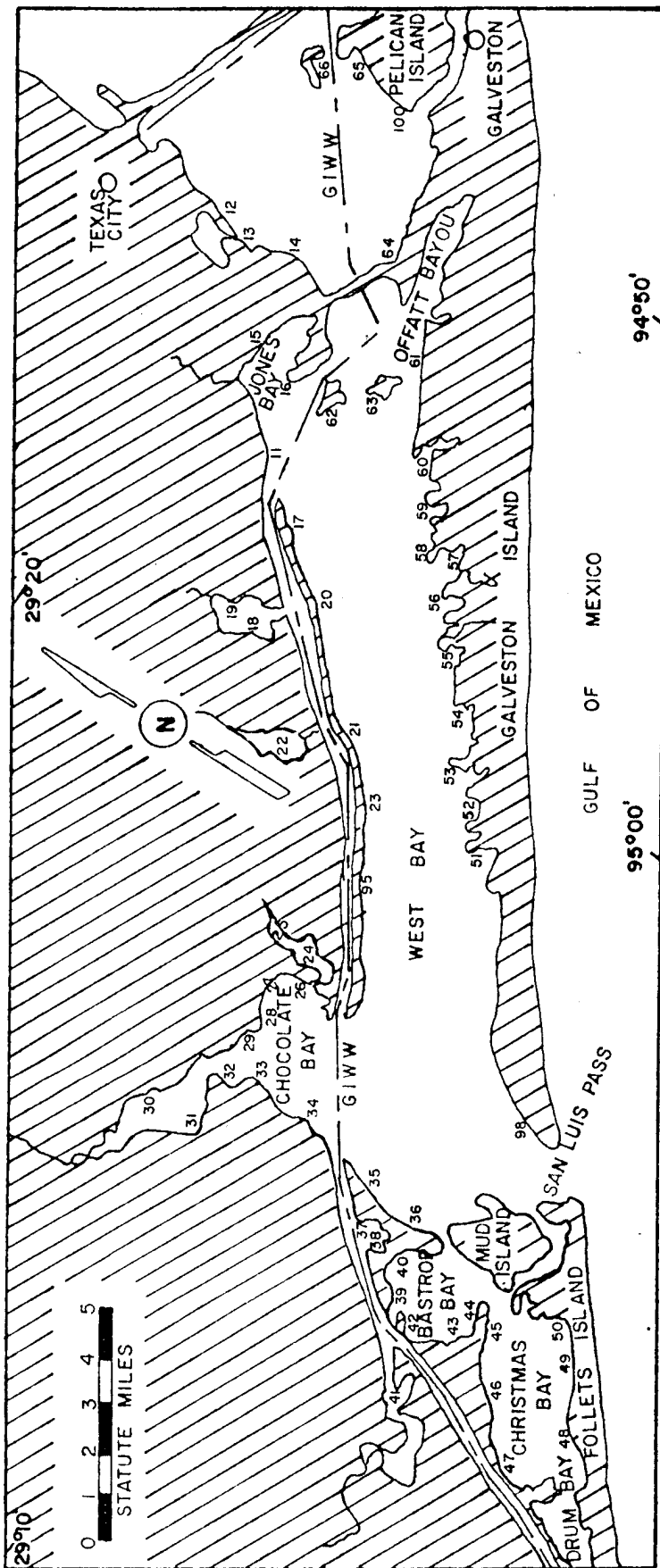


Figure 3. Gill net sample sites in the Galveston Bay system, September 1981-June 1982.



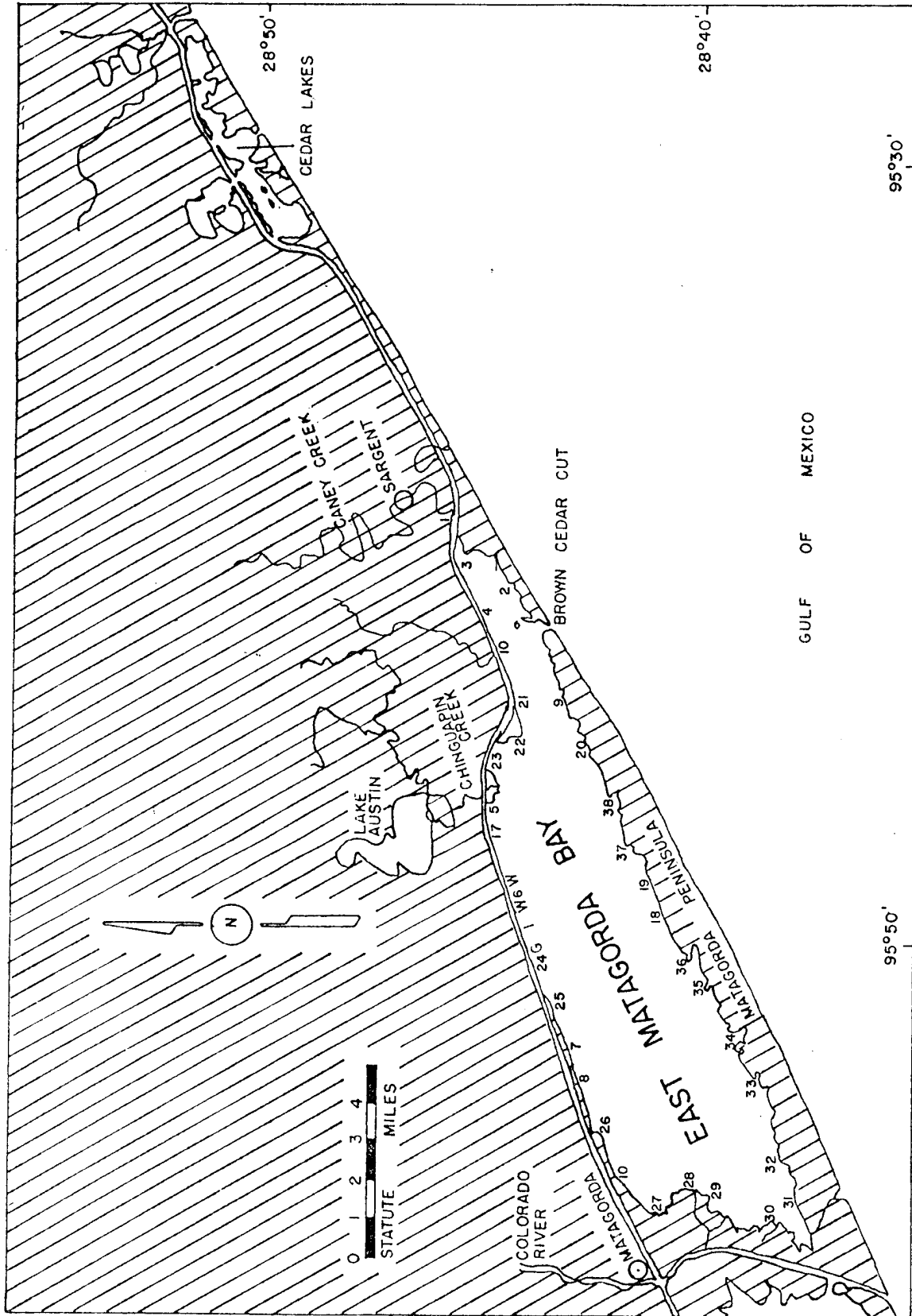


Figure 4. Gill net sample sites in the East Matagorda Bay system, September 1981-June 1982.

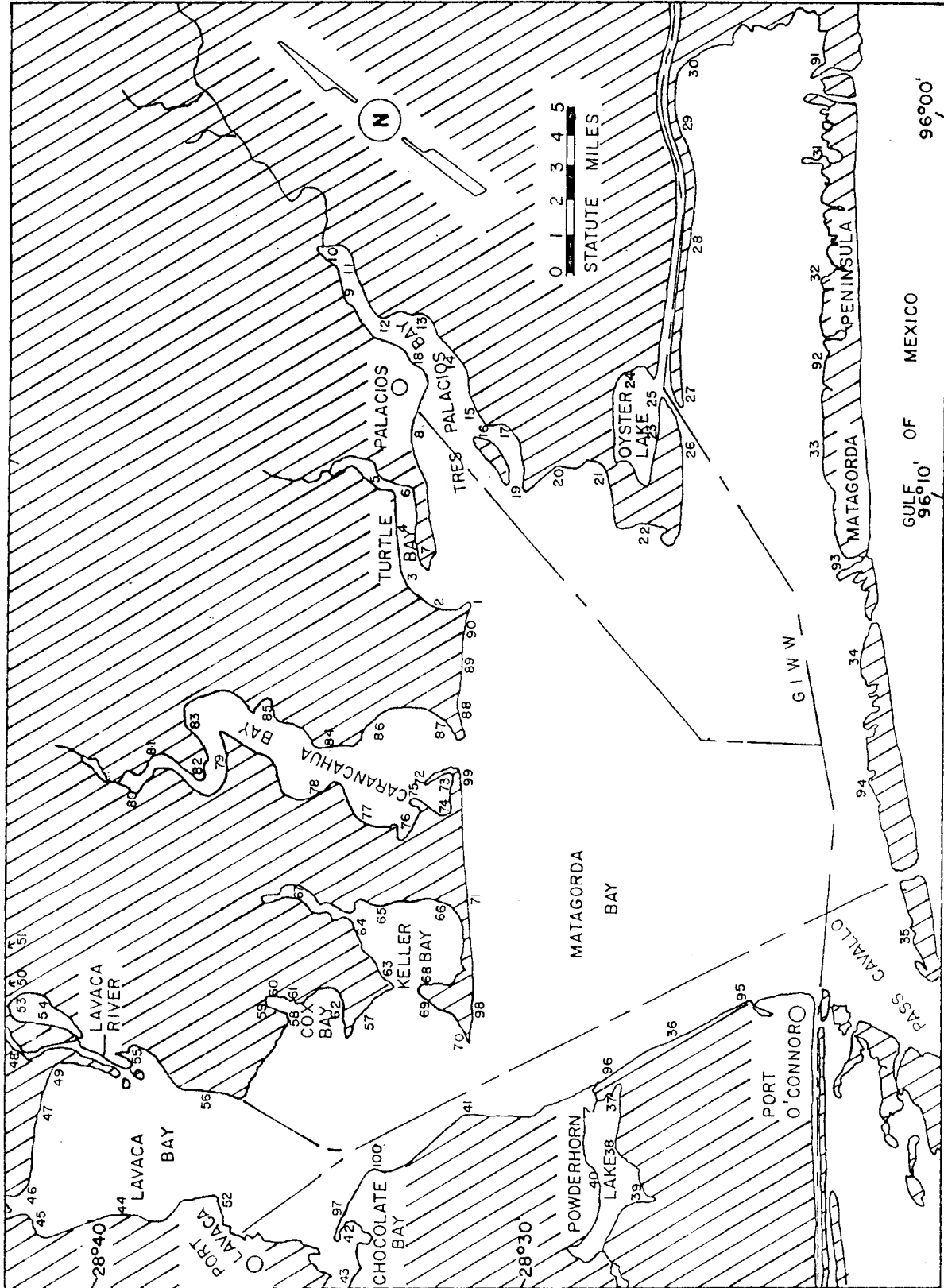


Figure 5. Gill net sample sites in the Matagorda Bay system, September 1981-June 1982.

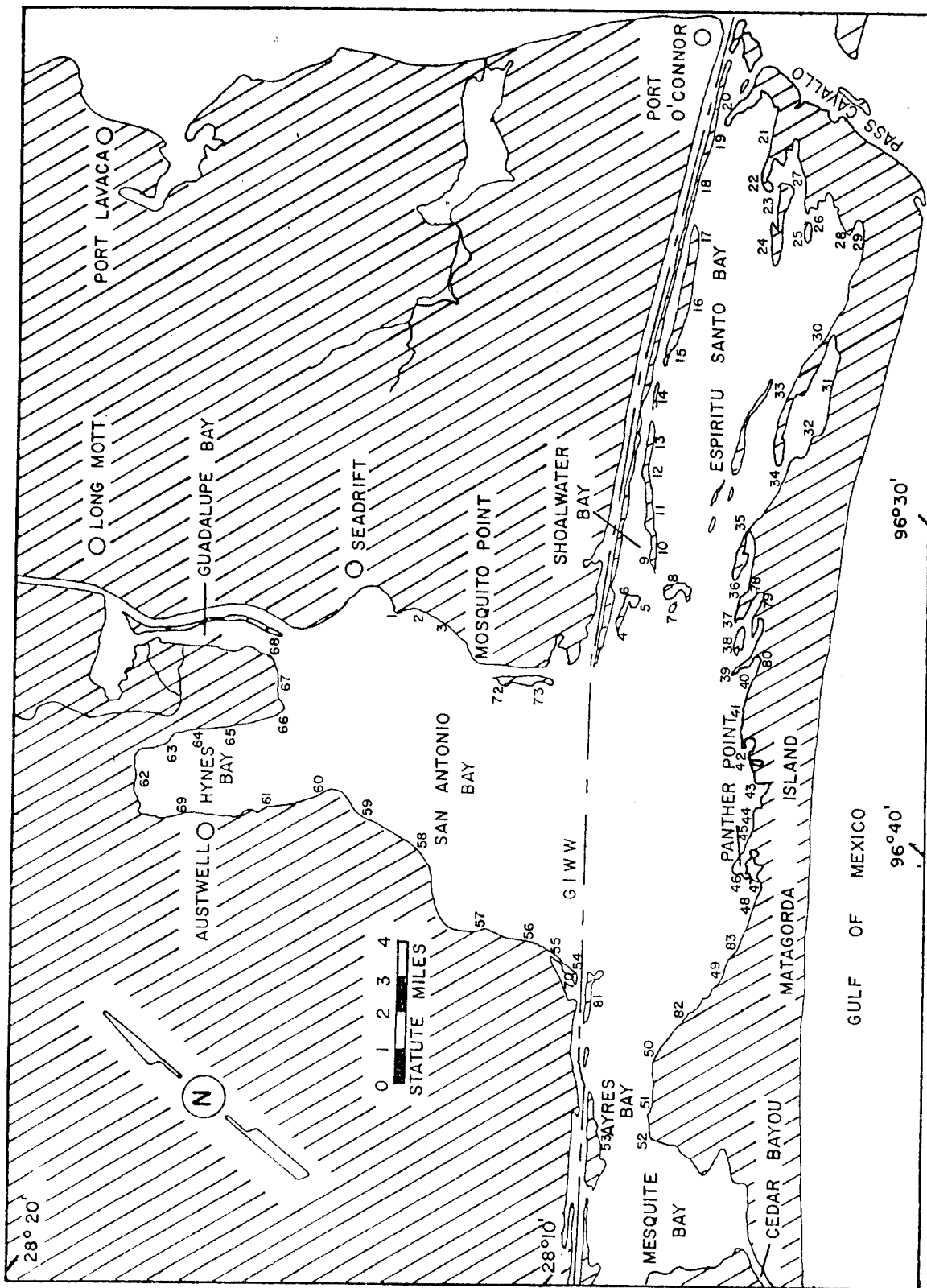


Figure 6. Gill net sample sites in the San Antonio Bay system, September 1981-June 1982

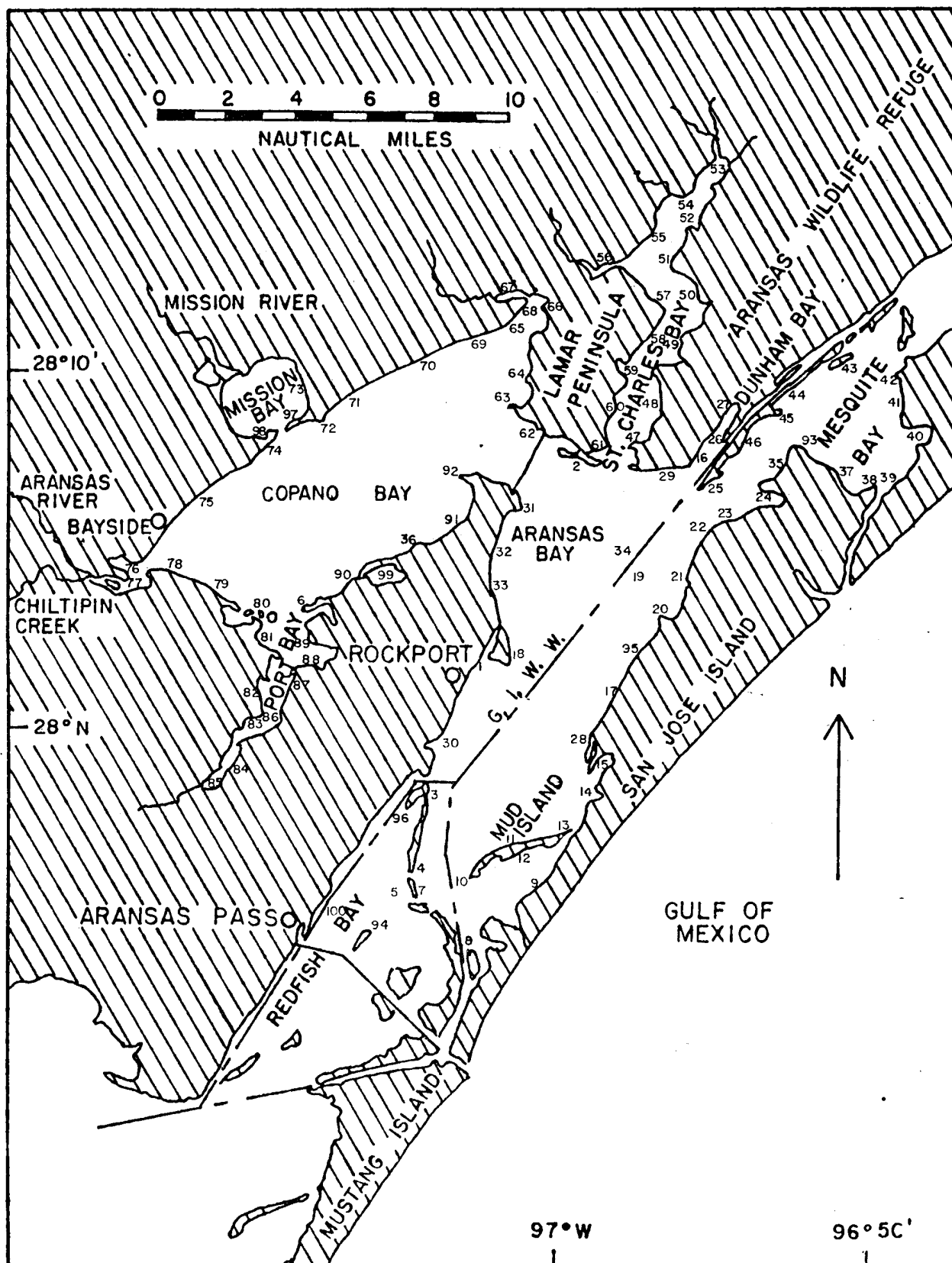


Figure 7. Gill net sample sites in the Aransas Bay system, September 1981-June 1982.

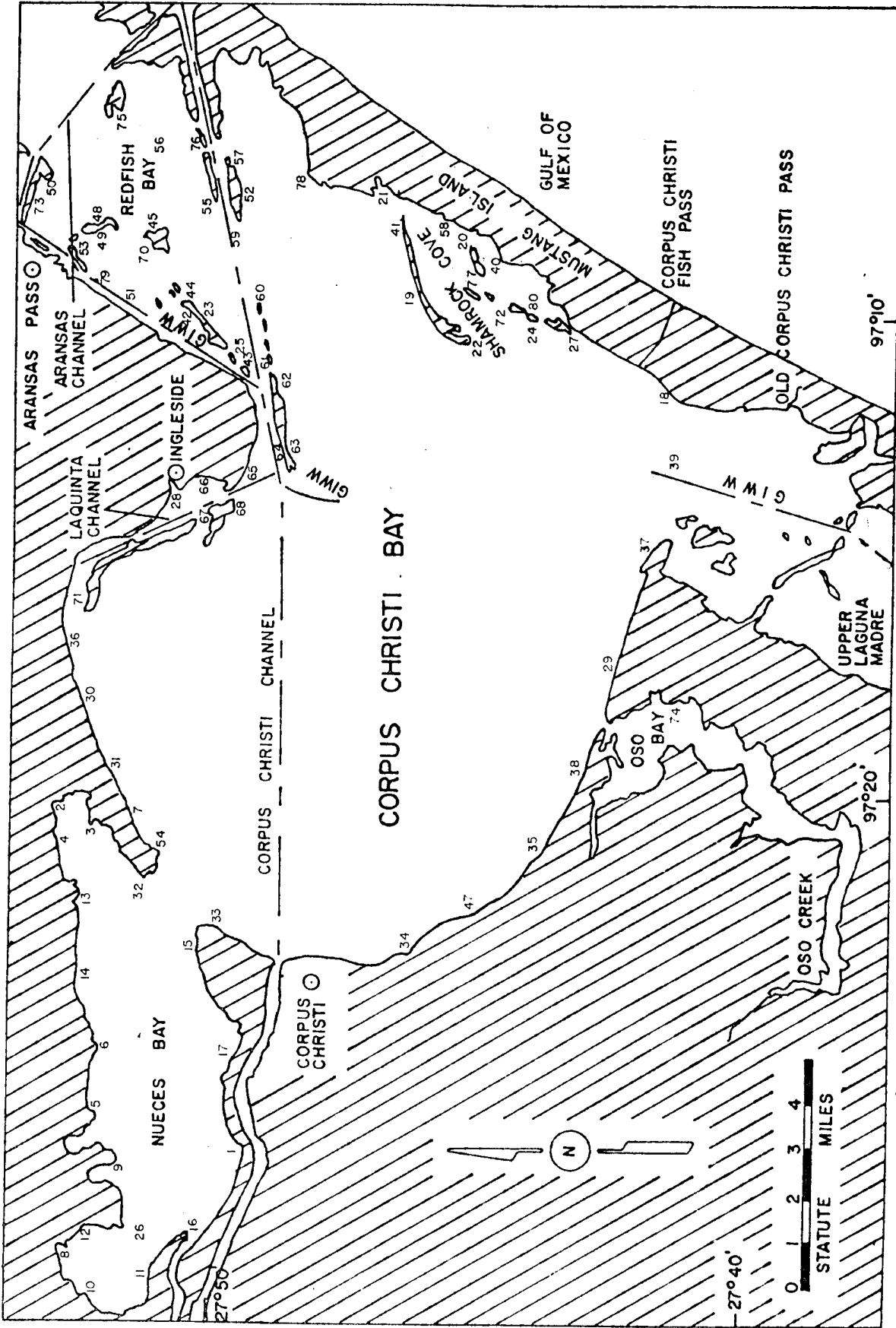


Figure 8. Gill net sample sites in the Corpus Christi Bay system, September 1981-June 1982.

