

Fish Sampling With a 6.1-m Trawl in Selected Texas Bays

by
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and
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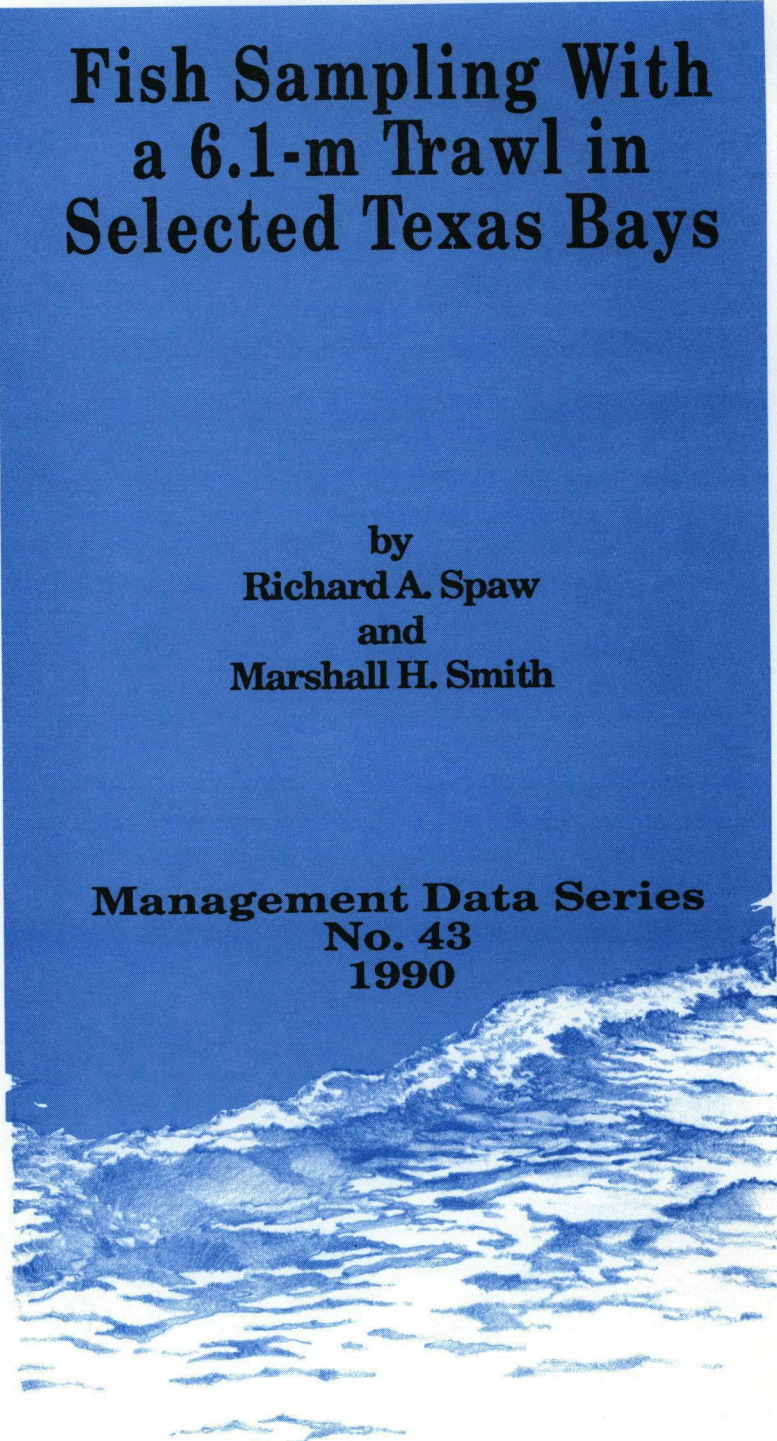
Management Data Series
No. 43
1990



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FISHERIES & WILDLIFE
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ABSTRACT

Finfish collected during routine 6.1 m otter trawl samples in three Texas bays between November 1977 and October 1980, were counted and measured to determine mean catch rates and mean lengths. Atlantic croaker (Micropogonias undulatus), Gulf menhaden (Brevoortia patronus), bay anchovy (Anchoa mitchilli), spot (Leiostomus xanthurus) and sand seatrout (Cynoscion arenarius) comprised 79% of the finfish catch in 6.1-m otter trawl samples. No other fish species accounted for more than 3% of total catch. Atlantic croaker, spot and sand seatrout monthly mean catch rates were generally highest during April-July. Gulf menhaden catch rates were highest during April-May and September-October. Bay anchovy catch rates were highest during November-December. Mean lengths of finfishes varied among species and months.

INTRODUCTION

Management of marine fishery resources requires information of changes in fish populations (Rice, et al. 1987). Trawling is an effective method of monitoring annual changes in relative abundance of marine fish stocks (Pennington 1985). Otter trawls have been used to collect finfish for natural history and ecological studies along the Texas coast since 1951 (Simmons 1957; Brewer 1957).