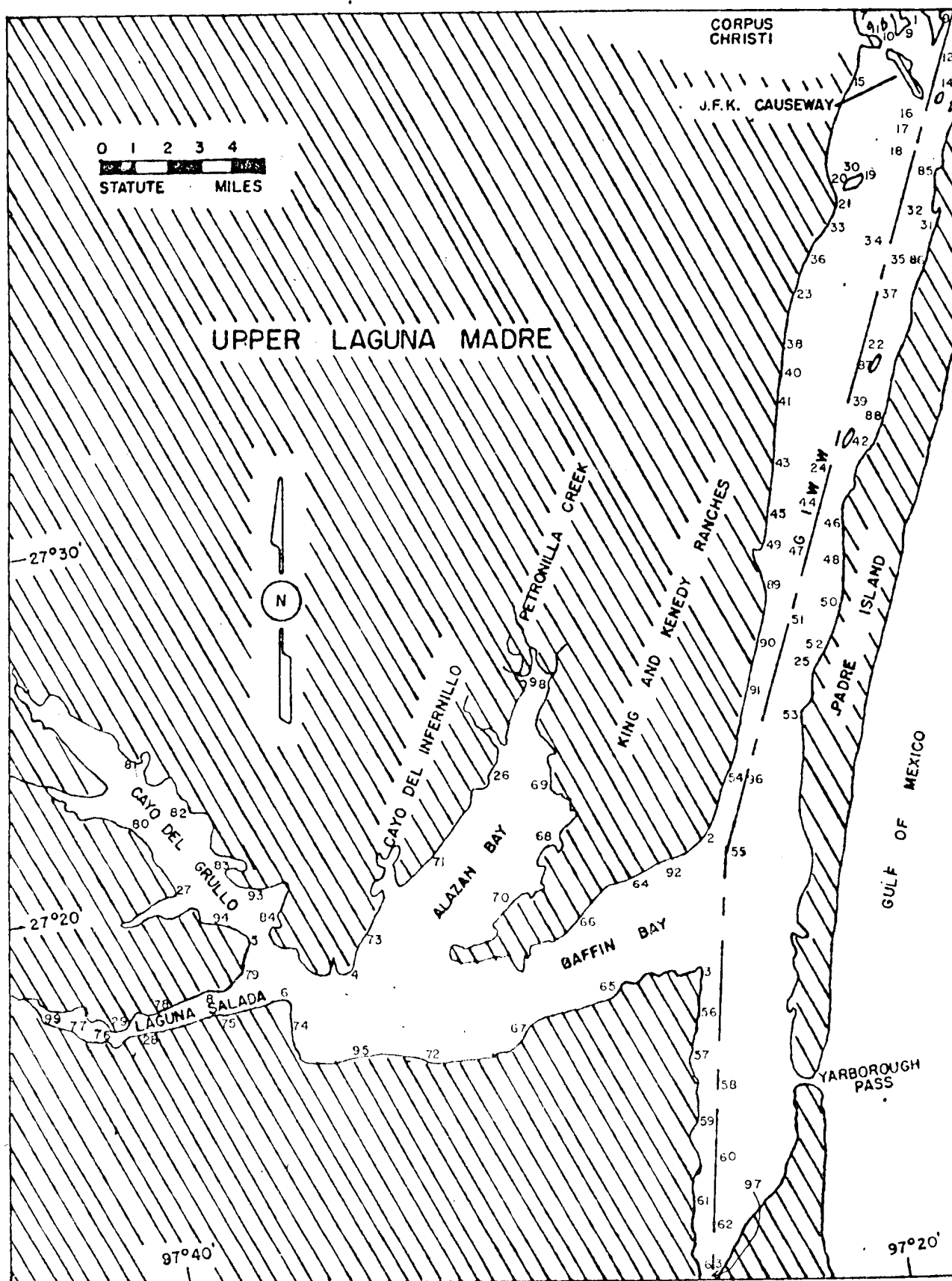


Figure 9. Gill net sample sites in the upper Laguna Madre system, September 1981-June 1982.

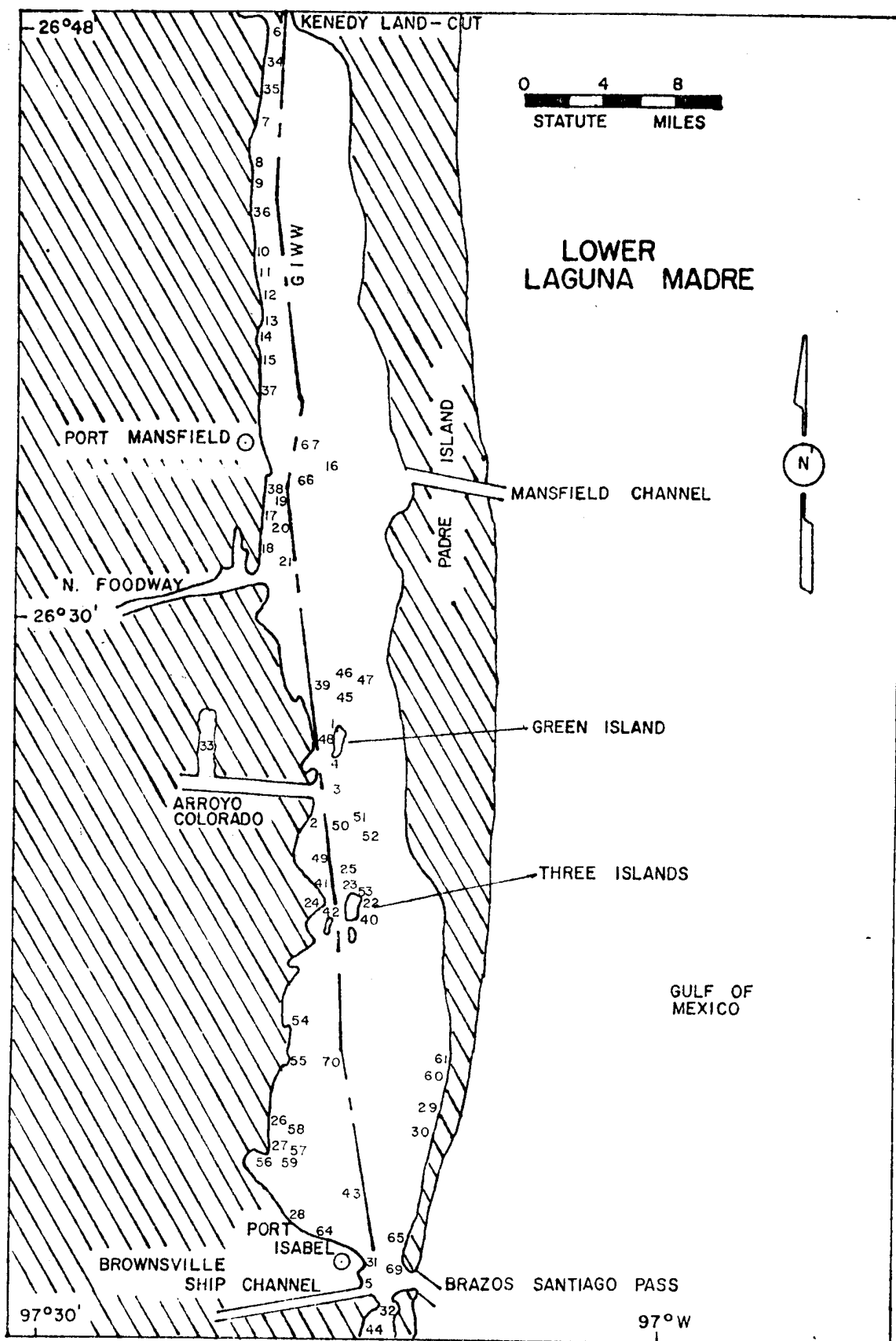


Figure 10. Gill net sample sites in the lower Laguna Madre system, September 1981-June 1982

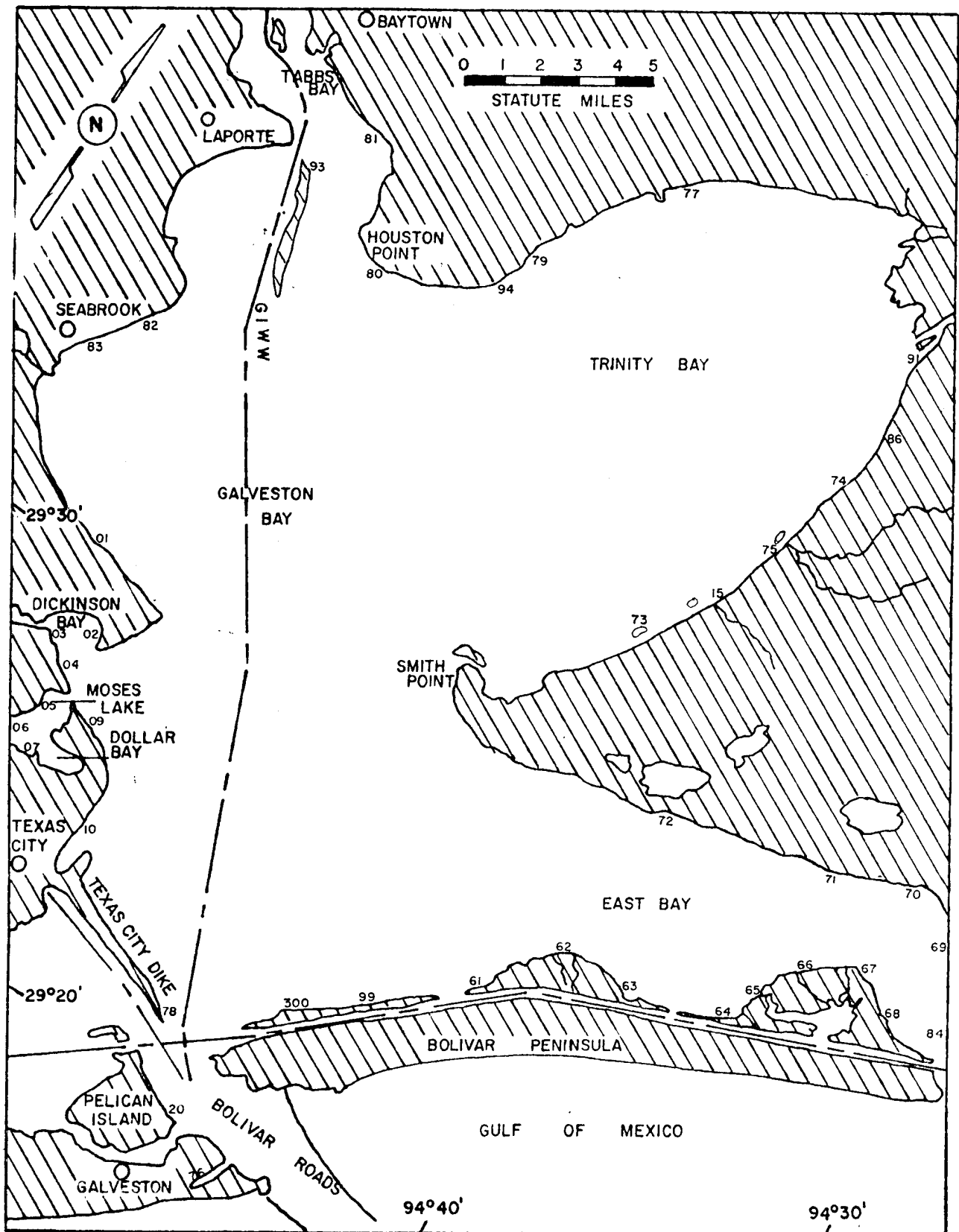


Figure 11. Bag seine sample sites in the Galveston Bay system, October 1981-September 1982 (each station number should be preceded by the digit 2).



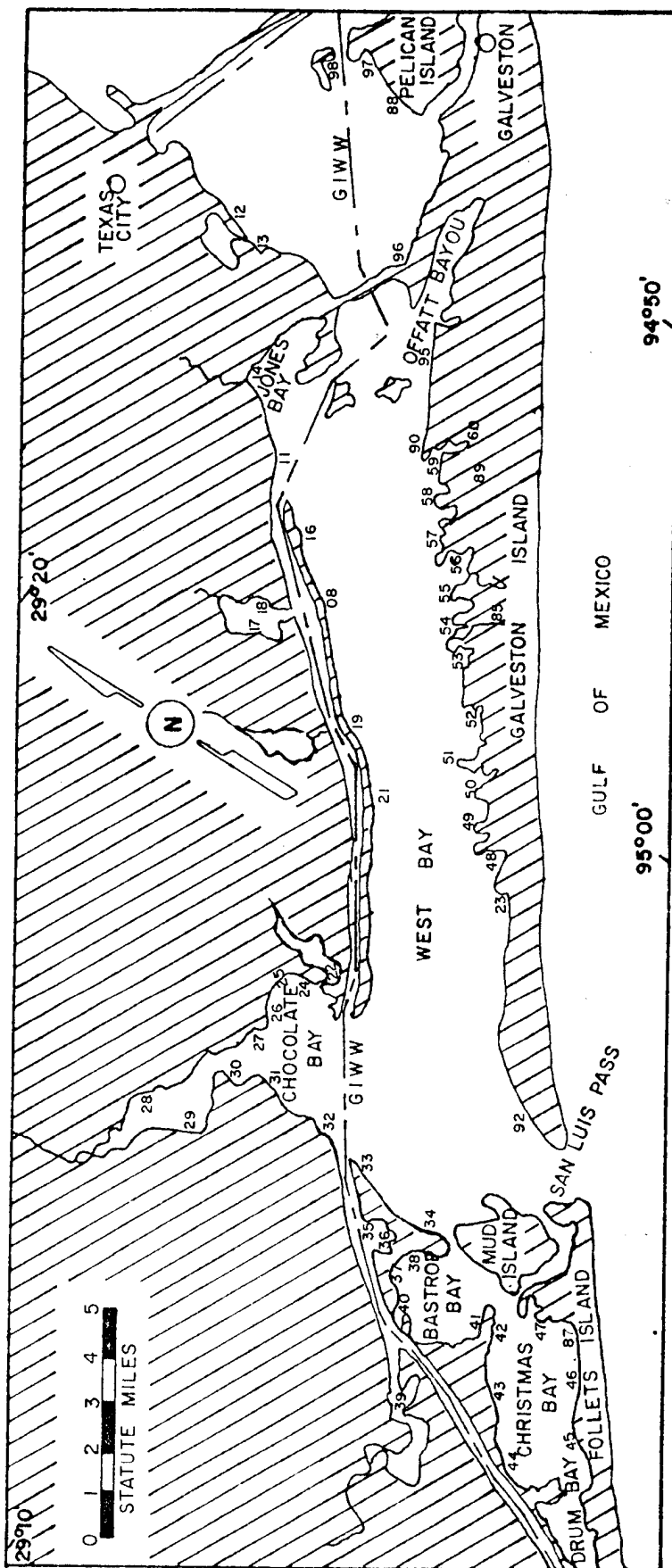


Figure 12. Bag seine sample sites in the Galveston Bay system, October 1981-September 1982 (each station number should be preceded by the digit 2).

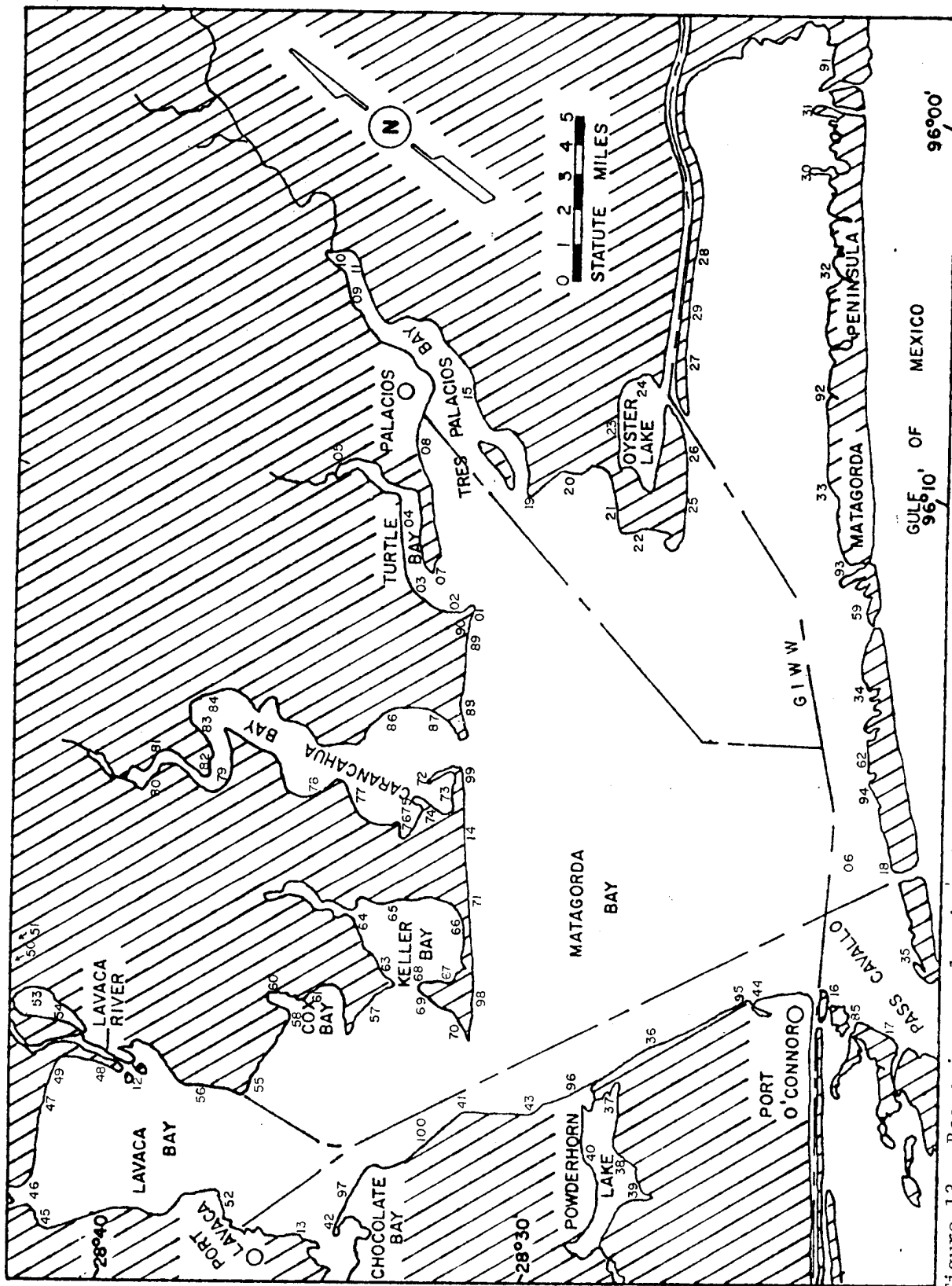


Figure 13. Bag seine sample sites in the Matagorda Bay system, October 1981-September 1982 (each station number should be preceded by the digit 2).

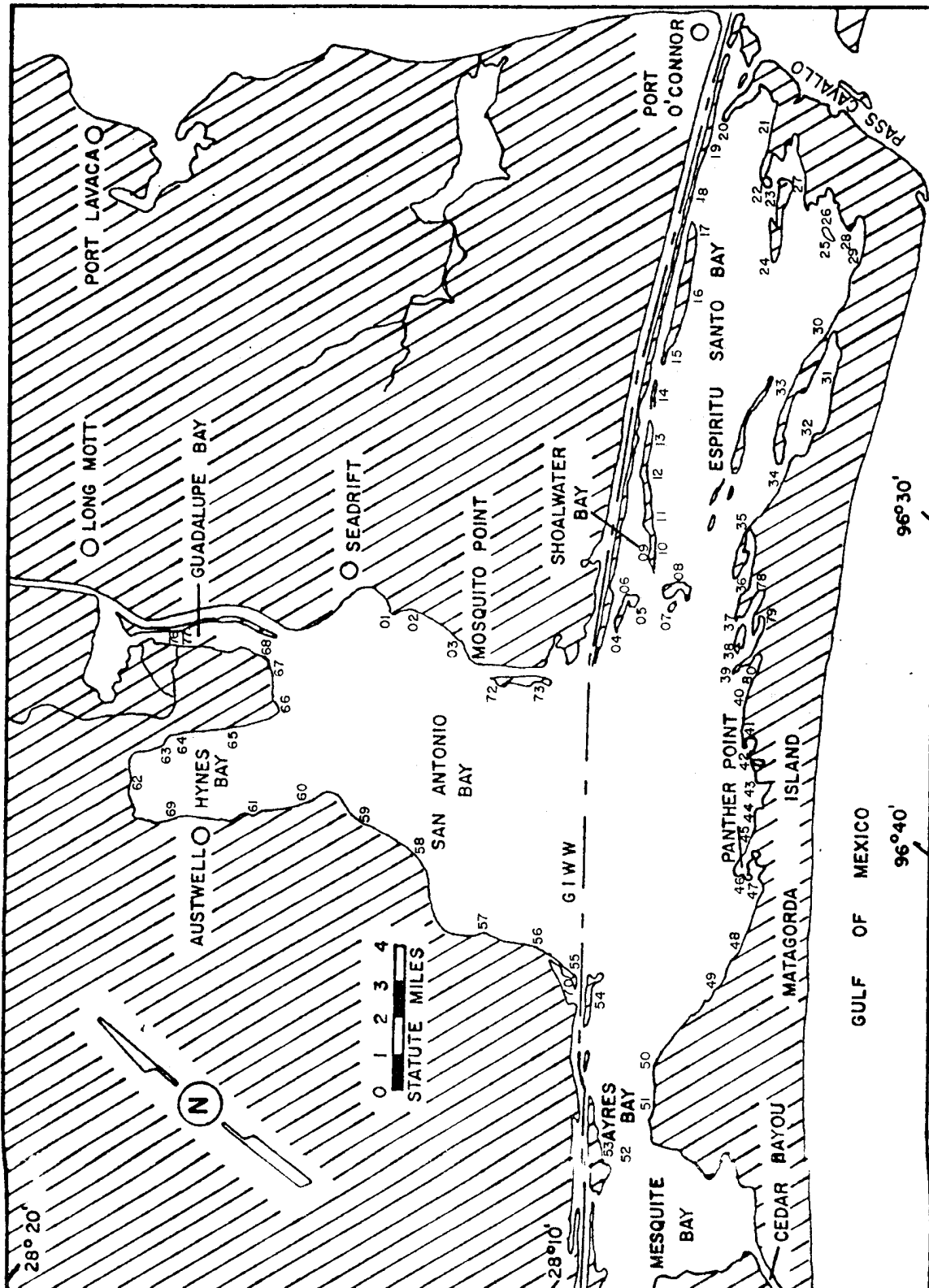


Figure 14. Bag seine sample sites in the San Antonio Bay system, October 1981-September 1982 (each station number should be preceded by the digit 2).

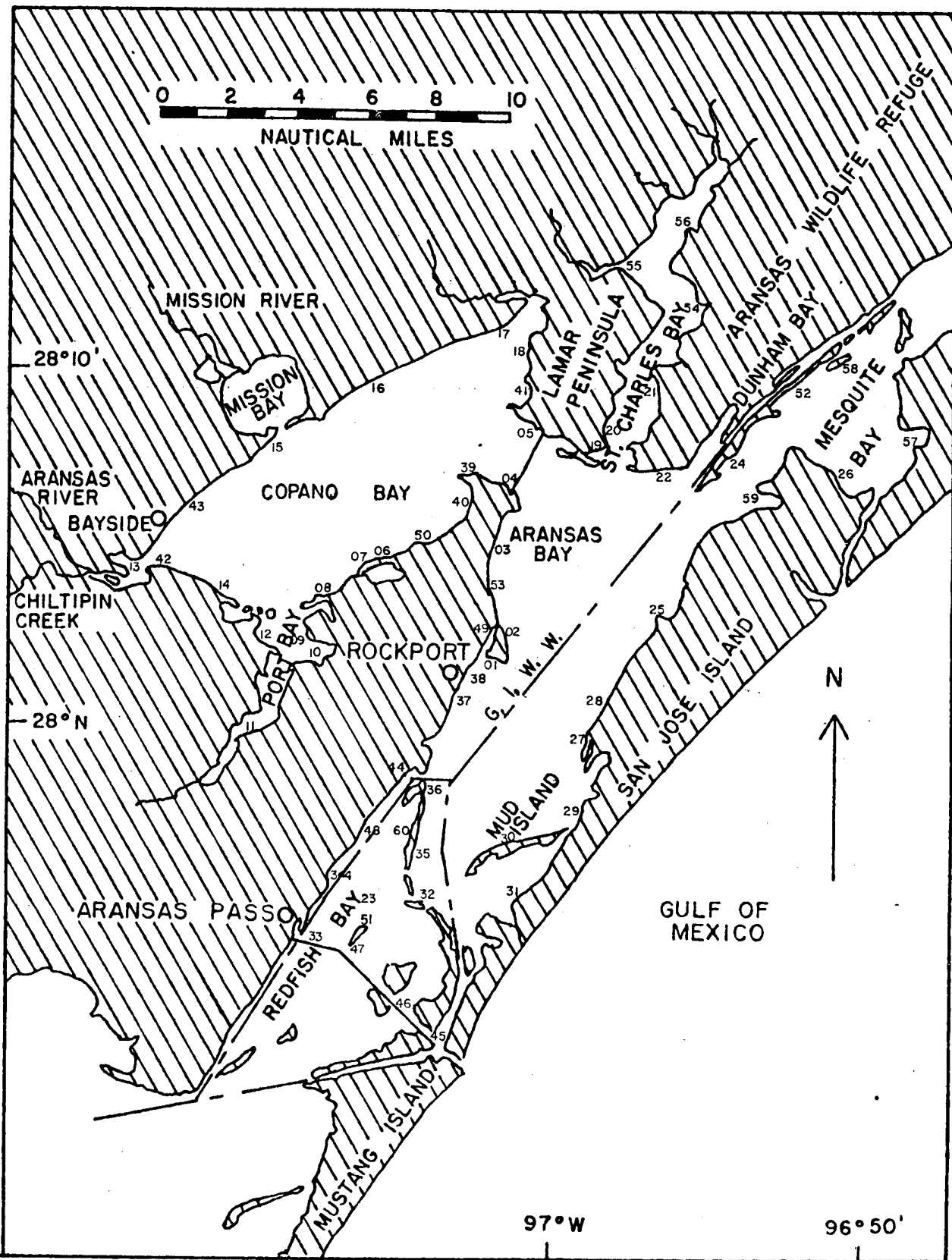


Figure 15. Bag seine sample sites in the Aransas Bay system, October 1981-September 1982 (each station number should be preceded by the digit 2).

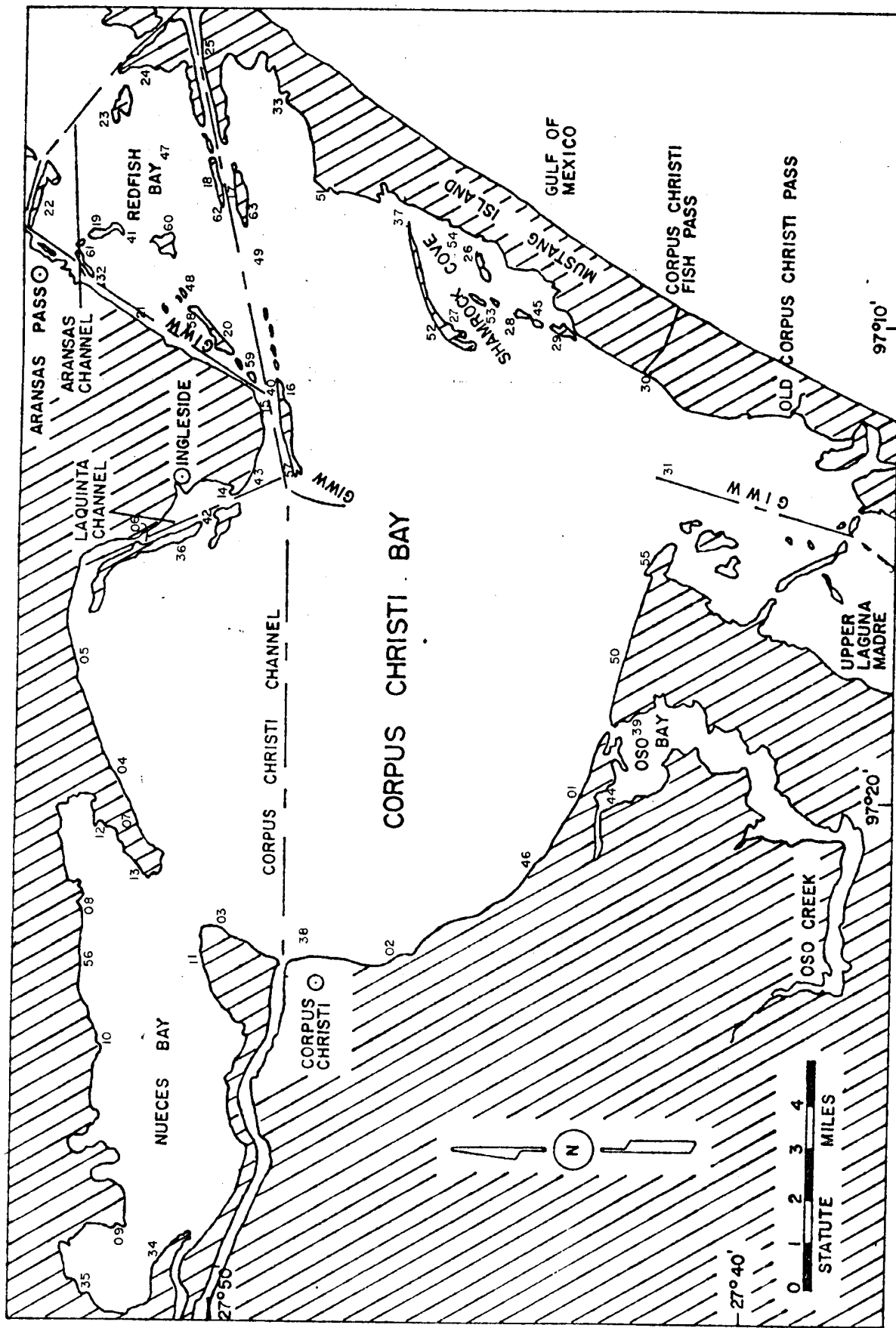


Figure 16. Bag seine sample sites in the Corpus Christi Bay system, October 1981-September 1982 (each station number should be preceded by the digit 2).

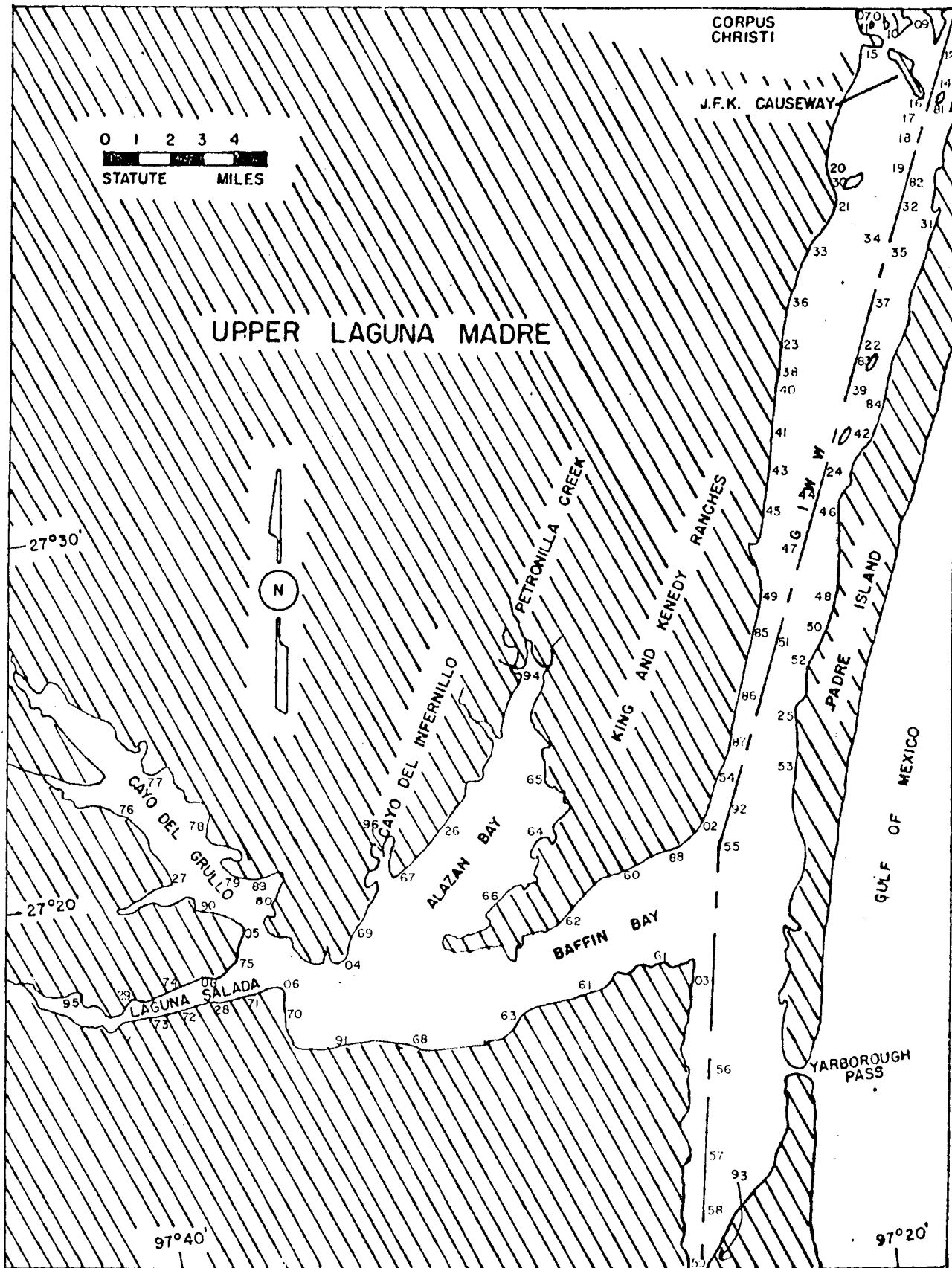


Figure 17. Bag seine sample sites in the upper Laguna Madre system, October 1981-September 1982 (each station number should be preceded by the digit 2).

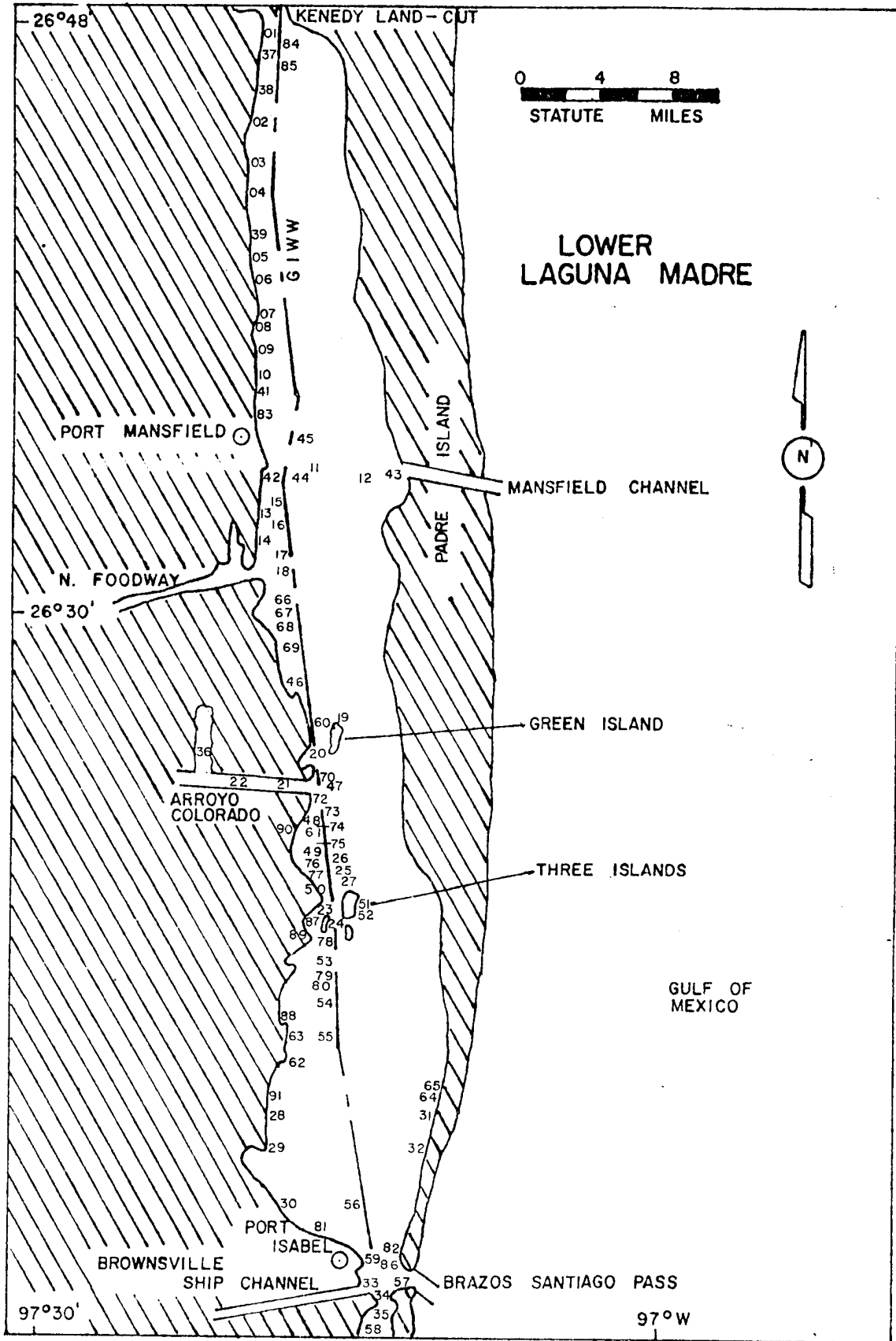


Figure 18. Bag seine sample sites in the lower Laguna Madre system, October 1981-September 1982 (each station number should be preceded by the digit 2).

## Appendix A. Bay Systems Area Descriptions



## AREA DESCRIPTIONS

Descriptions of each bay system except the East Matagorda Bay system were reproduced from Matlock et. al. (1978).

### Galveston Bay

The Galveston Bay system, which includes 353,768 acres, is the largest estuary on the Texas coast (Fisher et al. 1972) and consists of Galveston, Trinity, East, West, Dickinson, Chocolate, Christmas, Bastrop, Dollar, Drum and Tabbs Bays and Clear, Moses and Jones Lakes (Figure 1a-b).

The estuary is separated from the Gulf of Mexico by Bolivar Peninsula, Galveston Island and Follets Island. Two natural passes, Bolivar Roads and San Louis Pass, and one man-made pass, Rollover Pass, connect the estuary with the Gulf.

Bay depths average 6.9 ft or less except in dredged channels. Bolivar Roads, Houston, Texas City, Galveston and Bayport Ship Channels are dredged to 40 ft. The Intracoastal Waterway is dredged to 12.1 ft through East, lower Galveston, and West Bays (Diener 1975).

Bay substrates include mud, shell and clay; barrier island shorelines are predominately sand. Approximately 7,527 acres of oyster reefs lie in Galveston, Trinity, East, West and Dickinson Bays (Benefield and Hofstetter 1976). Numerous spoil "islands" occur along most dredged channels.

Shoreline marshes are present along portions of East, West, Trinity, Christmas, Bastrop, Drum and Chocolate Bays. Diener (1975) listed 231,342 acres of emergent vegetation--smooth cordgrass (Spartina alterniflora), salt meadow cordgrass (S. patens), bulrush (Scirpus olney), shoregrass (Monothochloe littoralis), rush (Juncus romerianus), seashore saltgrass (Distichlis spicata) and saltwort (Batis maritima)--and 18,095 acres of submergent seagrasses--widgeon grass (Ruppia maritima) and Holodule beaudettei--in Galveston Bay. McEachron, Shaw and Moffett (1977) reported Halophila engelmanni and turtle grass (Thalassia testudinum) in Christmas and Bastrop Bays.

The bay receives an average 2642 billion gal of fresh water annually, 90% of which comes from the Trinity and San Jacinto Rivers (Environmental Protection Agency 1971). Diener (1975) reported salinities ranging from 5-15 o/oo in Trinity and upper Galveston Bays to 20-30 o/oo in the lower portions of Galveston Bay near the Gulf. From November 1975 through March 1976 bay salinities at gill net stations ranged from 2.2 to 28.9 o/oo, dissolved oxygen varied from 5 to 18 ppm and water temperatures ranged from 40.1 to 76.1 F (Texas Parks & Wildlife Dept., Seabrook, Texas).

The Galveston Bay complex is adjacent to the most populated and industrialized area of Texas. A population of 2,424,800 people reside

in the eight counties bordering the bay (1974 Census Data, Houston--Galveston Area Council, personal communication). The highest concentrations of people and industrial complexes are on the western shores of Galveston Bay and the eastern shores of West Bay. From 1967 to 1969 the daily average flow of domestic wastewater into the Galveston Bay complex was at least 16.7 million gal and the industrial wastewater inflow at least 300 million gal (Diener 1975).

Sport fishermen caught an estimated 2,774,297 lb of fish in the bay from September 1974 through August 1975 (Heffernan et al. 1977). The commercial fishing industry harvested over 45.1 million lb of shrimp worth \$38,000,000, 15.4 million lb of blue crabs worth \$1,700,000, 6.6 million lb of finfish worth \$1,200,000, 21.4 million lb of shelled oysters worth \$11,700,000 and 9.3 million lb of small bait shrimp worth \$11,100,000 (O. B. Lynam, Texas Parks & Wildlife Dept., Seabrook, Texas, Unpublished data).

#### East Matagorda Bay

East Matagorda Bay (Figure 2) is a relatively shallow (3.4 ft average depth), medium to high salinity (15-30 o/oo), turbid bay with a surface area of 37,810 acres at mean low water (MLW) (Diener 1975).

The bay's only connection with the Gulf of Mexico has historically been Brown Cedar Cut at the east end. Caney Creek and the Colorado River delta mark the northeast and southwest boundaries, respectively. The Matagorda Peninsula forms the southern boundary while the Intracoastal Waterway borders the northern shoreline of East Matagorda Bay.

Extensive stands of emergent cordgrass (Spartina sp.) occur along both the southern and northern boundaries with rush found on the northern shoreline. Submergent grasses include widgeon grass and Halodule beaudettei.

Oyster reefs are located throughout the system but no estimate of the acreage was available.

East Matagorda Bay receives fresh water from rainfall and runoff entering the Intracoastal Waterway from Caney Creek, the Colorado River and Peyton Creek (via Lake Austin and Live Oak Bayou). No estimates of the amount of annual fresh water inflow were available.

Population centers are located at each end of the bay in Matagorda (population 700) and in Sargent (population unknown). Fishing comprises the major activity of residents in both towns; however, information concerning commercial and recreational landings has been combined with data from the Matagorda Bay system.

#### Matagorda Bay

The Matagorda Bay system (Figure 3) encompasses an area of 244,430 acres and has an average depth of about 6.9 ft at MLW (Diener 1975). It includes Tres Palacios, Turtle, Carancahua, Lavaca, Cox, Keller and Chocolate Bays and Oyster, Redfish, Salt and Powderhorn Lakes.

Matagorda Bay is a large primary bay of 167,529 acres and 7.9-ft mean depth (Diener 1975). The southern boundary is the long, narrow Matagorda Peninsula with sand shoreline and extensive areas of submergent and emergent grasses; the eastern confine is the Colorado River delta and the western boundary is a shallow sand shoreline with limited submergent and emergent vegetation. The community of Port O'Connor (population 1,400) is in the southwest corner. Several secondary and tertiary bays associated with major and minor drainages into Matagorda Bay indent the northern perimeter.

Oyster Lake is a shallow muddy tertiary system of 2335 acres and 2.6-ft mean depth (Diener 1975) located along the northwestern shoreline of Matagorda Bay. Numerous oyster reefs are located throughout the system and the periphery is surrounded by emergent vegetation. Tres Palacios Bay is a secondary system of 9436 acres and 3.9-ft mean depth (Diener 1975) with oyster reefs and scattered shell throughout. The community of Palacios (3,500 people) is located on the northern shoreline. Turtle Bay, with 1280 acres and 2.6-ft mean depth (Diener 1975), is a muddy system with a moderate number of oyster reefs. The shoreline is primarily clay bluffs with scattered emergent vegetation communities.