Otter trawls have been used by the Texas Parks and Wildlife Department (TPWD) since 1958 to monitor population trends of commercially valuable shrimp (Benefield and Baker 1980, Wyatt 1959). From 1977 through 1980, finfish collected in otter trawls in Galveston, Matagorda and San Antonio Bay systems were identified, counted and measured; however, these data have not been reported. The objective of this study is to present monthly mean catch rates (no./trawl \pm 1SE) and mean total lengths (mm \pm 1SE) of all finfish species collected in 6.1-m otter trawls in those bays.

MATERIALS AND METHODS

Otter trawls (6.1-m) were used to sample finfish in Galveston, Matagorda and San Antonio Bay systems between November 1977 and October 1980. Samples were collected monthly (except January) at five randomly selected sites in each of the three bay systems. Sampling procedures and the 6.1-m otter trawls used are described in Matthews et al. (1984).

All finfish collected were identified to species and counted. Total lengths (nearest 1 mm) of the first 20 individuals of each species were obtained. Monthly mean catch rates (no./trawl \pm 1SE) and monthly mean total length (mm \pm 1SE) were calculated for each species of finfish collected.

RESULTS

Representatives of 74 finfish species were collected in 491 trawl samples between November 1977 and October 1980. Of the 18,428 finfish collected, 39% (7,171), 35% (6,414) and 26% (4,873) were collected in San Antonio, Galveston and Matagorda Bay systems, respectively (Table 1).

Atlantic croaker (*Micropogonias undulatus*) comprised 46% (8,478) of all finfish collected; 3,697, 2,525 and 2,256 were collected in Galveston, San Antonio and Matagorda Bays, respectively (Table 1). Gulf menhaden (*Brevoortia patronus*), bay anchovy (*Anchoa mitchilli*), spot (*Leiostomus xanthurus*) and sand seatrout (*Cynoscion arenarius*) comprised an additional 33% of finfish collected in trawl samples.

Catch rates of Atlantic croaker and spot were generally highest during April-July (Table 2). The Atlantic croaker catch rate was highest in Galveston Bay in June 1978 (101.8 fish/trawl), while the spot catch rate was highest in San Antonio Bay in May 1979 (27.0 fish/trawl). Mean lengths ranged from 52 mm and 79 mm to 162 mm for Atlantic croaker and spot, respectively. Catch rates of Gulf menhaden were generally highest during April-May and

September-October with the highest occurring in San Antonio Bay in April 1978 (101.2 fish/trawl). Mean lengths ranged from 47 to 151 mm. Catch rates of bay anchovy were generally highest during November-December with highest catch rate occurring in San Antonio Bay in December 1977 (49.8 fish/trawl). Mean lengths ranged from 26 to 84 mm. Catch rates of sand seatrout were generally highest during June-July. The highest catch rate occurred in Galveston Bay in July 1979 (26.0 fish/trawl). Mean lengths ranged from 36 to 210 mm. Monthly catch rates and mean lengths of other species varied among bay systems and months.

DISCUSSION

Three (Atlantic croaker, sand seatrout and Gulf menhaden) of the five most abundant species collected in this study support valuable recreational or commercial fisheries. Atlantic croaker and sand seatrout accounted for about 16 and 15% of the recreational landings in Texas in 1988, respectively (Maddux et al. 1989). Gulf menhaden constitutes the largest (by weight) single commercial fishery in the United States (Lassuy 1983). Moreover, this species along with bay anchovy and spot make up a significant part of the diet of important recreational fish species, including spotted seatrout, red drum and southern flounder (Darnell 1958; Stokes 1977; Reagan 1985).

Gill nets and bag seines used in TPWD's resource monitoring program target only near shore shallow water habitat. This limitation may result in an incomplete view of species composition, distribution and relative abundance of finfish species. This study demonstrates that sampling in open water with otter trawls could be used in conjunction with gill nets and bag seines to determine relative abundance, catch/effort, mean length and species composition of finfish in various life history stages.

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Table 1. Number of fish collected with a 6.1-m trawl in the Galveston, Matagorda and San Antonio Bay systems during November 1977-October 1980.