Carancahua Bay, along the north central shoreline of Matagorda Bay, covers 13,076 acres and has a 3.9-ft mean depth (Diener 1975). Several resort communities (Port Alto, Schicke Point and Cape Carancahua) are located along the bay. This bay has little marsh except in the southern portion where the tertiary systems of Redfish and Salt Lakes are located. Steep banks and sandy clay constitute the majority of the shore areas.

Lavaca Bay is a large secondary bay in the northwest corner of Matagorda Bay with 44,729 acres and 4.3-ft mean depth (Diener 1975). The shoreline is primarily clay bluffs. On the southeastern shoreline of Lavaca Bay are two smaller secondary areas: Cox Bay and Keller Bay. Cox Bay is a shallow muddy system with a clay bluff periphery and scattered oyster reefs throughout. Keller Bay is a deeper system and the southern perimeter has the largest submerged grass beds found in the Lavaca Bay complex. The community of Olivia (240 people) is located at the head of Keller Bay. On the western shoreline of Lavaca Bay is Chocolate Bay, a small, muddy bay of 699 acres and 2.6-ft mean depth with clay bank shoreline (Diener 1975). North of Chocolate Bay is the city of Port Lavaca (12,000 people). The area of central Lavaca Bay is the most heavily industrialized in the Matagorda Bay system.

South of Lavaca Bay, on the western shoreline of Matagorda Bay, is Powderhorn Lake. This is a moderately saline, shallow body of water of 2889 acres and 2.3-ft mean depth (Diener 1975). This "lake" connects with Matagorda Bay through Powderhorn Bayou on which the community of Indianola (200 people) is located. The periphery of this bay is surrounded by large emergent grass communities.

There are two direct exchanges with the Gulf of Mexico, Pass Cavallo and the Matagorda Ship Channel, both located in the southwest corner of Matagorda Bay, and one indirect connection, the Colorado River, on the eastern boundary. The western portion of Matagorda Bay and the

southern two-thirds of Lavaca Bay are transected by the Matagorda Ship Channel, 35.4 ft deep (Diener 1975), with associated spoil banks. The channel originates at the ALCOA (Aluminum Company of America) plant on the eastern shoreline of Lavaca Bay and terminates at the Gulf of Mexico through the Matagorda jetties. Small channels branch off in Lavaca Bay to the Refuge Harbor at Port Lavaca and to the Lavaca River. The Intracoastal Waterway, dredged to 12.1 ft (Diener 1975), intersects the Matagorda Ship Channel near Port O'Connor. The Palacios Ship Channel branches from the Intracoastal Waterway in south central Matagorda Bay.

Diener (1975) listed 119,970 acres of emergent vegetation--smooth cordgrass, salt meadow cordgrass, saltwort, shoregrass, and coastal dropseed (Sporobolus virginicus)--and 7037 acres of submergent vegetation (widgeon grass and Halodule beaudettei) in the Matagorda Bay system.

Between 1957 and 1968 Matagorda Bay received an average 713 billion gal of freshwater discharge annually (Diener 1975), mainly through the Tres Palacios, Carancahua, Lavaca and Navidad Rivers with partial flow entering the bay from the Colorado River. From November 1975 through March 1976, bay water salinities at gill net stations ranged from 10.0 to 28.0 o/oo, dissolved oxygen varied from 6.0 to 13.0 ppm and water temperatures ranged from 44.6 to 78.8 F (Texas Parks & Wildlife Dept., Palacios).

Sport fishermen caught an estimated 844,600 fish weighing 968,832 lb in Matagorda Bay from September 1975 through August 1976; during the same period commercial fishermen landed 176,370 lb of fish (Breuer et al. 1977).

#### San Antonio Bay

The San Antonio Bay system consists of the primary bays San Antonio and Espiritu Santo and the secondary bays, Hynes, Guadalupe and Shoalwater (Figure 4). Several large natural saltwater lakes occur along Matagorda Island and connect with the primary bays via sloughs and small passes. Two major passes, Cedar Bayou Pass to the west and Pass Cavallo to the east, provide circulation routes between the Gulf of Mexico and the bay system.

San Antonio, Hynes and Guadalupe Bays cover approximately 84,012 acres and Espiritu Santo Bay covers 34,099 acres for a total bay system area of 118,111 acres (Collier and Hedgpeth 1950). The average depths of the unaltered bay system are 3.9 ft in San Antonio Bay (maximum of 7.6 ft) and 4.9 ft in Espiritu Santo Bay (maximum of 7.9 ft) (Collier and Hedgpeth 1950).

Bottom substrates are generally silty clay and sand in the upper bay region which gradually change to sand clay and sand in the lower bay and Espiritu Santo bay regions (Texas Parks & Wildlife 1975). Approximately 3015 acres of spoil islands and 2001 acres of oyster reefs occur in the bay system (Burg 1974). One of the major oyster reefs is Panther Reef which extends from Panther Point north toward Mosquito Point.

The Guadalupe and San Antonio Rivers are the major sources of fresh water for the San Antonio Bay system, providing an average annual inflow of 449 billion gal from a drainage area of 6,559,920 acres (Childress et al. 1975). The amount of fresh water entering the system generally depends upon rainfall in the upland drainage rather than on local drainage. Local rainy periods usually occur during early summer and fall. The average annual rainfall for the area is 33.9 inches (Texas Parks & Wildlife 1975).

Salinity values for the bay system generally increase as the distance from the river increases. Out-flowing fresh water moves along the west shore of San Antonio Bay while incoming Gulf water moves along the east shore (Childress et al. 1975). Average surface salinities range from 0.0 o/oo in Guadalupe Bay to about 8.0 o/oo in lower San Antonio Bay and from 14.0 to 21.0 o/oo in Espiritu Santo Bay (Childress et al. 1975). No seasonal turbidity patterns are noted within the bay system; however, turbidities tend to increase toward the upper bay and river-influenced areas, as well as in areas disturbed by mud-shell and channel dredging operations (Childress et al. 1975). Dissolved oxygen concentrations increase during cold months and decrease during warm months. Between May 1972 and August 1973, average dissolved oxygen concentrations ranged from 7.0 to 12.4 ppm (Childress et al. 1975).

About 24,993 acres of emergent and 16,345 acres of submergent vegetation are found in the San Antonio Bay system (Diener 1975). Smooth cordgrass is the dominant emergent plant in all areas of the bay system except in upper San Antonio Bay where common reed, Phragmites communis, is dominant (Childress et al. 1975). Other species of emergent vegetation include saltwort, saltgrass, shoregrass and salt meadow cordgrass (Diener 1975). The dominant submergent vegetation of the San Antonio Bay system is shoal grass, Diplanthera wrightii. This plant is located primarily in the low turbidity areas of lower San Antonio Bay and Espiritu Santo Bay and in the shallow lakes and sloughs found along the northern margin of Matagorda Island. Other species of submergent vegetation found in the bay system include widgeon grass, and the algae Polysiphona gorgoniae, Spyridia filimentosa, Gracilaria folifera, Ulva lactuca and U. fasciata (Childress et al. 1975). The algae are usually found attached to submerged solid objects such as oyster shells or pilings. However, some algae can be found in calm areas attached to mud or sand substrates.

Four small towns occur on the shoreline of the San Antonio Bay system: Austwell, Long Mott, Seadrift and Port O'Connor. Less than 4,000 inhabitants live in these four communities combined (1970 census). The primary businesses found in this area are farming, ranching and fishing, including shrimping and oystering. The majority of the bay shoreline as well as the San Antonio-Guadalupe River drainage occurs on or near ranchland and farmland. Two major industries exist in the San Antonio Bay system; Union Carbide Corporation at Long Mott and DuPont de Nemours E.I. & Company at Bloomington, a town on the Guadalupe River approximately 20 miles from the bay.

The tourist industry is not very extensive, but a few fishing centers at Seadrift and Port O'Connor furnish tackle, guides and access to the bay system. Most of the sport fishing occurs in Espiritu Santo Bay.

Between September 1974 and August 1975, sport fishermen harvested an estimated 416,453 lb of fish from the entire bay system; commercial fishermen harvested an estimated 482,592 lb of fish (Heffernan et al. 1977). In addition, approximately 883,172 lb of shrimp, 1,125,239 lb of blue crabs and 196,873 lb of oysters were harvested commercially during the 1974 calendar year (O. B. Lynam, Texas Parks & Wildlife Dept., Seabrook Field Station, personal communication).

### Aransas Bay

The Aransas Bay complex consists of primary, secondary and tertiary bays. The system extends from Aransas Pass, Texas, northeastward to Mesquite bay, and from its eastern boundary of San Jose Island, westward across Copano Bay to the small community of Bayside, Texas (Figure 5).

Aransas Bay is the primary bay with a surface area at MLW of 56,207 acres and an average depth of 7.9 ft (Diener 1975). A direct water circulation and marine life migration route from the Gulf of Mexico to the bay is provided by a deep water (45.0-46.9 ft) pass, 600 to 712 ft in width, between San Jose Island and Mustang Island at Port Aransas, Texas (Anonymous 1971). This accounts for the higher than average salinities in the southern region of the bay (approximately 30 o/oo). The middle of the bay is the deepest part with a maximum value of 13.1 ft at MLW (U.S. Dept. Commerce 1976a). Six major oyster (*Crassostrea virginica*) reefs ranging in area from 25 to 257 acres are concentrated in the northern portion of Aransas Bay, along with scattered smaller reefs (Heffernan 1961). There are no private oyster leases in the Aransas Bay system (Diener 1975).

Copano, St. Charles, Redfish and Dunham Bays are considerably shallower, secondary areas, supporting extensive growths of algae and "grasses", which provide valuable nursery grounds for juvenile fish and crustaceans (Heffernan 1972a). Nutrient circulation in these bays is generally affected by freshwater runoff as well as by tidal fluctuations.

Copano Bay is the largest secondary bay with 41,730 acre of surface water and an average depth of 3.6 ft with a maximum depth of 8.9 ft (Diener 1975). The Mission and Aransas Rivers flow into the bay with respective discharges of 733.3 and 65.0 gal/s (Diener 1975).

Copano Bay has five large oyster reefs, ranging in size from 22 to 42 acres, plus a compliment of smaller reefs (Heffernan 1961). The transverse position of a few of the reefs near the mouth of Copano Bay dampen tidal action in much of the bay (Collier and Hedgpeth 1950).

The narrow St. Charles Bay, extending between Lamar Peninsula and the Aransas National Wildlife Refuge, has a surface area of 8408 acres with a 3.6-ft average depth (Diener 1975). Freshwater flow from five creeks enters the bay along its northern reaches. Nearly the entire bay is considered prime nursery ground (Heffernan 1972a).

Redfish and Dunham Bays, at the southern and northern ends, respectively, of Aransas Bay, are also very shallow nursery areas but these bays do

not receive direct freshwater flow. Redfish Bay is densely vegetated while Dunham Bay is a muddy, sparsely vegetated area.

Tertiary nursery grounds are located principally in the lower regions of creeks and streams which enter the secondary bays. Port Bay with 1651 acres extends southward from Copano Bay and receives freshwater from creek drainage at its southern tip (Diener 1975).

Mission Bay and lower Mission River with nearly 3939 acres and located off the northwest shore of Copano Bay are the most valuable nursery grounds of the tertiary areas (Heffernan 1972b).

Copano Creek harbors a small portion of nursery grounds in the northwest corner of Copano Bay (Heffernan 1972a).

Tertiary regions of Chiltipin Creek and the Aransas River system are located along the western shore of Copano Bay (Heffernan 1972a).

The Aransas Bay system contains 137,514 acres of water (Heffernan 1972a) of which 44,989 acres are occupied by eight major species of emergent vegetation--saltwort, shoregrass, glassworts (Salicornia sp.), smooth cordgrass, salt meadow cordgrass, coastal dropseed, sea purselane (Sesuvium portulacastrum) and seashore saltgrass--and 4,124 acres by three major species of submerged vegetation--(Halodule beaudettei), widgeon grass and turtle grass (Diener 1975; W. E. Mercer, TPWD, Personal Communication).

The climate of this area varies from semi-arid to dry sub-humid, Southeast winds are dominant most of the year but from December through February northerly winds associated with advancing cold fronts are common (Whitehouse and Williams 1953). Winters in the Aransas Bay system produce the lowest average monthly water temperatures (59.2 F) and rainfall (0.8 inch). Water temperatures increase through the spring (70.9 F), reach the highest values in the summer (83.7 F) and decline through the fall (73.6 F). Rainfall is greatest in the fall (6.4 inches). The amounts of rainfall in spring and summer average about 2.6 inches. Salinity values are inversely related to rainfall with the lowest salinity (14.1 o/oo) occurring in the fall. The highest salinity occurs in spring (26.8 o/oo). Dissolved oxygen, pH and turbidity remain relatively constant throughout the year with average values of about 7.0 ppm, 8 and 50 Jackson Turbidity Units (JTU), respectively (Martinez 1970, 1971).

Water movement in the bay system is strongly influenced by wind action. Generally, however, the surface waters take a serpentine course, flowing during a falling tide from Copano Strait south toward Mud Island where there is a clockwise eddy which tends to return the bay water northward along the face of the more saline water from below Mud Island. On a strong rising tide this water is pushed east so that the eddy constricts into an ellipse (Collier and Hedgpeth 1950). The average tidal range for Aransas Bay is 0.49 ft (Diener 1975).

Mud is the predominant bottom sediment of the Aransas Bay system except along the sandy western shore of San Jose Island (Diener 1975).

The average total weight of finfish caught per year by commercial fishermen in the Aransas Bay system during the period 1969-1971 was 573,612 lb (Martinez 1970, 1971). The annual average harvest of commercially caught shrimp and crabs during the same period was 816,991 lb and 420,827 lb respectively.

Along the 230 miles of shoreline of the Aransas Bay system, the only communities of notable size are Lamar, Bayside, Fulton, Rockport and, the largest, Aransas Pass which has a population of about 6,000.

There are three domestic but no industrial waste outfalls in the bay system. Previous high discharges of toxic oilfield brine into Chiltipin Creek and the Mission River were ordered ceased in 1973 by the Texas Railroad Commission (Heffernan 1972b). A total of 14,796 acres in the Aransas Bay system are now closed to shellfishing by the Texas Board of Health (Diener 1975) because of domestic sewage problems.

### Corpus Christi Bay

The Corpus Christi Bay system, composed of Corpus Christi, Nueces, lower Redfish and Oso Bays, is located on the lower third of the Texas Gulf coast between longitude  $97^{\circ} 02'$  and  $97^{\circ} 32'$  W and latitude  $27^{\circ} 41'$  and  $27^{\circ} 55'$  N (Figure 6). It is bordered on the northeast by upper Redfish Bay, on the east by Mustang Island and on the south by the upper Laguna Madre. The city of Corpus Christi forms the western boundary of Corpus Christi Bay. Nueces Bay, the former coastal lagoon for the Nueces River basin, is positioned on an east-west axis, entering Corpus Christi Bay at the northwest corner, just north of Corpus Christi. The southern half of Redfish Bay separates Aransas from Corpus Christi Bay and enters Corpus Christi Bay in the northeast quadrant. Oso Bay, the semi-enclosed drainage area for Oso Creek, joins Corpus Christi Bay in the southwest quadrant.

The entire Corpus Christi Bay system has an area of 124,796 acres with 127 miles of shoreline. Corpus Christi Bay is the largest of the four bays in the system, having a total surface area of 95,997 acres. Nueces Bay has an area of 19,518 acres, Oso Bay covers approximately 17,095 acres and lower Redfish Bay covers approximately 5258 acres. The average depth of Corpus Christi Bay is 11.2 ft; Nueces, Oso and lower Redfish Bays average 2.0 ft in depth (Collier and Hedgpeth 1950, Hood 1953, Stevens 1959).

Sediment composition in Corpus Christi Bay ranges from fine sand to black mud. A mixture of gray clay and black mud is the dominant bottom type for the area. Brown silt occurs in areas of channelization while hard sand and fine shell can be found adjacent to Mustang Island.

Submergent vegetation is sparse in Corpus Christi Bay, except along its eastern shore where shoal grass and widgeon grass dominate. Emergent vegetation, found throughout the bay complex, consists primarily of saltwort, glassworts, shoregrass, smooth cordgrass, coastal dropseed, seablite, Suaeda linearis, sea oats, Uniola paniculata and saltmarsh bullrush, Scirpus maritimus. In Corpus Christi Bay, 19 oyster reefs total 563 acres and are confined primarily to the western and northern



portions. Oysters occur throughout Nueces Bay (Stevens 1959, 1960; Diener 1975). The primary sources of freshwater inflow into the Corpus Christi Bay system are Oso Creek and the Nueces River. Prior to the construction of Wesley Seale Dam at Mathis, Texas, in 1958, the Nueces River averaged 20 billion gal of discharge per year. The reservoir furnishes the industrial and municipal freshwater needs for the city of Corpus Christi and surrounding towns. Freshwater inflow to Nueces and Corpus Christi Bays is now limited to periods of dam overflow and heavy land runoffs (Stevens 1959).

Prior to 1972, the primary source for water exchange between Corpus Christi Bay and the Gulf of Mexico was the Corpus Christi Channel. This ship channel extends approximately 18 miles from the Port of Corpus Christi to its intersection with the Aransas Ship Channel, which continues for approximately 1 mile to the Gulf of Mexico. The two channels are maintained at an average depth of 40.0 ft (U. S. Dept. Commerce 1974). Since its completion in 1972, the Corpus Christi Fish Pass has provided intermittent water exchange through the upper Laguna Madre, but in recent years this has only occurred in association with hurricane winds and tides. Water exchange for Corpus Christi Bay with lower Redfish Bay and the upper Laguna Madre takes place primarily through the Intracoastal Waterway and on a limited basis across the shallow flats during high tides.

The climate for the area is intermediate between the semi-arid regions to the west and southwest and the humid subtropical region to the northeast. For the period 1936-1975 the mean annual air temperature was 71.2 F and the mean annual rainfall was 28.5 inches (NOAA 1975).

The general water circulation pattern for the Corpus Christi Bay system is a counterclockwise movement along the shoreline (Stevens 1959). The predominant winds, generally from the southeast year-round with occasional "northers" in the winter, and the irregular lunar tides, have the greatest overall influence on the bay water movement. For the period 1968-1972, the mean salinity and the mean water temperature for the entire Corpus Christi Bay system was 26.1 o/oo and 73.4 F, respectively (Martinez 1968, 1969, 1970, 1971 and 1972). The mean turbidity for the same period was 43 JTU, although the mean for Nueces Bay during 1971 and 1972 was 107 JTU.

The entire system lies within Nueces County, Texas. The county, with an area of 536,301 acres, had a population of 237,544 persons as of the 1970 census. The City of Corpus Christi had a population estimate of 204,525 (Diener 1975). Extensive oil and gas exploration has resulted in numerous well platforms and submerged pipelines throughout Nueces and lower Redfish Bays and along the western shore of Corpus Christi Bay. Heavy industrialization has occurred along the south shore of Nueces Bay and the north shore of Corpus Christi Bay in the area of La Quinta Channel.

#### Upper Laguna Madre

Located on the lower Texas coast between latitudes  $27^{\circ} 10'$  and  $27^{\circ} 41'$  the upper Laguna Madre system consists of the upper Laguna Madre

and the Baffin Bay system (Figure 7). The upper Laguna Madre is a long (approximately 41 miles), narrow (9.8 miles) and shallow (average depth 3.3 ft) lagoon extending from the Kenedy Land Cut to Corpus Christi Bay (Simmons 1957; Diener 1975; U.S. Dept. Commerce 1976b). Bordered on the east by Padre Island and on the west by the city of Corpus Christi and the King and Kenedy Ranches, the upper Laguna Madre covers approximately 47,228 acres at MLW (Diener 1975).

This long, narrow coastal lagoon is bisected imperfectly by the Intracoastal Waterway, which is 124.7 ft wide and 12.1 ft deep. Spoil banks from this canal form a dike 13 miles long effectively dividing the northern part of the bay. Beyond this point, spoil banks are staggered and the division is less effective (Simmons 1957). The northern end of the lagoon is restricted by a land fill causeway which has three openings totaling about 899 ft in width at MLW. The southern end is restricted by a land fill through which the Intracoastal Waterway extends.

The upper Laguna Madre is joined in the southern portion by the equally large Baffin Bay system--consisting of Baffin Bay, Alazan Bay, Laguna Salada, Cayo del Grullo and Cayo del Infernillo--which covers an estimated 54,117 acres. Baffin Bay, the central and largest bay of the group, is a narrow body of water, 19 miles long and 5 miles wide, bisected laterally by the demarcation line of Kleberg-Kenedy Counties (Breuer 1957). The average depth in Baffin Bay is 7.9 ft at MLW, with a maximum depth (MLW) of 12.1 ft near the entrance to the Laguna Madre (Breuer 1957, Diener 1975). There are approximately 31,861 acres of surface area (MLW) in Baffin Bay.

Alazan Bay, entirely within Kleberg County and the King Ranch, extends approximately 15 miles northeasterly to the mouth of the Petronilla Creek (Breuer 1957, Diener 1975). The average water depth (MLW) in Alazan Bay is approximately 3.0 ft. The surface area of Alazan Bay is approximately 13,867 acres.

Cayo del Infernillo is a shallow slough (0.7 ft) extending westward from the west shore of Alazan Bay whose water surface at MLW covers 699 acres (Breuer 1957, Diener 1975).

Baffin Bay is joined by two small tertiary bays--Laguna Salada entering from the west and Cayo del Grullo from the northwest. Both bays have an average water depth (MLW) of 3.0 ft. Laguna Salada covers approximately 3227 acres and Cayo del Grullo about 4470 acres.

The upper Laguna Madre, with restricted openings at either end, no constant openings into the Gulf of Mexico and limited freshwater inflow, has been characterized as a hypersaline estuary (Simmons 1957, Breuer 1962a), with salinities of 50-60 o/oo common. The Intracoastal Waterway provides for limited water exchange at both ends of the lagoon. Since the dredging of the Intracoastal Waterway salinity "has neither risen above 80 o/oo in the lagoon nor in Baffin Bay (where 100 o/oo was formerly not uncommon), nor have waters of very low salinity remained in the area any length of time" (Simmons 1957). The only substantial source of freshwater is runoff from the Kenedy, Kleberg, Jim Wells and Nueces County watersheds into the Baffin Bay system (Breuer 1957).

The dry sand on Padre Island absorbs rain very rapidly and the very gradual slope of the lagoon's western shore makes these areas poor water-sheds (Simmons 1957).

The upper Laguna Madre system lies in two climatic zones--north of Baffin Bay is sub-humid; south of that point is semi-arid (Simmons 1957). Rainfall in the area is highly variable but averages 27.0-29.1 inches annually (NOAA, Env. Data Svs., Natl. Climatological Center, Ashville, N.C. 1976). Annual average surface water temperatures for the period 1969-1972 ranged from 73.6 to 76.3 F in the upper lagoon (Martinez 1969, 1970, 1971 and 1972). No data concerning water temperature from Baffin Bay is available. Southeast or south-southeast winds are prevalent during most of the year and are directly responsible for the water circulation in the system (Simmons 1957). Water in the upper lagoon is generally clear (annual average turbidity during 1969-1972 ranged from 36.8 to 45.6 JTU) (Martinez 1969, 1971 and 1972); while water in Baffin Bay is often turbid and at times becomes a dark brown (Breuer 1957).

The bottom in the upper lagoon consists primarily of quartzose sand, silt and shell with some calcareous sand or mud in isolated areas (Simmons 1957). In the Baffin Bay system bottom type of soft mud, soft and hard clay, sand and concentrated shell (mostly Mulinia lateralis) can be found. Also, in Baffin Bay and near the junction of Baffin Bay and the upper Laguna Madre are extensive rock formations consisting of serpulid worm tubes, calcareous and quartzose material.

Simmons (1957) and Breuer (1957) reported dense vegetation--shoalgrass and widgeon grass--restricted to the northern one-third of the lagoon. They indicated that the remainder of the system has only sparse to moderate vegetation, with the exception of the area near the entrance to Baffin Bay and areas around spoil islands.

The only substantially populated center adjacent to the upper Laguna Madre is Corpus Christi, Texas, with a population of 204,525 (U.S. Dept. Commerce 1970a). An additional 33,166 people in Kleberg County (U.S. Dept. Commerce 1970b) are located near the Baffin Bay system.

Industrialization in the area has been held to a minimum because of limited access to the surrounding land. The only major industry in the system is a public utility (Central Power and Light Co.) which displaces approximately 3.3 million gal of water/min from the upper Laguna to Oso Bay (Mr. M. L. Sheperd, Central Power and Light Co., June 1976, Personal Communication). Most of the area surrounding Baffin Bay is private ranchland and consequently there is little urban development. There is considerable oil and gas development on these ranches, resulting in large quantities of oilfield brine production. In most cases the brine has been discharged into the bay or a creek which leads to the bay. Mackin (1971) reported that approximately 2,728,897 gal of oilfield brine is discharged each day into Petronilla Creek and thence into Alazan and Baffin Bays.

### Lower Laguna Madre

The lower Laguna Madre is a long shallow bay that extends 55 miles northward from Port Isabel to the Kenedy Land Cut (Figure 8). It varies from 3 miles to 7.8 miles wide and is imperfectly bisected by the Intra-coastal Waterway. The bay is bounded on the west by the Texas mainland and on the east by Padre Island and contains approximately 182,809 acres (Stokes 1974). Passes to the Gulf of Mexico are located near Port Isabel and east of Port Mansfield. Limited amounts of fresh water (average of 818.9 gal/s) enter lower Laguna Madre from the Arroyo Colorado and North Floodway (Bryan 1971).

Except for the Intracoastal Waterway with an average depth of 12.0 ft, the deepest areas are found in the northern and southern portions of the bay (Breuer 1962a). In the northern section, which extends from Port Mansfield to the Kenedy Land Cut, water depth is as much as 7.9 ft. From Port Mansfield south to Three Islands the water is shallow with most locations being 3.0 ft deep. South of Three Islands the maximum water depth is 5.9 ft and water depths of 3.9-4.9 ft are prevalent.

Bottom types consist of sand, silty sand or a combination of sand, silt and clay (Shepard and Rusnak 1957). Shell is not commonly found in lower Laguna Madre. In general, sediments are coarser along the eastern or Padre Island side of the bay than along the western or mainland side of the bay.

Shoalgrass is the most common type of vegetation found in lower Laguna Madre (Stokes 1974). Dense stands of shoalgrass can be found in shallow water along most of the shoreline as well as in the entire middle portion (Port Mansfield to Three Island) of the bay. Light to dense stands of manatee grass (Cymodocea filiforme), turtle grass, widgeon grass, Halophila engelmannii and Acetabularia crenulata can be found scattered throughout the bay.

Hydrological parameters have been described by Stokes (1974). Average monthly salinities range from 16.0 to 41.0 o/oo. Excluding the Arroyo Colorado and North Floodway, salinities as low as 10.5 o/oo and as high as 44.9 o/oo are sometimes encountered. Average monthly bottom water temperatures range from 62.6 F during some winter months to 81.5 F in August. Turbidity values are generally highest from Port Mansfield to Three Islands (the shallowest portion of the bay). The average annual turbidity value in this region is 45 JTU. North of Port Mansfield the average turbidity is 28 JTU and south of Three Islands the average is 32 JTU.

The total population for the counties bordering lower Laguna Madre is 162,608 (Harlingen Chamber of Commerce). In 1973, 1,278,000 out-of-state residents visited the lower Rio Grande Valley. Although there are no figures available, it is probably that many of these people visited this area because of water-related activities in lower Laguna Madre. Farming and ranching are the main industries along the bay. The only area of heavy industry is the Brownsville Ship Channel where several shrimp processing plants, a Union Carbide plant, a grain elevator, three ship dismantling plants, two oil loading docks and an oil rig construction company are located.

Appendix B. Gill Net Station Locations

Table 1. Gill net station locations in each bay system, October 1981-September 1982.

Bay system	Bay	Station number	Latitude	Longitude	Station identification
Galveston	Galveston	1	29°32'05"	95°00'35"	1.0 mile SE of Clear Creek entrance channel
	Galveston	2	29°30'50"	95°59'00"	0.3 mile W of surfaced ramp in Bacliff, Texas
	Galveston	3	29°30'20"	94°57'05"	0.3 mile E of HL & P Company's P. H. Robinson Generation Station's discharge canal
	Dickinson	4	29°28'00"	94°57'30"	N shoreline of Dickinson Bayou
	Dickinson	5	29°27'45"	94°56'40"	0.5 mile SE of junction of Dickinson Bayou and Bay
	Moses Lake	6	29°26'10"	94°56'10"	NW shore of Moses Lake
	Moses Lake	7	29°25'40"	95°57'05"	NW of Mouth of Moses Bayou
	Moses Lake	8	29°25'20"	94°56'20"	S shore of Moses Lake
	Galveston	9	29°26'25"	95°54'10"	1.0 mile W of Dollar Point
	Galveston	10	29°24'15"	95°54'15"	0.8 mile N of Texas City Dike
	West	11	29°18'00"	94°56'50"	0.2 mile NE of Brasford Bayou
	Galveston	12	29°20'35"	94°53'40"	0.5 mile N of Campbell Bayou
	Galveston	13	29°20'00"	94°53'50"	SE of Campbell Bayou
	Galveston	14	29°19'20"	94°53'35"	0.8 mile SE of Campbell Bayou
	Jones Lake	15	29°18'45"	94°55'45"	0.6 mile E of Highland Bayou
	Jones Lake	16	29°17'25"	94°56'05"	N shore of Spoil Island, ICWW Marker 54
	West	17	29°16'40"	94°58'35"	SE shore of spoil bank, 0.9 mile NE of Greens Cut
	Greens Lake	18	29°15'45"	94°59'55"	SW shore of Greens Lake, 0.3 mile W of mouth
	Greens Lake	19	29°16'35"	94°59'35"	Greens Lake, NE of mouth
	West	20	29°16'05"	94°59'05"	SE shore of spoil bank W of Greens Cut
	West	21	29°14'15"	95°00'55"	0.2 mile SW of Carancahua Cut
	Carancahua Lake	22	29°14'20"	95°01'35"	S shore of Carancahua Lake
	West	23	29°13'10"	95°01'45"	Carancahua Point
	Halls Lake	24	29°10'45"	95°06'20"	0.2 mile SE of The Narrows
	Halls Lake	25	29°11'15"	95°05'45"	E shore of Halls Lake
	Chocolate	26	29°11'15"	95°06'35"	0.3 mile NW of The Narrows
	Chocolate	27	29°11'45"	95°07'10"	0.2 mile E of Amerada Cut

Table 1. (Cont'd).

Bay system	Bay	Station number	Latitude	Longitude	Station identification
Galveston	Chocolate	28	29° 11' 40"	95° 07' 40"	0.1 mile SW of New Bayou
	Chocolate	29	29° 11' 40"	95° 08' 25"	0.5 mile E of Shell Point
	Chocolate	30	29° 12' 25"	95° 10' 25"	0.2 mile N of Grassy Point
	Chocolate	31	29° 11' 35"	95° 11' 00"	1.5 mile W of Horse Grove Point
	Chocolate	32	29° 11' 15"	95° 09' 25"	0.5 mile S of Horse Grove Point
	Chocolate	33	29° 10' 30"	95° 09' 00"	Just S of Wharton Camp Bayou
	Chocolate	34	29° 09' 35"	95° 09' 10"	1.0 mile S of Wharton Camp Bayou
	West	35	29° 09' 15"	95° 09' 35"	2.1 mile N of Guyton Cut
	West	36	29° 06' 30"	95° 09' 40"	0.5 mile N of Guyton Cut
	Oyster Lake	37	29° 07' 45"	95° 10' 20"	N shore of Oyster Lake
	Oyster Lake	38	29° 07' 05"	95° 10' 55"	SW shore of Oyster Lake
	Bastrop	39	29° 06' 35"	95° 11' 15"	0.1 mile W of mouth of Oyster Lake Bayou
	Bastrop	40	29° 06' 20"	95° 10' 15"	0.7 mile NW of Guyton Cut
	Lost Lake	41	29° 04' 55"	95° 12' 40"	SW shore of Lost Lake
	Bastrop	42	29° 05' 50"	95° 11' 50"	0.5 mile NE of dredge cut between West Bastrop Bay and ICWW
	Bastrop	43	29° 05' 00"	95° 11' 40"	1.3 mile W of Christmas Point
	Bastrop	44	29° 04' 45"	95° 10' 50"	0.3 mile W of Christmas Point
	Christmas	45	29° 04' 25"	95° 11' 05"	0.8 mile SW of Christmas Point
	Christmas	46	29° 03' 45"	95° 12' 10"	2.0 mile SW of Christmas Point
	Christmas	47	29° 02' 50"	95° 13' 15"	1.3 mile NW of Rattlesnake Point
	Christmas	48	29° 01' 55"	95° 11' 45"	0.1 mile NE of mouth of Cedar Cut
	Christmas	49	29° 02' 20"	95° 10' 55"	1.1 mile NE of mouth of Cedar Cut
	Christmas	50	29° 03' 15"	95° 09' 40"	0.2 mile S of mouth of Church-hill Bayou, SE Christmas Bay
	West	51	29° 09' 40"	95° 01' 45"	E side Snake Island Cove
	West	52	29° 10' 20"	95° 01' 20"	0.4 mile E of Maggies Point
	West	53	29° 11' 00"	95° 00' 40"	SW shore Shell Island Point
	West	54	29° 11' 20"	94° 59' 45"	Jumbile Cove

Table 1. (Cont'd).

Bay system	Bay	Station number	Latitude	Longitude	Station identification
Galveston	West	55	29°12'30"	94°58'40"	Carancahua Cove
	West	56	29°12'45"	94°57'20"	W of mouth of Oak Bayou
	West	57	29°12'40"	94°57'50"	S shore of Dana Cove
	West	58	29°13'40"	94°57'05"	N shore of Hoeckers Cove
	West	59	29°14'05"	94°56'25"	SW shore of Starvation Cove
	West	60	29°14'45"	94°55'50"	NW of Melager Cove
	West	61	29°16'15"	94°53'20"	0.6 mile SW of Teichman Point
	West	62	20°17'00"	94°55'40"	SE shore of North Deer Island
	West	63	29°16'15"	94°54'55"	E shore of South Deer Island
	Galveston	64	29°17'25"	94°52'05"	0.1 mile E of SE end of Galveston Causeway
	Galveston	65	29°20'20"	94°49'20"	W shore of Pelican Island, 0.4 mile from ICWW
	Galveston	66	28°21'05"	94°49'35"	NW Pelican Island, S shore of Cove formed by ICWW
	Galveston	67	29°23'45"	94°45'45"	Baffle Point
	Galveston	68	29°25'35"	94°43'25"	0.7 mile SW of Sievers Cove
East	69	29°27'40"	94°41'35"	1.8 mile SW of house on Elm-grove Point	
East	70	29°28'30"	94°40'30"	0.6 mile W of house on Elm-grove Point	
East	71	29°28'35"	94°38'55"	0.5 mile NW of Bob's Cut	
East	72	29°28'50"	94°37'15"	0.8 mile W of Stringree Cut	
East	73	29°29'30"	94°35'55"	0.6 mile NE of Stringree Cut	
East	74	29°30'20"	94°35'40"	Big Pasture Bayou, N shore	
East	75	29°31'50"	94°33'50"	Marsh Point	
East	76	29°31'15"	94°32'25"	1.4 mile SE of Marsh Point	
East	77	29°33'20"	94°31'50"	1.0 mile N of Frozen Point	
East	78	29°34'15"	94°34'20"	Robinson Bayou, 0.1 mile W of mouth	
East	79	29°33'30"	94°36'25"	Second windmill W of Robinson Bayou (2.2 mile W of mouth)	
East	80	29°32'15"	94°41'10"	Stephenson Point	
Trinity	81	29°33'30"	94°46'50"	Vingt-et-un Island, N shore	
Trinity	82	29°36'45"	94°43'10"	0.1 mile S of cut in spoil bank opposite Lone Oak Bayou	



Table 1. (Cont'd).

Bay system	Bay	Station number	Latitude	Longitude	Station identification
Galveston	Trinity	83	29°39'35"	94°42'00"	0.7 mile N of cut in spoil bank opposite Double Bayou
	Trinity	84	29°44'15"	94°41'55"	Bay side of spoil bank opposite Round Point
	Trinity	85	29°45'50"	94°47'45"	1.2 mile NE of Houston Lighting and Power Company's Cedar Bayou Generating Station's discharge canal
	Trinity	86	29°44'45"	94°49'30"	0.6 mile SW of Houston Lighting and Power Company's Cedar Bayou Generating Station's discharge canal
	Trinity	87	29°43'35"	94°50'45"	0.7 mile SW of Point Barrow
	Trinity	88	29°42'15"	94°51'30"	Midway between Point Barrow and Umbrella Point
	Trinity	89	29°40'20"	94°52'10"	Umbrella Point
	Galveston	90	29°39'35"	94°55'50"	Mesquite Knoll
	Galveston	91	29°41'50"	94°57'20"	0.5 mile W of Houston Lighting and Power Company's Cedar Bayou Generating Station's intake canal
	Trinity	92	29°37'15"	94°42'45"	0.4 mile N of cut in spoil bank opposite Lone Oak Bayou
	Galveston	93	29°35'20"	94°59'35"	0.8 mile SW of Red Bluff
	Galveston	94	29°34'55"	95°00'00"	1.5 mile SW of Red Bluff
	West	95	29°12'35"	95°02'35"	1.6 mile NE of Cow Bayou
	East	96	29°32'40"	94°30'00"	1.3 mile E of Frozen Point
	Galveston	97	29°33'20"	95°01'05"	NE shore of island adjacent to Clear Creek Channel
	West	98	29°06'30"	95°06'15"	1.5 mile NE of San Luis Pass
	West	99	29°41'50"	94°41'20"	Inside spoil bank 0.3 mile S of Ash Point
	Galveston	100	29°19'30"	94°49'25"	Middle of W side of Pelican Island

Table 1. (Cont'd).

Bay system	Bay	Station number	Latitude	Longitude	Station identification
East Matagorda	East Matagorda	1	28°45'45"	95°39'35"	Caney Creek Cutoff
	East Matagorda	2	28°44'15"	95°40'55"	1.0 mile NE of Brown Cedar Cut
	East Matagorda	3	28°45'25"	95°40'28"	1.0 mile W of Caney Creek Cutoff
	East Matagorda	4	28°45'00"	95°41'25"	2.0 mile W of Caney Creek Cutoff
	East Matagorda	5	28°44'45"	95°46'10"	Mouth of Live Oak Bayou
	East Matagorda	6	28°44'10"	95°49'20"	Boggy Bayou
	East Matagorda	7	28°43'00"	95°52'40"	S of Micro Tower
	East Matagorda	8	28°42'40"	95°53'30"	W of Little Boggy Bayou Cut
	East Matagorda	9	28°43'10"	95°43'45"	2.0 mile W of Brown Cedar Cut
	East Matagorda	10	28°44'36"	95°42'37"	S of Mouth of Boggy Bayou
	East Matagorda	17	28°44'53"	95°47'13"	S of Pelton Lake
	East Matagorda	18	28°40'52"	95°49'36"	0.5 mile NE of Kain Cove
	East Matagorda	19	28°41'17"	95°48'36"	1.0 mile SW of Eidelbach Flat
	East Matagorda	20	28°42'39"	95°44'47"	Desert Catchall Basin
	East Matagorda	21	28°44'10"	95°43'40"	1.5 mile SW of mouth of Boggy Bayou
	East Matagorda	22	28°44'17"	95°44'35"	E end of Live Oak Bay
	Live Oak	23	28°44'50"	95°45'20"	N shore of Live Oak Bay
	East Matagorda	24	28°43'42"	95°50'45"	1.5 mile W of Boggy Bayou
	East Matagorda	25	28°43'20"	95°51'35"	1.0 mile E of Micro Tower
	East Matagorda	26	28°42'15"	95°54'43"	Mouth of Little Boggy Bayou
	East Matagorda	27	28°40'55"	95°56'38"	NE of Egret Island
	East Matagorda	28	28°40'20"	95°56'05"	St. Mary's Bayou #1
	East Matagorda	29	28°39'40"	95°56'33"	St. Mary's Bayou #2
	East Matagorda	30	28°38'31"	95°57'10"	Bayou E1
	East Matagorda	31	28°37'50"	95°56'10"	Spring Bayou Cove
	East Matagorda	32	28°38'15"	95°55'12"	Burkhart Cove
	East Matagorda	33	28°38'35"	95°53'45"	Boiler Bayou
	East Matagorda	34	28°39'10"	95°52'35"	Hog Island
	East Matagorda	35	28°39'50"	95°51'07"	Cleveland Bayou
	East Matagorda	36	28°40'15"	95°50'20"	Kain Cove
	East Matagorda	37	28°41'15"	95°47'25"	Eidelbach Flat
	East Matagorda	38	28°41'53"	95°46'30"	Oyster Farm Drain

Table 1. (Cont'd).

Bay system	Bay	Station number	Latitude	Longitude	Station identification
Matagorda	Matagorda	1	28° 38' 40"	96° 18' 17"	Wells Point
	Turtle	2	28° 39' 43"	96° 18' 16"	Silver Creek
	Turtle	3	28° 40' 35"	96° 17' 52"	Shell Beach
	Turtle	4	28° 41' 08"	96° 17' 00"	Buttermilk Slough
	Turtle	5	28° 41' 40"	96° 15' 45"	Jensen Point
	Turtle	6	28° 41' 20"	96° 15' 32"	Incinerator
	Turtle	7	28° 40' 20"	96° 16' 55"	Turtle Point
	Matagorda	8	28° 41' 35"	96° 14' 10"	Settergest Marsh
	Tres Palacios	9	28° 44' 47"	96° 11' 10"	Slaughter Flats
	Tres Palacios	10	28° 45' 15"	96° 10' 10"	Tres Palacios River, East
	Tres Palacios	11	28° 44' 10"	96° 10' 51"	Pepper Hill
	Tres Palacios	12	28° 43' 30"	96° 11' 20"	Collegeport Piling
	Tres Palacios	13	28° 42' 37"	96° 10' 54"	Pilkington Bayou
	Tres Palacios	14	28° 41' 40"	96° 11' 30"	Fence Post Reef
	Tres Palacios	15	28° 41' 30"	96° 12' 21"	Redfish Lake
	Tres Palacios	16	28° 39' 53"	96° 12' 56"	Coon Island Point
	Coon Island	17	28° 39' 35"	96° 12' 40"	Coon Island Bayou
	Tres Palacios	18	28° 43' 55"	96° 12' 00"	1 mile N of Grassy Pt.
	Coon Island	19	28° 38' 35"	96° 14' 00"	Oliver Point
	Matagorda	20	28° 37' 53"	96° 13' 22"	Pipeline Crossing
	Matagorda	21	28° 37' 00"	96° 12' 45"	Palacios Bayou Flats
	Matagorda	22	28° 35' 25"	96° 13' 50"	Boat Harbor
	Oyster Lake	23	28° 36' 14"	96° 12' 05"	Rattlesnake Island
	Oyster Lake	24	28° 37' 41"	96° 10' 40"	N Corner, Oyster Lake
	Oyster Lake	25	28° 37' 24"	96° 10' 47"	SE Shoreline, Oyster Lake
	Matagorda	26	28° 35' 44"	96° 11' 00"	ICWW, Southwest
	Matagorda	27	28° 35' 53"	96° 10' 16"	ICWW, Northeast
	Matagorda	28	28° 37' 20"	96° 06' 26"	Mad Island
	Matagorda	29	28° 39' 15"	96° 01' 45"	Shell Oil Cut
	Matagorda	30	28° 39' 15"	96° 59' 25"	Northeast Pocket
	Matagorda	31	28° 35' 22"	96° 02' 43"	Tide Gauge
	Matagorda	32	28° 33' 07"	96° 07' 15"	Watermelon Mott
	Matagorda	33	28° 31' 17"	96° 11' 25"	Oil Well Cut
	Matagorda	34	28° 29' 05"	96° 15' 00"	Poco Agua
	Matagorda	35	28° 25' 00"	96° 21' 35"	Decro Point
	Matagorda	36	28° 27' 10"	96° 29' 30"	La Salle Bayou

Table 1. (Cont'd).

Bay system	Bay	Station number	Latitude	Longitude	Station identification	
Matagorda	Powderhorn Lake	37	28° 30' 00"	96° 29' 05"	Corner Powderhorn Lake	
	Powderhorn Lake	38	28° 29' 00"	96° 30' 42"	Powderhorn Ranch Marsh	
	Powderhorn Lake	39	28° 28' 37"	96° 31' 39"	Powderhorn, West	
	Powderhorn Lake	40	28° 30' 10"	96° 31' 00"	Powderhorn, North Shore	
	Lavaca	41	28° 33' 25"	96° 31' 30"	Indian Point	
	Chocolate Bay	42	28° 34' 55"	96° 35' 36"	Cedar Point	
	Chocolate Bay	43	28° 34' 16"	96° 38' 08"	Tanner Launch	
	Lavaca	44	28° 40' 19"	96° 38' 10"	Maxwell Ditch	
	Lavaca	45	28° 41' 46"	96° 39' 45"	Six Mile Creek	
	Lavaca	46	28° 42' 38"	96° 38' 31"	Garcitas Cove	
	Lavaca	47	28° 43' 05"	96° 37' 11"	Venado West	
	Venado Lake	48	28° 44' 35"	96° 36' 45"	Venado Lake #2	
	Lavaca	49	28° 43' 10"	96° 35' 00"	Venado East	
	Redfish Lake	50	28° 47' 41"	96° 34' 27"	Redfish Lake, Northwest	
	Redfish Lake	51	28° 46' 41"	96° 33' 43"	Redfish Lake, Southeast	
	Lavaca	52	28° 38' 07"	96° 36' 50"	Noble Point	
	Swan Lake	53	28° 45' 00"	96° 34' 09"	Swan Lake, North	
	Swan Lake	54	28° 43' 55"	96° 33' 41"	Swan Lake, East	
	Lavaca	55	28° 41' 47"	96° 33' 47"	Catfish Cove	
	Lavaca	56	28° 39' 24"	96° 34' 25"	Alcoa	
	Lavaca	57	28° 36' 52"	96° 30' 00"	Rhodes Point	
	Cox	58	28° 38' 24"	96° 31' 05"	Cox Point	
	Cox	59	28° 39' 03"	96° 31' 05"	Cox Creek, West	
	Cox	60	28° 38' 34"	96° 30' 35"	Huisache Cove	
	Cox	61	28° 38' 07"	96° 30' 00"	Cox Cove, North	
	Cox	62	28° 37' 24"	96° 30' 00"	Cox Cove, Southeast	
	Keller	63	28° 36' 33"	96° 28' 55"	Mud Point	
	Keller	64	28° 37' 49"	96° 28' 00"	Olivia	
	Keller	65	28° 37' 39"	96° 27' 02"	Smith Ranch House	
	Keller	66	28° 35' 35"	96° 26' 20"	Smith's Slough	
	Keller	67	28° 39' 05"	96° 27' 55"	Keller Creek	
	Keller	68	28° 35' 48"	96° 28' 30"	Smith's Point	
	Lavaca	69	28° 35' 00"	96° 29' 00"	Humble Oil Dock	
	Lavaca	70	28° 34' 15"	96° 29' 18"	Sand Point Lavaca	
	Matagorda		71	28° 35' 25"	96° 26' 20"	Smith's Cedars
	Redfish Lake		72	28° 37' 43"	96° 23' 07"	Redfish Lake, N Pocket

Table 1. (Cont'd).

Bay system	Bay	Station number	Latitude	Longitude	Station identification
Matagorda	Redfish Lake	73	28°37'15"	96°22'55"	Redfish Lake, E Shore
	Redfish Lake	74	28°37'15"	96°23'55"	Redfish Lake, SW Shore
	Salt Lake	75	28°37'50"	96°23'53"	Salt Lake, Pocket
	Salt Lake	76	28°37'55"	96°25'00"	Salt Lake, W Pocket
	Carancahua	77	28°38'26"	96°25'00"	Port Alto, South
	Carancahua	78	28°41'33"	96°24'42"	Port Alto, North
	Carancahua	79	28°42'31"	96°25'55"	Wolf Point Flats
	Carancahua	80	28°44'19"	96°26'18"	Carancahua Bay, North
	Carancahua	81	28°44'32"	96°25'51"	Carancahua Bay, East
	Carancahua	82	28°43'03"	96°25'48"	Cape Carancahua
	Carancahua	83	28°44'05"	96°25'20"	Crescent V, West
	Carancahua	84	28°40'50"	96°23'40"	Sun Oil Pipe line
	Carancahua	85	28°42'29"	96°23'15"	Five Mile Draw
	Carancahua	86	28°39'43"	96°22'16"	Houston Point
	Carancahua	87	28°37'57"	96°21'34"	Schicke Point, Inside
	Carancahua	88	28°37'30"	96°21'34"	Schicke Point, Outside
	Matagorda	89	28°38'20"	96°20'00"	Piper Lake
	Matagorda	90	28°38'30"	96°19'11"	Marine Fisheries Research Station
	Matagorda	91	28°36'28"	95°59'05"	SE Pocket
	Matagorda	92	28°32'10"	96°09'54"	Trout Bayou
	Matagorda	93	28°30'30"	96°12'35"	Cotton Bayou
	Matagorda	94	28°27'25"	96°18'15"	Tom Cherry
	Matagorda	95	28°28'24"	96°25'24"	Broad Bayou
	Matagorda	96	28°30'32"	96°28'47"	Powderhorn Bayou
	Lavaca	97	28°35'00"	96°35'00"	Alamo Beach
	Matagorda	98	28°34'12"	96°28'49"	Sand Point, South
	Matagorda	99	28°37'00"	96°22'55"	Carancahua Pass, West
	Lavaca	100	28°33'50"	96°32'50"	1 mile NW of Magnolia Beach boat launch

Table 1. (Cont'd).

Bay system	Bay	Station number	Latitude	Longitude	Station identification
San Antonio	San Antonio	1	28°23'22"	96°42'35"	Swan Point
	San Antonio	2	28°22'45"	96°41'50"	Mosquito Cove, 1 mile S of Swan Point
	San Antonio	3	28°21'55"	96°42'00"	Mosquito Cove, 1.25 miles N of Mosquito Point
	San Antonio	4	28°19'00"	96°39'15"	W point of Grass Island
	San Antonio	5	28°19'05"	96°37'55"	E point of Grass Island
	Shoalwater	6	28°19'25"	96°38'00"	N point of Grass Island
	San Antonio	7	28°18'15"	96°37'35"	Small island just W of Steamboat Island
	Espiritu Santo	8	28°18'36"	96°37'05"	Middle of E side of Steamboat Island
	Shoalwater	9	28°19'30"	96°36'55"	1 mile from W point of Long Island in Shoalwater Bay
	Espiritu Santo	10	28°19'25"	96°37'35"	1.25 mile from W point of Long Island in Espiritu Santo Bay
	Espiritu Santo	11	28°20'20"	96°35'47"	2.5 miles from W point of Long Island in Espiritu Santo Bay
	Espiritu Santo	12	28°21'10"	96°34'52"	Long Island 0.5 mile W of Lane
	Espiritu Santo	13	28°21'45"	96°33'52"	Long Island 0.5 mile E of Lane
	Espiritu Santo	14	28°22'10"	96°32'55"	Long Island 1.5 miles E of Lane
	Espiritu Santo	15	28°22'47"	96°31'07"	0.5 mile from W point of Dewberry Island
	Espiritu Santo	16	28°23'15"	96°30'10"	1.5 miles from W point of Dewberry Island
	Espiritu Santo	17	28°23'50"	96°29'12"	Dewberry Island 0.5 mile W of Army channel
	Espiritu Santo	18	28°24'13"	96°28'18"	Blackberry Island 0.75 mile E of Army channel
	Espiritu Santo	19	28°24'48"	96°27'12"	Blackberry Island 1.75 miles E of Army channel
	Espiritu Santo	20	28°25'18"	96°26'06"	Blackberry Island at mouth of Barroom Bay
	Espiritu Santo	21	28°23'49"	96°26'12"	1.25 miles E of Bayoucou Point
	Espiritu Santo	22	28°23'00"	96°27'09"	Bayoucou Point
	Espiritu Santo	23	28°22'40"	96°27'20"	N side of Grass Island 0.5 mile from E point

Table 1. (Cont'd).

Bay system	Bay	Station number	Latitude	Longitude	Station identification
San Antonio	Espiritu Santo	24	28°22'15"	96°28'10"	N side of Grass Island 0.5 mile from W point
	Espiritu Santo	25	28°21'35"	96°27'25"	W point of Farwell Island
	Espiritu Santo	26	28°21'50"	96°26'53"	E point of Farwell Island
	Espiritu Santo	27	28°21'15"	96°26'25"	0.5 mile S of second oil well off Saluria Bayou
	Espiritu Santo	28	28°21'00"	96°26'22"	Big Pocket
	Espiritu Santo	29	28°20'33"	96°26'33"	Lighthouse Cove W of derelict boat on shore
	Espiritu Santo	30	28°19'51"	96°28'48"	0.25 mile W of Army hole on Vanderveer Island
	Pringle Lake	31	28°18'51"	96°30'22"	S shore Pringle Lake 2 miles E of Rahal Bayou
	Pringle Lake	32	28°18'22"	96°31'25"	S shore Pringle Lake 1 mile E of Rahal Bayou
	Espiritu Santo	33	28°19'25"	96°31'21"	Pringle Cut in center of Vanderveer Island
	Espiritu Santo	34	28°18'07"	96°33'10"	Rahal Bayou
	Espiritu Santo	35	28°18'05"	96°34'30"	South Pass Lake, E cut
	San Antonio	36	28°17'10"	96°35'53"	South Pass Lake, W cut
	San Antonio	37	28°16'50"	96°36'45"	Long Lake mouth on N shore
	San Antonio	38	28°16'35"	96°37'06"	Island N of Corey Cove
	San Antonio	39	28°16'05"	96°37'50"	Corey Cove Point
	San Antonio	40	28°15'35"	96°37'50"	Pat's Bay mouth on S shore
	San Antonio	41	28°15'12"	96°39'06"	1 mile S Pat's Bay between two guts
	San Antonio	42	28°14'25"	96°39'15"	Mouth of Twin Lakes
	San Antonio	43	28°13'54"	96°39'54"	Cedar Point
	San Antonio	44	28°13'35"	96°40'00"	Mouth of Cedar Lake on S shore
	San Antonio	45	28°13'15"	96°41'00"	1 mile S of Cedar Lake
	San Antonio	46	28°12'30"	96°42'06"	0.5 mile S of Panther Point
	San Antonio	47	28°12'05"	96°41'55"	Panther Point Lake, just inside mouth on S shore
	San Antonio	48	28°11'45"	96°42'55"	1 mile S of Panther Point Lake mouth
	San Antonio	49	28°11'20"	96°45'05"	Mouth of Cottonwood Bayou

Table 1. (Cont'd).

Bay system	Bay	Station number	Latitude	Longitude	Station identification	
San Antonio	San Antonio	50	28°11'21"	96°47'24"	Ayres Point	
	Ayres	51	28°10'30"	96°48'55"	Point S of Ayres Point	
	Ayres	52	28°10'05"	96°49'10"	Ayres Dugout	
	Ayres	53	28°11'20"	96°50'00"	Rattlesnake Island	
	Mustang Lake	54	28°13'50"	96°47'30"	Mouth of Mustang Lake E shore	
	San Antonio	55	28°14'43"	96°46'35"	Point of land N of Marker 35	
	San Antonio	56	28°15'20"	96°47'15"	Live Oak Point	
	San Antonio	57	28°16'27"	96°47'47"	Dagger Point	
	San Antonio	58	28°19'17"	96°47'45"	Webb Point	
	San Antonio	59	28°20'21"	96°47'33"	0.5 mile S of Hopper Landing	
	San Antonio	60	28°21'48"	96°47'51"	McDowell Point	
	Hynes	61	28°22'22"	96°49'00"	1 mile N of McDowell Point	
	Hynes	62	28°25'20"	96°50'51"	Point of land in center head of Hynes Bay	
	Hynes	63	28°25'40"	96°49'40"	1 mile S of Townsend Bayou	
	Hynes	64	28°25'10"	96°48'45"	Opposite steel gate in marsh	
	Hynes	65	28°24'33"	96°47'50"	Swan Lake Bayou N of mouth	
	Hynes	66	28°23'54"	96°46'37"	Grassey Point	
	San Antonio	San Antonio	67	28°24'25"	96°47'20"	Midway between Grassey Pint and Marsh Point
	Guadalupe	Guadalupe	68	28°25'25"	96°45'50"	Foster Point
		Hynes	69	28°24'15"	96°51'00"	Opposite tall cylindrical tower
		San Antonio	70	28°14'00"	96°47'50"	Mouth of Mustang Lake W shore
		San Antonio	72	28°20'18"	96°42'01"	Opposite Channel Marker 13
San Antonio		73	28°19'30"	96°41'30"	Opposite Channel Marker 11	
Long Lake		78	27°17'00"	96°35'50"	N shore of Long Lake	
Long Lake		79	28°16'35"	96°35'45"	S shore of Long Lake	
Pats		80	28°15'55"	96°37'05"	N shore of Pats Bay	
San Antonio		81	28°13'40"	96°47'05"	1 mile S of False Live Oak Pt.	
San Antonio		82	28°11'25"	96°46'45"	1 mile E of Ayres Point	
San Antonio		83	28°11'25"	96°44'00"	2 mile S of Panther Point Lake mouth	



Table 1. (Cont'd).

Bay system	Bay	Station number	Latitude	Longitude	Station identification
Aransas	Aransas	1	28°01'50"	97°02'00"	Off of bulkhead at NE end of Rockport Beach
	Aransas	2	28°07'28"	96°59'00"	Off S side of Goose Island near restrooms
	Aransas	3	27°59'05"	97°04'00"	Halfway between Turtle Bayou and ICWW Marker 7
	Aransas	4	27°57'15"	97°04'15"	Just N of oil channel halfway between Big Bayou and Trout Bayou
	Redfish	5	27°56'00"	97°05'15"	Off second island NW of Big Bayou in Redfish Bay
	Copano	6	28°03'22"	97°08'10"	Off SW tip of Rattlesnake Point
	Aransas	7	27°55'13"	97°04'22"	Just N of mouth of Corpus Christi Bayou
	Aransas	8	27°53'40"	97°02'42"	Off NE tip of Lydia Ann Island
	Aransas	9	27°55'17"	97°01'03"	1.0 mile SW of tanks on San Jose Island behind Mud Island
	Aransas	10	27°55'43"	97°02'38"	On SW tip of Mud Island
	Aransas	11	27°56'42"	97°01'28"	Middle of Mud Island N side
	Aransas	12	27°56'18"	97°01'22"	Middle of Mud Island S side
	Aransas	13	27°57'05"	96°59'35"	On NE tip of Mud Island
	Aransas	14	27°58'06"	96°58'27"	1.0 mile N of San Jose Ranch house
	Aransas	15	27°59'00"	96°58'07"	2.0 miles N of San Jose Ranch house within Allyn's Bight
	Aransas	16	28°07'37"	96°55'42"	On Blackjack Peninsula at Dunham Point
	Aransas	17	28°01'14"	96°58'00"	On San Jose Island, 1.5 miles NE of Allyn's Lake
	Aransas	18	28°01'55"	97°01'29"	Off SE tip of Key Allegro Isle
	Aransas	19	28°04'00"	96°57'40"	Off Deadman Island NW of Long Reef
	Aransas	20	28°03'12"	96°56'44"	On Big Island at SE end of Long Reef

Table 1. (Cont'd).

Bay system	Bay	Station number	Latitude	Longitude	Station identification
Aransas	Aransas	21	28°04'18"	96°55'55"	Midway between Long Reef and Jay Bird Reef
	Aransas	22	28°05'10"	96°55'33"	On San Jose Island near Jay Bird Reef marker
	Aransas	23	28°06'03"	96°54'22"	S of Spalding Reef near TPWD post marker
	Aransas	24	28°06'40"	96°53'25"	SE end of Shell Reef as mouth of Spalding Bight
	Aransas	25	28°06'48"	96°55'26"	On SE side of SW tip of Dunham Island
	Dunham	26	28°07'57"	96°55'05"	On Grass Island at mouth of Dunham Bay
	Dunham	27	28°08'53"	96°54'22"	In NE most end of Dunham Bay
	Aransas	28	28°59'52"	96°58'47"	At the break between Allyn's Lake and the bay 200 yds N of duck blind
	Aransas	29	28°07'20"	96°56'45"	Midway between Dunham and Blackjack Point
	Aransas	30	28°00'00"	97°03'31"	Just S of Perry Bass docking facilities
	Aransas	31	28°06'15"	97°01'07"	On NE tip of Live Oak Point near reef marker
	Aransas	32	28°05'21"	97°02'00"	Off Fulton beach about 1.0 mile S of Racquet Club in front of Dr. Foster's residence
	Aransas	33	28°04'16"	97°02'07"	Along bulkhead shoreline just S of Sandollar Motel
	Aransas	34	28°04'38"	96°57'53"	On island at end of Halfmoon Reef near ICWW Marker 22
	Carlos Copano	35	28°07'05"	96°53'07"	In SE corner of Carlos Bay
	Copano	36	28°05'05"	97°04'34"	Approximately 1.0 mile SW of airport
	Mesquite	37	28°07'09"	96°51'08"	1.5 miles W of mouth of Cedar Bayou
	Mesquite	38	28°06'58"	96°49'55"	At mouth of Cedar Bayou, W side

Table 1. (Cont'd).

Bay system	Bay	Station number	Latitude	Longitude	Station identification
Aransas	Mesquite	39	28°07'18"	96°48'50"	In SE Mesquite Bay about 1.0 mile NE of mouth of Cedar bayou
	Mesquite	40	28°08'21"	96°48'07"	At end of Bray Cove
	Mesquite	41	28°08'55"	96°49'04"	Matagorda Island, 1.5 miles S of Ayres Dugout
	Mesquite	42	28°10'01"	96°49'55"	At Ayres Dugout on the Mesquite Bay side
	Mesquite	43	28°10'23"	96°51'07"	Off Roddy Island in N part of Mesquite Bay
	Mesquite	44	28°09'55"	96°52'32"	1.0 mile SW of Sundown-Mesquite Bay Pass
	Carlos	45	28°08'52"	96°53'08"	S side of Cedar Point
	Carlos	46	28°07'50"	96°54'15"	On NE side of Cape Carlos by first refuge marker
	St. Charles	47	28°08'03"	96°57'38"	Off Bird Point inside St. Charles Bay
	St. Charles	48	28°09'57"	96°56'53"	Just S of Egg Point near clump of trees and refuge marker
	St. Charles	49	28°10'35"	96°56'18"	Point of land just N of Bill Mott Bayou
	St. Charles	50	28°12'05"	96°55'43"	Between Little Devil Bayou and Big Devil Bayou
	St. Charles	51	28°13'00"	96°56'33"	At Meile Dietrich Point
	St. Charles	52	28°14'32"	96°55'34"	Just N of McHugh Bayou
	St. Charles	53	28°16'10"	96°54'55"	At mouth of Twin Creek
	St. Charles	54	28°15'00"	96°56'30"	At mouth of Salt Creek outside cove
	St. Charles	55	28°13'41"	96°57'26"	1.5 miles SW of mouth of Salt Creek
	St. Charles	56	28°13'04"	96°58'47"	Inside Cavasso Creek close to Highway 35
	St. Charles	57	28°11'55"	96°56'50"	0.5 mile NW of Big Sharps Point
	St. Charles	58	28°10'53"	96°57'16"	0.5 mile SW of Little Sharps Point
	St. Charles	59	28°10'00"	96°58'00"	On S side of Cow Chip Slough
	St. Charles	60	28°08'53"	96°58'20"	Just N of the Big Tree

Table 1. (Cont'd).

Bay system	Bay	Station number	Latitude	Longitude	Station identification
Aransas	St. Charles Copano	61	28°07'57"	96°58'28"	On SE tip of Hail Point
		62	28°08'10"	97°00'37"	On Lamar Peninsula on W side at N end of Copano Causeway
Copano	Copano	63	28°09'01"	97°01'42"	On W tip of Newcomb Point
		64	28°09'43"	97°01'08"	Just S of Holiday Beach channel; Palmetto Point
Copano	Copano	65	28°11'00"	97°01'05"	At W end of Shell Point near duck blind
Copano	Copano	66	28°11'52"	97°00'42"	On a point of land 1.0 mile E of Turtle Pen Point
Copano	Copano	67	28°12'07"	97°02'07"	On N side of the mouth of Copano Creek
Copano	Copano	68	28°11'54"	97°01'14"	On S side of Turtle Pen Point
		69	28°11'18"	97°02'21"	1.5 miles SW of Turtle Pen Point
Copano	Copano	70	28°10'41"	97°04'00"	About 3.0 miles SW of Turtle Pen Point
Copano	Copano	71	28°10'00"	97°05'27"	About 4.5 miles SW of Turtle Pen Point
Copano Mission	Copano	72	28°08'57"	97°07'22"	Just ot the NW of Copano Reef
		73	28°10'00"	97°08'27"	About 1.5 mile N of mouth of Mission Bay
Copano	Copano	74	28°07'57"	97°09'27"	Between the mouth of Mission Bay and Shellbank Reef
Copano	Copano	75	28°06'41"	97°11'15"	Approximately 1.5 miles NE of Bayside
Copano	Copano	76	28°05'32"	97°13'28"	0.2 mile W of bridge at Black Point
Copano	Copano	77	28°03'45"	97°13'22"	On S side of the mouth of the Aransas River
Copano	Copano	78	28°04'18"	97°12'39"	0.5 mile E of the S end of Bay-side bridge on Egery Island
Copano	Copano	79	28°03'39"	97°11'05"	2.0 miles SE of the S end of Bayside Bridge; Rincon de la Cera

Table 1. (Cont'd).

Bay system	Bay	Station number	Latitude	Longitude	Station identification
Aransas	Copano	80	28°03'09"	97°09'07"	On N side at the E most island forming Swan Lake
	Port	81	28°01'57"	97°08'53"	On NW end of the old bridge ruins across Port Bay
	Port	82	28°01'15"	97°09'14"	1.0 mile SW of Port Bay Bait Stand, on E tip of land forming horseshoe
	Port	83	28°00'17"	97°09'23"	On point of land 0.8 mile NE of Highway 881 bridge on W side of bay
	Port	84	27°59'29"	97°10'15"	On E shore just S of Highway 881 bridge
	Port	85	27°58'53"	97°10'40"	On W shore 1.0 mile SW of Highway 881 bridge
	Port	86	27°59'54"	97°08'56"	0.8 mile due S of Port Bay ranch house near slough
	Port	87	28°01'05"	97°08'31"	0.5 mile S of E side of old bridge ruins
	Port	88	28°01'45"	97°07'47"	0.5 mile E of Port Bay Bait Stand
	Port	89	28°02'19"	97°07'48"	At point of land forming NW boundary of Italian Bend
	Copano	90	28°04'38"	97°06'03"	Hannibal Point
	Copano	91	28°05'50"	97°03'04"	The third T-head NE of Copano Village; close to airport
	Copano	92	28°07'03"	97°03'12"	On W tip of Redfish Point near old barge
	Mesquite	93	28°08'13"	96°53'21"	In Mesquite Bay 2.5 miles NW from mouth of Cedar Bayou
	Redfish	94	27°54'10"	97°05'47"	On S side of NE tip of Hog Island
	Aransas	95	28°02'27"	96°57'02"	0.5 mile SW of Pauls Mott reef marker
	Redfish	96	27°58'22"	97°04'50"	Off ICWW spoil near oil well inside Estes Cove

Table 1. (Cont'd).

Bay system	Bay	Station number	Latitude	Longitude	Station identification
Aransas	Mission	97	28°08'37"	97°08'20"	Just inside Mission Bay mouth on E side
	Mission	98	28°08'05"	97°10'10"	In Mission Bay on W shore due S of river entrance
	Copano	99	28°04'07"	97°05'45"	Inside Salt Lake off well pads
	Redfish	100	27°54'47"	97°07'42"	1.0 mile N of Aransas Pass Harbor, W of ICWW Marker 35

Table 1. (Cont'd).

Bay system	Bay	Station number	Latitude	Longitude	Station identification
Corpus Christi	Nueces	1	27°49'12"	97°27'45"	2 miles W of westerly powerlines on S shore
	Nueces	2	27°52'52"	97°20'11"	2 miles NE of clay pits
	Nueces	3	27°52'09"	97°20'30"	0.2 mile NW of old Ramada Inn
	Nueces	4	27°52'50"	97°21'28"	1 mile E of clay pits
	Nueces	5	27°52'15"	97°26'27"	1 mile W of westerly powerlines on N shore
	Nueces	6	27°52'12"	97°25'05"	0.5 mile E of westerly powerlines on N shore
Corpus Christi	Corpus Christi	7	27°51'24"	97°20'42"	0.8 mile N of Indian Point pier
	Nueces	8	27°53'00"	97°29'39"	0.5 mile NW of shallow cove on N shore
	Nueces	9	27°51'47"	97°27'52"	On E shore of first cove to the E of White Point
	Nueces	10	27°52'30"	97°30'40"	3 miles W and N of river cut
	Nueces	11	27°51'10"	97°30'00"	0.5 mile W of river cut on S shore
	Nueces	12	27°52'00"	97°29'00"	On W shore of White Point
	Nueces	13	27°52'28"	97°22'38"	Just W of clay pits
	Nueces	14	27°52'29"	97°23'38"	0.2 mile W of easterly powerlines on N shore
	Nueces	15	27°50'14"	97°23'15"	Just SW of the W.R.I.P. canal
	Nueces	16	27°50'15"	97°29'23"	Due S of island at Nueces River mouth
	Nueces	17	27°49'36"	97°25'38"	0.5 mile W of westerly powerlines on S shore
Corpus Christi	Corpus Christi	18	27°41'34"	97°11'26"	0.2 mile S of water exchange pass (W.E.P.)
	Corpus Christi	19	27°46'00"	97°09'53"	Just S of tanks on NE end at Shamrock Island
	Corpus Christi	20	27°45'05"	97°08'49"	0.2 mile S of sportsmen club cabin
	Corpus Christi	21	27°46'35"	97°07'54"	0.2 mile NE of Sinclair Cut
	Corpus Christi	22	27°45'11"	97°10'20"	Extreme southern tip of Shamrock Island

Table 1. (Cont'd).

Bay system	Bay	Station number	Latitude	Longitude	Station identification
Corpus Christi	Corpus Christi	23	27°50'28"	97°09'41"	0.2 mile S of Dagger Point on S shore
	Corpus Christi	24	27°43'27"	97°10'05"	0.5 mile S of boat cove by Tenneco pumping station
	Corpus Christi	25	27°49'53"	97°10'26"	0.2 mile N of southern tip of Dagger Island on S shore
	Nueces	26	27°51'15"	97°29'05"	Off N side of spoil island, 0.5 mile N of river cut
	Corpus Christi	27	27°42'40"	97°10'32"	1 mile N of W.E.P.
	Corpus Christi	28	27°50'51"	97°14'09"	Welder Point, just NW of house on bluff
	Corpus Christi	29	27°42'22"	97°17'26"	0.5 mile NW of N.A.S. bulkheads
	Corpus Christi	30	27°52'29"	97°18'14"	2 miles W of jetties on La Quinta shore
	Corpus Christi	31	27°51'58"	97°19'37"	2 miles NE of Indian Point Pier
	Nueces	32	27°51'30"	97°21'45"	On spoil area, 0.5 mile NE of Nueces Bay causeway.
	Corpus Christi	33	27°49'50"	97°22'48"	On the beach just SW of Rincon Point
	Corpus Christi	34	27°45'54"	97°22'56"	1 mile SE of Holiday Inn on Ocean Drive
	Corpus Christi	35	27°43'28"	97°20'40"	0.8 mile NW of Oso Fishing Pier
	Corpus Christi	36	27°52'48"	97°16'45"	0.8 mile W of jetties on La Quinta shore
	Corpus Christi	37	27°41'42"	97°14'51"	On N shore of Demit Island
	Corpus Christi	38	27°42'51"	97°19'09"	0.8 mile SE of Oso Fishing Pier
	Corpus Christi	39	27°41'18"	97°13'17"	N shore of spoil area near ICWW Marker 3
	Corpus Christi	40	27°45'14"	97°09'29"	0.2 mile N of Glenn Cove
	Corpus Christi	41	27°46'22"	97°08'49"	0.5 mile SW at Sinclair Cut, N of tanks
	Redfish	42	27°50'12"	97°10'11"	Middle of N shore at Dagger Point
	Corpus Christi	43	27°49'40"	97°10'46"	On S shore of spoil area just SW of Dagger Island



Table 1. (Cont'd).

Bay system	Bay	Station number	Latitude	Longitude	Station identification
Corpus Christi	Corpus Christi	44	27°50'46"	97°09'22"	On S shore of spoil area,
	Redfish	45	27°51'03"	97°08'08"	0.2 mile NE of Dagger Island
	Corpus Christi	47	27°44'28"	97°22'06"	On SE shore of S. Ransom Island
	Redfish	48	27°52'15"	97°08'04"	2.25 miles NW of Oso Fishing Pier
	Redfish	49	27°52'11"	97°08'07"	In the middle of E shore of N Ransom Island
	Redfish	50	27°53'15"	97°07'01"	In the middle of W shore of N Ransom Island
	Redfish	51	27°51'25"	97°09'46"	On W shore of Stedman Island
	Corpus Christi	52	27°49'26"	97°07'55"	0.25 mile E of ICWW Marker 52 on NE side of spoil
	Redfish	53	27°52'41"	97°08'20"	On SW shore of Point of Mustang
	Corpus Christi	54	27°51'01"	97°21'34"	On SW shore of long spoil area just N of N Ransom Island
	Corpus Christi	55	27°50'08"	97°07'14"	0.25 mile SW of Indian Point Pier
	Redfish	56	27°50'51"	97°07'21"	0.3 mile NE of CCSC Marker 14
	Corpus Christi	57	27°49'30"	97°07'10"	0.8 mile E of S Ransom Island on spoil area
	Corpus Christi	58	27°45'21"	97°08'21"	1 mile E of Pt. of Mustang on S shore
	Corpus Christi	59	27°49'20"	97°08'56"	0.5 mile SE of green cabin in Shamrock Cove
	Corpus Christi	60	27°49'18"	97°09'43"	0.2 mile SSW of CCSC Marker 19 on N side of spoil area
	Corpus Christi	61	27°48'56"	97°11'15"	0.3 mile E of CCSC Marker 25 on N side of spoil area just W of tanks
	Corpus Christi	62	27°48'45"	97°11'41"	On N side of spoil area just S of CCSC Marker 31
	Corpus Christi	63	27°48'26"	97°13'05"	On S shore, 1.5 miles NE of W tip of chain of CCSC spoil areas
	Corpus Christi				0.2 mile SE of W tip of chain of CCSC spoil area

Table 1. (Cont'd).

Bay system	Bay	Station number	Latitude	Longitude	Station identification
Corpus Christi	Corpus Christi	64	27°48'47"	97°12'29"	0.2 mile SE of CCSC Marker 36
	Corpus Christi	65	27°49'28"	97°13'10"	Just N of La Quinta Channel Marker 6 in front of houses
	Corpus Christi	66	27°50'05"	97°13'21"	Just SW of Ingleside Cove public ramp
	Corpus Christi	67	27°49'59"	97°13'38"	On N side of island just S of La Quinta Channel Marker 8
	Corpus Christi	68	27°48'38"	97°14'07"	0.8 mile SE of Ingleside Point
	Redfish	70	27°51'22"	97°08'48"	Off SW tip of island that is
	Corpus Christi	71	27°52'22"	97°15'42"	0.5 mile SW of N Ransom Island Just SW of La Quinta Channel Marker 19
	Corpus Christi	72	27°44'36"	97°09'38"	Just SW of Arco plant at bay end of Wilson's Cut
	Redfish	73	27°53'33"	97°07'32"	0.5 mile SE of Conn Brown Harbor Bridge on S shore of spoil area
	Oso	74	27°42'25"	97°18'30"	On spoil just S of Oso Bridge
	Redfish	75	27°52'14"	97°05'59"	At S end of oil well cut, 1.25 miles SE of Fin and Feather Marina
	Corpus Christi	76	27°50'24"	97°06'06"	On N side of spoil area, 0.2 mile N of CCSC Marker 8
	Corpus Christi	77	27°45'34"	97°08'57"	Pink Shack Cove
	Corpus Christi	78	27°49'00"	97°07'30"	East Flats
	Redfish	79	27°52'31"	97°08'48"	0.2 mile SE of ICWW Marker 44 on S shore of spoil area
	Corpus Christi	80	27°44'04"	97°09'39"	Boat cove

Table 1. (Cont'd).

Bay system	Bay	Station number	Latitude	Longitude	Station identification
Laguna Madre	Upper Laguna Madre	1	27°40'40"	97°15'03"	1.0 miles SSW of E tip of Demit Island
	Upper Laguna Madre	2	27°19'40"	97°24'24"	1.2 miles NNW of ICWW Flasher 207
	Upper Laguna Madre	3	27°14'58"	97°25'32"	0.4 mile ESE of ICWW Marker 13(S)
	Baffin	4	27°17'02"	97°36'45"	3.2 miles E of Riviera Beach
	Baffin	5	27°18'11"	97°39'15"	1.3 miles NNE of Riviera Beach
	Laguna Salada	6	27°16'33"	97°38'57"	1.2 miles SE of Riviera Beach
	Upper Laguna Madre	7	27°41'30"	97°15'01"	0.5 mile ENE of Naval Air Station Corpus Christi Marina
	Laguna Salada	8	27°17'00"	97°40'18"	0.7 mile WSW of Riviera Beach
	Upper Laguna Madre	9	27°40'50"	97°14'06"	0.8 mile ESE of Demit Island
	Upper Laguna Madre	10	27°40'25"	97°15'20"	1.3 miles SW of Demit Island
	Upper Laguna Madre	11	27°40'20"	97°15'57"	1.7 miles SW of Demit Island
	Upper Laguna Madre	12	27°39'20"	97°13'40"	2.0 miles WNW of Corpus Christi Pass
	Upper Laguna Madre	14	27°38'28"	97°13'45"	2.0 miles WSW of Corpus Christi Pass
	Upper Laguna Madre	15	27°39'30"	97°16'25"	2.8 miles SW of Demit Island
	Upper Laguna Madre	16	27°38'25"	97°15'25"	3.0 miles NE of Pita Island
	Upper Laguna Madre	17	27°37'47"	97°15'45"	2.3 miles NE of Pita Island
	Upper Laguna Madre	18	27°37'20"	97°16'20"	1.4 miles NE of Pita Island
	Upper Laguna Madre	19	27°36'00"	97°16'00"	0.3 miles ESE of Pita Island
	Upper Laguna Madre	20	27°36'30"	97°17'55"	0.6 mile NW of Pita Island
	Upper Laguna Madre	21	27°35'40"	97°17'40"	0.6 mile SW of Pita Island
	Upper Laguna Madre	22	27°32'08"	97°17'10"	0.9 mile NNE of North Bird Island
	Upper Laguna Madre	23	27°33'10"	97°19'35"	3.0 miles NW of North Bird Island
	Upper Laguna Madre	24	27°27'10"	97°19'55"	2.5 miles SSE of South Bird Island
	Upper Laguna Madre	25	27°22'08"	97°21'30"	8.6 miles SSW of South Bird Island
	Alazan	26	27°20'25"	97°31'52"	3.5 miles NNE of Starvation Point

Table 1. (Cont'd).

Bay system	Bay	Station number	Latitude	Longitude	Station identification
Laguna Madre	Cayo del Grullo	27	27°19'32"	97°41'00"	0.7 mile SE of Loyola Beach
		28	27°16'10"	97°41'20"	1.4 miles ESE of Williamson's Boat Dock
	Laguna Salada	29	27°16'31"	97°17'35"	0.2 mile ESE of Williamson's Boat Dock
	Upper Laguna Madre	30	27°36'08"	97°17'35"	SW shore of Pita Island
		31	27°34'20"	97°15'36"	2.4 miles W of Bob Hall Pier on Padre Island
	Upper Laguna Madre	32	27°34'33"	97°15'55"	2.2 miles SE of Pita Island
		33	27°35'03"	97°18'15"	1.5 miles SW of Pita Island
	Upper Laguna Madre	34	27°34'02"	97°16'40"	2.3 miles SSE of Pita Island
		35	27°35'58"	97°16'15"	3.1 miles NNE of North Bird Island
	Upper Laguna Madre	36	27°34'24"	97°19'10"	2.5 miles SW of Pita Island
		37	27°33'25"	97°16'38"	2.3 miles NNE of North Bird Island
	Upper Laguna Madre	38	27°31'55"	97°20'10"	2.8 miles WNW of North Bird Island
		39	27°30'30"	97°18'00"	0.8 mile SW of North Bird Island
	Upper Laguna Madre	40	27°31'00"	97°20'35"	3.2 miles W of North Bird Island
		41	27°29'50"	97°20'48"	2.5 miles W of South Bird Island
	Upper Laguna Madre	42	27°29'00"	97°18'25"	0.7 mile S of South Bird Island
		43	27°28'10"	97°21'28"	3.3 miles WSW of South Bird Island
	Upper Laguna Madre	44	27°26'42"	97°20'40"	3.7 miles SW of South Bird Island
		45	27°27'57"	97°21'48"	1.6 miles WNW of ICWW Marker 139
	Upper Laguna Madre	46	27°26'00"	97°19'50"	1.9 miles S of ICWW Marker 127
		47	27°25'35"	97°20'41"	0.9 mile SSW of ICWW Marker 139
	Upper Laguna Madre	48	27°25'10"	97°19'49"	3.0 miles S of ICWW Marker 127
		49	27°25'50"	97°22'06"	1.8 miles WSW of ICWW Marker 139

Table 1. (Cont'd).

Bay system	Bay	Station number	Latitude	Longitude	Station identification
Laguna Madre	Upper Laguna Madre	50	27°23'48"	97°20'27"	1.5 miles SE of ICWW Marker 151
	Upper Laguna Madre	51	27°23'32"	97°21'45"	0.8 mile NE of ICWW Flasher 169
	Upper Laguna Madre	52	27°22'56"	97°21'04"	1.3 miles E of ICWW Flasher 169
	Upper Laguna Madre	53	27°21'19"	97°21'45"	1.2 miles ESE of ICWW Marker 181
	Upper Laguna Madre	54	27°20'31"	97°24'00"	0.7 mile WNW of ICWW Marker 193
	Upper Laguna Madre	55	27°18'40"	97°23'51"	0.2 mile SE of ICWW Flasher 207
	Upper Laguna Madre	56	27°14'00"	97°25'40"	0.8 mile SW of ICWW Flasher 19(S)
	Upper Laguna Madre	57	27°12'42"	97°25'49"	0.6 mile WSW of ICWW Marker 31(S)
	Upper Laguna Madre	58	27°12'20"	97°25'36"	0.6 mile S of ICWW Marker 31(S)
	Upper Laguna Madre	59	27°11'49"	97°26'08"	0.6 mile NW of ICWW Flasher 43(S)
	Upper Laguna Madre	60	27°10'39"	97°25'45"	0.7 mile NNE of ICWW Marker 55(S)
	Upper Laguna Madre	61	27°10'07"	97°26'30"	0.5 mile WNW of ICWW Marker 55(S)
	Upper Laguna Madre	62	27°09'56"	97°25'54"	0.1 mile SE of ICWW Marker 55(S)
	Upper Laguna Madre	63	27°08'26"	97°26'19"	0.1 mile S of ICWW Marker 67(S)
	Baffin	64	27°18'27"	97°27'49"	3.7 miles WNW of ICWW Marker 217
	Baffin	65	27°15'07"	97°28'17"	3.5 miles WNW of ICWW Flasher 19(S)
	Baffin	66	27°17'37"	97°29'13"	1.8 miles NE of E Kleberg Point
	Baffin	67	27°14'25"	97°30'15"	2.4 miles S of E Kleberg Point
	Alazan	68	27°18'45"	97°29'48"	3.3 miles ENE of Starvation Point
	Alazan	69	27°19'40"	97°30'22"	3.3 miles NE of Starvation Point
	Alazan	70	27°18'20"	97°31'04"	2.2 miles NNW of E Kleberg Point
	Alazan	71	27°19'53"	97°32'43"	2.8 miles N of Starvation Point
	Baffin	72	27°13'43"	97°32'41"	4.0 miles S of Starvation Point
	Alazan	73	27°17'30"	97°36'03"	0.9 mile NE of Kleberg Point
	Baffin	74	27°15'47"	97°38'27"	0.8 mile SSE of Pie de Gallo
	Laguna Salada	75	27°16'20"	97°40'00"	1.0 mile S of Riviera Beach
	Laguna Salada	76	27°15'55"	97°42'45"	0.8 mile SSW of Williamson's Boat Dock
	Laguna Salada	77	27°15'45"	97°43'30"	1.5 miles SW of Williamson's Boat Dock
	Laguna Salada	78	27°16'55"	97°41'18"	1.5 miles WSW of Riviera Beach
	Baffin	79	27°17'20"	97°39'40"	Baffin Bay shore immediately E of Riviera Beach
	Cayo del Grullo	80	27°21'15"	97°41'45"	1.3 mile N of Loyola Beach
	Cayo del Grullo	81	27°21'56"	97°40'34"	2.5 miles NNE of Loyola Beach
	Laguna Madre	82	27°20'35"	97°40'00"	1.7 miles ENE of Loyola Beach

Table 1. (Cont'd).

Bay system	Bay	Station number	Latitude	Longitude	Station identification
Laguna Madre	Cayo del Grullo	83	27°19'43"	97°39'30"	ENE of Kleberg County Kaufer Park
	Cayo del Grullo	84	27°18'09"	97°39'00"	2.0 miles NE of Riviera Beach
	Upper Laguna Madre	85	27°35'16"	97°15'50"	1.8 mile SE of Pita Island
	Upper Laguna Madre	86	27°33'28"	97°15'50"	3.3 mile SSE of Pita Island
	Upper Laguna Madre	87	27°31'11"	97°17'30"	On W shore of N Bird Island
	Upper Laguna Madre	88	27°29'40"	97°17'45"	0.5 mile E of S Bird Island
	Upper Laguna Madre	89	27°24'20"	97°22'10"	1.2 mile WSW of Marker 155
	Upper Laguna Madre	90	27°23'07"	97°22'55"	0.8 mile W of Flasher 169
	Upper Laguna Madre	91	27°21'47"	97°23'30"	0.7 mile W of Marker 181
	Baffin	92	27°19'04"	97°25'12"	1.2 mile WNW of Flasher 207
	Cayo del Grullo	93	27°19'32"	97°38'32"	1.7 mile N of Sandy Hook
	Cayo del Grullo	94	27°18'35"	97°40'09"	1.0 mile WNW of Neubauer Point
	Baffin	95	27°14'30"	97°35'00"	2.0 miles SE of Kleberg Point
	Upper Laguna Madre	96	27°20'50"	97°23'00"	1.5 mile NE of Point of Rocks
	Upper Laguna Madre	97	27°08'40"	97°26'10"	0.2 mile E of old Marker 185
	Alazan	98	27°23'20"	97°29'10"	0.5 mile SSW of Alazan Mott
	Laguna Salada	99	27°16'10"	97°43'47"	0.8 mile SW of Williamson's Boat Dock

Table 1. (Cont'd).

Bay system	Bay	Station number	Latitude	Longitude	Station identification
Laguna Madre	Lower Laguna Madre	1	26°23'40"	97°19'35"	NW tip of Green Island
	Lower Laguna Madre	2	26°21'10"	97°19'30"	W side of dump W of ICWW Marker 2
	Lower Laguna Madre	3	26°22'00'	97°19'20"	Dump off mouth of Arroyo Colorado
	Lower Laguna Madre	4	26°23'15"	97°19'20"	SW tip of Green Island
	Lower Laguna Madre	5	26°03'10"	97°11'50"	S end of Long Island at Port Isabel
	Lower Laguna Madre	6	26°48'00"	97°28'20"	W of ICWW Marker 223A
	Lower Laguna Madre	7	26°45'15"	97°28'10"	W of ICWW Marker 237
	Lower Laguna Madre	8	26°44'00"	97°28'10"	W of ICWW Marker 241
	Lower Laguna Madre	9	26°42'30"	97°28'00"	W of ICWW Marker 245
	Lower Laguna Madre	10	26°40'40"	97°27'30"	W of ICWW Marker 253
	Lower Laguna Madre	11	26°39'40"	97°27'15"	W of ICWW Marker 259
	Lower Laguna Madre	12	26°39'10"	97°27'10"	W of ICWW Marker 261A
	Lower Laguna Madre	13	26°38'15"	97°26'45"	W of ICWW Marker 265
	Lower Laguna Madre	14	26°36'55"	97°26'50"	W of ICWW Marker 269
	Lower Laguna Madre	15	26°35'50"	97°20'15"	W of ICWW Marker 273A
	Lower Laguna Madre	16	26°33'30"	97°22'25"	S side of dump between Mansfield channel Markers 34 and 36
	Lower Laguna Madre	17	26°31'40"	97°25'11"	W of ICWW Marker 289
	Lower Laguna Madre	18	26°30'15"	97°24'20"	W of ICWW Marker 293A
	Lower Laguna Madre	19	26°31'48"	97°24'20"	W side of dump at ICWW Marker 289
	Lower Laguna Madre	20	26°30'50"	97°23'50"	W side of dump at ICWW Marker 293
	Lower Laguna Madre	21	26°29'50"	97°23'30"	W side of dump by ICWW Marker 297A
	Lower Laguna Madre	22	26°17'35"	97°17'20"	E first dump of Three Islands
	Lower Laguna Madre	23	26°18'05"	97°17'35"	Dump just E of ICWW Marker 33
	Lower Laguna Madre	24	26°17'50"	97°18'00"	Three Islands W of ICWW Marker 33
	Lower Laguna Madre	25	26°18'20"	97°17'45"	Dump just E of ICWW Marker 31
	Lower Laguna Madre	26	26°07'50"	97°17'15"	NW end of Loma de la Grulla
	Lower Laguna Madre	27	26°07'10"	97°17'00"	S end of Loma de la Grulla

Table 1. (Cont'd).

Bay system	Bay	Station number	Latitude	Longitude	Station identification
Laguna Madre	Lower Laguna Madre	28	26°05'35"	97°16'50"	0.5 mile SE of Laguna Vista tower
	Lower Laguna Madre	29	26°09'20"	97°10'50"	1.5 miles N of Padre Island water tower
	Lower Laguna Madre	30	26°08'50"	97°10'40"	0.25 mile N of Padre Island water tower
	Lower Laguna Madre	31	26°04'00"	97°11'50"	N end of Long Island at Port Isabel
	South Bay	32	26°01'50"	97°10'20"	E shore of South Bay, E of shipwreck
	Arroyo Colorado	33	26°21'00"	97°26'00"	Near inlet of ditch in Old Arroyo channel
	Lower Laguna Madre	34	26°47'10"	97°28'20"	W of ICWW Marker 229
	Lower Laguna Madre	35	26°46'10"	97°28'15"	W of ICWW Marker 234
	Lower Laguna Madre	36	26°41'40"	97°27'50"	W of ICWW Marker 249A
	Lower Laguna Madre	37	26°34'48"	97°25'50"	W of ICWW Marker 277A
	Lower Laguna Madre	38	26°32'50"	97°25'05"	W of ICWW Marker 285
	Lower Laguna Madre	39	26°24'45"	97°20'30"	Dump E of ICWW Marker 317
	Lower Laguna Madre	40	26°17'00"	97°17'05"	E side of island E of IWCC Marker 39
	Lower Laguna Madre	41	26°18'15"	97°18'00"	Dump W of ICWW Marker 31
	Lower Laguna Madre	42	26°17'50"	97°17'20"	Joe Breuer's cabin
	Lower Laguna Madre	43	26°06'40"	97°13'00"	Dump W of ICWW Marker 127
	South Bay	44	26°01'12"	97°11'13"	S shore at projection SSW of shipwreck
	Lower Laguna Madre	45	26°24'35"	97°20'15"	Second dump east of ICWW Marker 317
	Lower Laguna Madre	46	26°24'55"	97°20'10"	Third dump east of ICWW Marker 317
	Lower Laguna Madre	47	26°24'55"	97°20'05"	Fifth dump east of ICWW Marker 317
	Lower Laguna Madre	48	26°23'30"	97°20'10"	East of ICWW Marker 321 on east side of land strip
	Lower Laguna Madre	49	26°19'20"	97°18'25"	Dump west of ICWW Marker 19
	Lower Laguna Madre	50	26°21'25"	97°18'55"	First dump east of ICWW Marker 2



Table 1. (Cont'd).

Bay system	Bay	Station number	Latitude	Longitude	Station identification
Laguna Madre	Lower Laguna Madre	51	26°31'30"	97°18'45"	Second dump east of ICWW Marker 2
	Lower Laguna Madre	52	26°21'28"	97°18'30"	Third dump east of ICWW Marker 2
	Lower Laguna Madre	53	26°17'48"	97°17'28"	Breuer's cabin dump
	Lower Laguna Madre	54	26°11'00"	97°17'50"	Mainland shore west of ICWW Marker 89
	Lower Laguna Madre	55	26°09'20"	97°17'45"	Moranco Blanco
	Lower Laguna Madre	56	26°06'50"	97°17'25"	Mouth of Laguna Vista Cove
	Lower Laguna Madre	57	26°07'00"	97°16'25"	First east dump on Laguna Vista diagonal channel
	Lower Laguna Madre	58	26°07'40"	97°16'30"	Dump east of Loma de la Grulla wellhead
	Lower Laguna Madre	59	26°06'50"	97°16'40"	First west dump on Laguna Vista diagonal channel
	Lower Laguna Madre	60	26°12'15"	97°11'15"	2.5 miles N of South Padre Island water tower
	Lower Laguna Madre	61	26°12'50"	97°11'30"	3.5 miles N of South Padre Island water tower
	Lower Laguna Madre	64	26°04'50"	97°14'30"	1.0 mile E of Laguna Heights Pier
	Lower Laguna Madre	65	26°05'20"	97°10'00"	Just S of new causeway
	Lower Laguna Madre	66	26°33'20"	97°24'08"	E side of dump on S side of Mansfield channel Marker 24
	Lower Laguna Madre	67	26°33'50"	97°24'50"	Dump N of Mansfield channel Marker 26
	Lower Laguna Madre	69	26°04'10"	97°09'50"	0.25 mile E of South Padre Island Coast Guard Station
	Lower Laguna Madre	70	26°12'10"	97°15'45"	ICWW Marker 79, spoil dump

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

Appendix C. Bag Seine Station Locations

Table 1. Bag seine station locations in each bay system, October 1981-September 1982.

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 ICWW 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

Table 1. (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	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	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 Maggies 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	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	

Table 1. (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	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	276 277	29°19'20" 29°44'50"	94°45'30" 94°49'30"	East Lagoon 0.5 mile SW of Houston Lighting and Power Company's Cedar Bayou Generating Station's discharge canal
	Galveston Trinity	278 279	29°22'00" 29°42'20"	94°48'55" 94°51'30"	Texas City Dike 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	

Table 1. (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 ICW Galveston-Freeport cut off
	Galveston	298	29°21'05"	94°49'35"	N tip of Pelican Island, 0.4 mile NW of ICW
	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

Table 1. (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	206	28°27'12"	96°20'51"	Bird Island	
	Turtle	207	28°40'20"	96°16'55"	Turtle Point	
	Matagorda	208	28°41'35"	96°14'10"	Settergest Marsh	
	Tres Palacios	209	28°44'47"	96°11'10"	Slaughter Flats	
	Tres Palacios	210	28°45'15"	96°10'10"	Tres Palacios River, East	
	Tres Palacios	211	28°44'10"	96°10'51"	Pepper Hill	
	Lavaca	212	28°41'20"	96°34'33"	Lavaca River Channel Marker 16	
	Lavaca	213	28°36'00"	96°36'52"	Harbor of Refuge, North	
	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	216	28°26'33"	96°23'44"	Pt. O'Connor Little jetties
		Matagorda	217	28°24'05"	96°24'20"	Saluria Bayou North
		Matagorda	218	28°26'15"	96°20'00"	North Inside jetties
		Matagorda	219	28°38'35"	96°14'00"	Oliver Point South
		Matagorda	220	28°37'53"	96°13'22"	Pipeline Crossing
		Matagorda	221	28°37'00"	96°12'45"	Palacios Bayou Flats
Matagorda		222	28°35'25"	96°13'50"	Boat Harbor	
Oyster Lake		223	28°37'22"	96°11'16"	Oyster Lake	
Oyster Lake		224	28°37'41"	96°10'40"	N Corner, Oyster Lake	
Matagorda		225	28°34'47"	96°13'00"	Palacios Point South	
Matagorda		226	28°35'44"	96°11'00"	ICWW, Southwest	
Matagorda		227	28°35'53"	96°10'16"	ICWW, Northwest	
Matagorda		228	28°37'20"	96°06'26"	Mad Island	
Matagorda	229	28°36'32"	96°09'00"	Tank Battery		
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	232	28°33'07"	96°07'15"	Watermelon Mott	
	Matagorda	233	28°31'17"	96°11'25"	Oil Well Cut	
	Matagorda	234	28°29'05"	96°15'00"	Poco Aqua	
	Matagorda	235	28°25'00"	96°21'35"	Decro Point	

Table 1. (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	Keller	263	28°36'33"	96°28'55"	Mud Point
Keller	Keller	264	28°37'49"	96°28'00"	Olivia
Keller	Keller	265	28°37'39"	96°27'02"	Smith Ranch House
Keller	Keller	266	28°35'55"	96°26'20"	Smith's Slough
Keller	Keller	267	28°35'10"	96°27'35"	Keller Bay, SW Corner
Keller	Keller	268	28°35'48"	96°28'30"	Smith's Point
Lavaca	Lavaca	269	28°35'00"	96°29'00"	Humble Oil Dock
Lavaca	Lavaca	270	28°35'15"	96°29'18"	Sand Point Lavaca
Matagorda	Matagorda	271	28°35'25"	96°26'20"	Smith's Cedars



Table 1. (Cont'd).

Bay system	Bay	Station number	Latitude	Longitude	Station identification	
Matagorda	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	Matagorda	285	28°25'00"	96°24'05"	Big Bayou
	Carancahua	Carancahua	286	28°39'43"	96°22'16"	Houston Point
	Carancahua	Carancahua	287	28°37'57"	96°21'34"	Schicke Point, Inside
	Matagorda	Matagorda	288	28°37'30"	96°21'34"	Schicke Point, Outside
	Matagorda	Matagorda	289	28°38'20"	96°20'00"	Piper Lake
	Matagorda	Matagorda	290	28°38'30"	96°19'11"	Marine Fisheries Research Station
	Matagorda	Matagorda	291	28°36'28"	96°59'05"	S E Pocket
	Matagorda	Matagorda	292	28°32'10"	96°09'54"	Trout Bayou
	Matagorda	Matagorda	293	28°30'30"	96°12'35"	Cotton Bayou
	Matagorda	Matagorda	294	28°27'25"	96°18'15"	Tom Cherry
	Matagorda	Matagorda	295	28°28'24"	96°25'24"	Broad Bayou
	Matagorda	Matagorda	296	28°30'32"	96°28'47"	Powderhorn Bayou
	Lavaca	Lavaca	297	28°35'00"	96°35'00"	Alamo Beach
	Matagorda	Matagorda	298	28°34'12"	96°28'49"	Sand Point, South
	Matagorda	Matagorda	299	28°37'00"	96°22'55"	Carancahua Pass, West
	Lavaca	Lavaca	300	28°33'50"	96°32'50"	1 mile NW of Magnolia Beach boat launch

Table 1. (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

Table 1. (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
	Pringle Lake	232	28°18'22"	96°31'25"	E of Rahal Bayou
	Espiritu Santo	233	28°19'25"	96°31'21"	S shore Pringle Lake 1 mile E of Rahal Bayou
	Espiritu Santo	234	28°18'07"	96°33'10"	Pringle Cut in center of Vanderveer Island
	Espiritu Santo	235	28°18'05"	96°34'30"	Rahal Bayou
	San Antonio	236	28°17'10"	96°35'53"	South Pass Lake, E cut
	San Antonio	237	28°16'50"	96°36'45"	South Pass Lake, W cut
	San Antonio	238	28°16'35"	96°37'06"	Long Lake mouth on N shore
	San Antonio	239	28°16'05"	96°37'50"	Island N of Corey Cove
	San Antonio	240	28°15'35"	96°37'50"	Corey Cove point
	San Antonio	241	28°15'12"	96°39'06"	Pats Bay mouth on S shore
	San Antonio	242	28°14'25"	96°39'15"	1 mile S Pats Bay between two guts
	San Antonio	243	28°13'54"	96°39'54"	Mouth of Twin Lakes
	San Antonio	244	28°13'35"	96°40'00"	Cedar Point
	San Antonio	245	28°13'15"	96°41'00"	Mouth of Cedar Lake on S shore
	San Antonio	246	28°12'30"	96°42'06"	1 mile S of Cedar Lake
	San Antonio	247	28°12'05"	96°41'55"	0.5 mile S of Panther Point
					Panther Point Lake, just inside mouth on S shore

Table 1. (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

Table 1. (Cont'd).

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

Table 1. (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

Table 1. (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

Table 1. (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 mile 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"	ICWW 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"	ICWW 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



Table 1. (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

Table 1. (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

Table 1. (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

Table 1. (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)	
Baffin		260	27°18'27"	97°27'49"	3.7 miles WNW of ICWW Marker 217
Baffin		261	27°15'50"	97°26'30"	1.0 mile W of Pt. Penascal

Table 1. (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 Kaufer 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
	Baffin	288	27°19'04"	97°25'12"	1.2 mile WNW of ICWW Flasher 207

Table 1. (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

Table 1. (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	Arroyo Colorado	221	26°21'30"	97°20'25"	Mouth of Slough 0.5 mile from mouth of Arroyo Colorado
	Arroyo Colorado	Arroyo Colorado	222	26°21'15"	97°21'50"	Mouth of Parker Lake
	Lower Laguna Madre	Lower Laguna Madre	223	26°17'50"	97°18'00"	Three Islands W of ICWW Marker 33
	Lower Laguna Madre	Lower Laguna Madre	224	26°17'25"	97°17'30"	W side of Dump E of IWCC Marker 37
	Lower Laguna Madre	Lower Laguna Madre	225	26°18'05"	97°17'35"	Dump just E of ICWW Marker 33
	Lower Laguna Madre	Lower Laguna Madre	226	26°18'20"	97°17'45"	Dump just E of ICWW Marker 31

Table 1. (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



Table 1. (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

Table 1. (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 ICWW 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 ICWW Marker 223A
	Lower Laguna Madre	285	26°46'50"	97°27'45"	Dump W of ICWW 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 D. Hydrological Data Summary

Table 1. Seasonal mean surface salinity (‰) at sampled gill net stations in each Texas bay system during spring (9 April-21 June) and fall (9 September-21 November), 1975-1982 (Blank indicates no measurement taken).

Year	Bay system																		
	Galveston		East Matagorda		Matagorda		San Antonio		Aransas		Corpus Christi		Upper Laguna Madre		Lower Laguna Madre		Coastwide		
	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	
1975		14.6			20.8		20.0		19.0		16.0		34.3		25.0		20.8		
1976		18.6		20.8	14.0	14.0	29.4	14.6	15.0	9.9	18.0	16.1	24.3	29.0	23.4	18.6	18.1		
1977	10.9	27.8	14.6	18.5	18.0	14.7	12.5	19.6	6.8	20.8	16.0	34.3	40.1	29.3	30.0	16.2	25.9		
1978	20.6	22.0	22.2	18.9	22.0	14.4	24.0	13.6	22.0	12.2	30.2	25.3	39.9	32.2	17.1	26.3	20.1		
1979	5.8	12.5	12.9	11.8	9.4	9.9	7.7	13.5	7.8	6.9	17.6	23.1	28.4	29.5	26.1	14.6	16.1		
1980	13.4	23.7	17.3	24.9	15.1	22.9	20.7	18.6	18.7	21.6	29.5	27.2	24.7	31.8	33.0	22.2	24.4		
1981	27.1	9.5	29.7	15.9	20.4	13.8	23.2	9.6	19.4	8.0	30.9	21.3	24.9	29.7	31.3	25.6	15.9		
1982	12.6		14.5		12.4		16.7		11.8		22.7		24.4	28.0		17.1			



Table 3. Seasonal mean surface dissolved oxygen (ppm) at sampled gill net stations in each Texas bay system during spring (9 April-21 June) and fall (9 September-21 November), 1975-1982 (Blank indicates no measurement taken).

Year	Bay system																	
	Galveston		East Matagorda		Matagorda		San Antonio		Arkansas		Corpus Christi		Upper Laguna Madre		Lower Laguna Madre		Coastwide	
	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall
1975		10			9			8		13		9		10		7		10
1976	10	10			9	9	9	9	9	10	10	10	9	9	9	8	10	9
1977	7	8	8	9	9	10	8	8	9	10	10	8	8	8	8	8	8	9
1978	11	10	9	11	9	9	9	9	8	9	8	6	7	7	7	7	9	9
1979	10	10	8	10	11	10	10	7	9	9	8	8	7	8	10	9	10	9
1980	10	9	8	8	10	8	5	7	7	9	6	6	8	10	11	8	8	8
1981	9	9	8	8	10	10	6	7	8	9	7	7	7	7	9	7	8	9
1982	9		10		9		4		9		9		7		8		8	

Table 4. Seasonal mean surface turbidity (JTU) at sampled gill net stations in each Texas bay system during spring (9 April-21 June) and fall (9 September-21 November), 1975-1982 (Blank indicates no measurement taken).

Year	Bay system																		
	Galveston		East Matagorda		Matagorda		San Antonio		Aransas		Corpus Christi		Upper Laguna Madre		Lower Laguna Madre		Coastwide		
	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	
1975		365				334		347		317		325		358		343		343	
1976	91	61		68	80	32	24	22	24	24	65	118	69	54	24	38	58	50	
1977	81	67	39	32	39	74	52	24	44	54	54	172	45	44	40	32	65	50	
1978	79	43	61	24	67	67	61	24	65	48	46	42	42	61	40	41	61	46	
1979	147	75	57	29	77	64	82	24	67	44	44	66	52	57	33	89	81	56	
1980	102	72	75	50	85	34	44	24	48	35	35	59	33	45	62	69	68	50	
1981	53	67	58	65	62	65	47	24	43	60	57	39	39	243	126	66	85	56	
1982	66		85		76		36		89		52			54	131		74		

Table 5. Monthly mean surface salinity (o/oo) at sampled bag seine stations in each Texas bay system during October 1981-September 1982.

Month and Year	Bay system							
	Galveston	Matagorda	San Antonio	Aransas	Corpus Christi	Upper Laguna Madre	Lower Laguna Madre	Coastwide
Oct 1981	12.2	16.7	11.8	10.9	25.9	26.1	33.9	18.6
Nov 1981	11.4	10.4	4.0	5.8	15.9	21.6	25.4	13.1
Dec 1981	15.1	20.5	5.6	5.2	25.3	23.6	31.7	17.6
Jan 1982	14.1	20.3	12.4	10.0	24.9	26.3	29.5	18.9
Feb 1982	13.7	23.8	13.4	10.4	26.0	25.4	24.6	18.9
Mar 1982	16.7	18.6	12.0	8.2	24.4	23.1	18.5	16.9
Apr 1982	11.7	18.6	21.1	12.6	24.4	21.6	29.5	18.9
May 1982	7.6	11.7	17.8	11.2	24.0	22.6	27.2	16.1
Jun 1982	14.2	10.5	9.2	13.9	21.0	22.5	26.2	16.3
Jul 1982	17.0	16.9	17.6	20.8	28.9	29.0	37.2	23.0
Aug 1982	20.7	15.9	19.0	25.4	30.6	34.2	36.6	25.2
Sep 1982	25.4	23.8	21.2	22.9	35.0	43.2	36.4	26.9



Table 6. Monthly mean surface water temperature (C) at sampled bag seine stations in each Texas bay system during October 1981-September 1982.

Month and Year	Bay system							Coastwide
	Galveston	Matagorda	San Antonio	Aransas	Corpus Christi	Upper Laguna Madre	Lower Laguna Madre	
Oct 1981	23.6	21.2	23.6	24.0	26.4	26.7	26.6	24.3
Nov 1981	21.4	20.9	23.1	22.0	21.2	23.1	21.0	21.7
Dec 1981	16.0	16.7	18.6	19.7	18.8	20.0	24.0	18.8
Jan 1982	15.2	12.9	14.0	16.0	14.5	14.9	16.7	14.9
Feb 1982	16.2	14.7	16.8	18.5	15.4	14.6	16.8	16.2
Mar 1982	21.1	17.4	19.7	20.9	20.2	21.9	21.4	20.4
Apr 1982	23.2	21.6	23.3	24.4	23.1	25.6	24.3	23.6
May 1982	26.7	26.5	25.5	26.9	27.2	27.5	28.4	26.9
Jun 1982	30.7	29.9	29.1	30.3	30.2	30.8	28.6	30.0
Jul 1982	32.9	33.4	29.2	30.9	29.6	31.9	28.3	31.2
Aug 1982	31.2	31.5	27.2	29.2	29.9	31.6	29.4	30.1
Sep 1982	28.1	29.8	27.2	27.0	28.5	30.5	28.3	28.2

Table 7. Monthly mean surface dissolved oxygen (ppm) at sampled bag seine stations in each Texas bay system during October 1981-September 1982.

Month and Year	Bay system							
	Galveston	Matagorda	San Antonio	Aransas	Corpus Christi	Upper Laguna Madre	Lower Laguna Madre	Coastwide
Oct 1981	7	11	8	9	7	7	10	8
Nov 1981	9	9	9	7	6	9	9	9
Dec 1981	9	9	6	11	8	7	7	8
Jan 1982	11	10	6	12	9	6	8	9
Feb 1982	12	10	5	12	7	6	12	10
Mar 1982	10	10	5	9	8	6	9	8
Apr 1982	10	10	4	8	9	8	9	8
May 1982	7	9	4	9	8	7	9	8
Jun 1982	7	9	6	9	8	6	7	7
Jul 1982	7	8	5	9	10	7	7	7
Aug 1982	7	8	6	6	6	8	8	7
Sep 1982	10	8	3	8	6	6	7	7

Table 8. Monthly mean surface turbidity (JTU) at sampled bag seine stations in each Texas bay system during October 1981-September 1982.

Month and Year	Bay system							Coastwide
	Galveston	Matagorda	San Antonio	Aransas	Corpus Christi	Upper Laguna Madre	Lower Laguna Madre	
Oct 1981	94	50	24	37	24	56	123	62
Nov 1981	96	51	24	158	59	41	86	76
Dec 1981	67	28	24	61	33	289	60	76
Jan 1982	49	24	24	55	33	38	97	44
Feb 1982	83	24	24	62	27	99	75	58
Mar 1982	104	63	49	131	48	43	101	82
Apr 1982	159	67	29	72	52	93	172	100
May 1982	161	53	32	75	42	76	69	82
Jun 1982	145	57	54	63	85	74	72	84
Jul 1982	79	58	22	48	40	133	55	64
Aug 1982	45	61	28	52	69	79	201	74
Sep 1982	51	42	41	43	34	24	42	43

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