| Common name | Scientific name ^a | Bay system | | | Total |
|-------------------------|------------------------------------|------------|-----------|-------------|-------|
| | | Galveston | Matagorda | San Antonio | |
| Alligator gar | <u>Lepisosteus spatula</u> | 0 | 4 | 0 | 4 |
| Atlantic bumper | <u>Chloroscombrus chrysurus</u> | 47 | 55 | 12 | 114 |
| Atlantic croaker | <u>Micropogonias undulatus</u> | 3,697 | 2,256 | 2,525 | 8,478 |
| Atlantic cutlassfish | <u>Trichiurus lepturus</u> | 80 | 40 | 1 | 121 |
| Atlantic midshipman | <u>Porichthys plectrodon</u> | 11 | 1 | 1 | 13 |
| Atlantic moonfish | <u>Selene setapinnis</u> | 1 | 0 | 0 | 1 |
| Atlantic spadefish | <u>Chaetodipterus faber</u> | 31 | 19 | 4 | 54 |
| Atlantic stingray | <u>Dasyatis sabina</u> | 4 | 4 | 1 | 9 |
| Atlantic thread herring | <u>Opisthonema oglinum</u> | 14 | 4 | 0 | 18 |
| Atlantic threadfin | <u>Polydactylus octonemus</u> | 7 | 20 | 4 | 31 |
| Bay anchovy | <u>Anchoa mitchilli</u> | 54 | 132 | 1,485 | 1,671 |
| Bay whiff | <u>Citharichthys spilopterus</u> | 111 | 80 | 2 | 193 |
| Bighead searobin | <u>Prionotus tribulus</u> | 81 | 53 | 6 | 140 |
| Black drum | <u>Pogonias cromis</u> | 10 | 2 | 24 | 36 |
| Blackcheek tonguefish | <u>Symphurus plagiusa</u> | 25 | 1 | 3 | 29 |
| Blue catfish | <u>Ictalurus furcatus</u> | 0 | 0 | 60 | 60 |
| Bluefish | <u>Pomatomus saltatrix</u> | 0 | 1 | 0 | 1 |
| Bluntnose jack | <u>Hemicaranx amblyrhynchus</u> | 1 | 1 | 2 | 4 |
| Bonnethead | <u>Sphyrna tiburo</u> | 0 | 1 | 0 | 1 |
| Crevalle jack | <u>Caranx hippos</u> | 7 | 23 | 10 | 40 |
| Finescale menhaden | <u>Brevoortia gunteri</u> | 13 | 49 | 0 | 62 |
| Flathead catfish | <u>Pylodictis olivaris</u> | 1 | 0 | 0 | 1 |
| Florida pompano | <u>Trachinotus carolinus</u> | 0 | 1 | 0 | 1 |
| Fringed flounder | <u>Etropus crossotus</u> | 8 | 0 | 1 | 9 |
| Gafftopsail catfish | <u>Bagre marinus</u> | 72 | 77 | 299 | 448 |
| Gizzard shad | <u>Dorosoma cepedianum</u> | 13 | 9 | 72 | 94 |
| Gulf butterfish | <u>Peprilus burti</u> | 17 | 86 | 0 | 103 |
| Gulf menhaden | <u>Brevoortia patronus</u> | 643 | 588 | 1,101 | 2,332 |
| Gulf pipefish | <u>Syngnathus scovelli</u> | 0 | 6 | 0 | 6 |
| Gulf toadfish | <u>Opsanus beta</u> | 4 | 0 | 2 | 6 |
| Hardhead catfish | <u>Arius felis</u> | 148 | 259 | 174 | 581 |
| Harvestfish | <u>Peprilus alepidotus</u> | 38 | 167 | 12 | 217 |
| Hogchoker | <u>Trinectes maculatus</u> | 6 | 16 | 8 | 30 |
| Horse-eye jack | <u>Caranx latus</u> | 0 | 3 | 0 | 3 |
| Inland silverside | <u>Menidia beryllina</u> | 0 | 2 | 0 | 2 |
| Inshore lizardfish | <u>Synodus foetens</u> | 4 | 1 | 1 | 6 |
| Ladyfish | <u>Elops saurus</u> | 0 | 1 | 0 | 1 |
| Least puffer | <u>Sphoeroides parvus</u> | 61 | 40 | 17 | 118 |
| Lined sole | <u>Achirus lineatus</u> | 2 | 2 | 0 | 4 |
| Longnose gar | <u>Lepisosteus osseus</u> | 0 | 1 | 0 | 1 |
| Lookdown | <u>Selene vomer</u> | 25 | 2 | 0 | 27 |
| Ocellated flounder | <u>Ancyllopsetta quadrocellata</u> | 0 | 5 | 0 | 5 |
| Pigfish | <u>Orthopristis chrysoptera</u> | 12 | 30 | 1 | 43 |
| Pinfish | <u>Lagodon rhomboides</u> | 9 | 18 | 41 | 68 |
| Red drum | <u>Sciaenops ocellatus</u> | 0 | 1 | 0 | 1 |
| Sand perch | <u>Diplectrum formosum</u> | 1 | 0 | 0 | 1 |
| Sand seatrout | <u>Cynoscion arenarius</u> | 626 | 251 | 54 | 931 |
| Scaled sardine | <u>Harengula jaguana</u> | 0 | 0 | 1 | 1 |
| Scrawled filefish | <u>Aluterus scriptus</u> | 0 | 0 | 1 | 1 |
| Sheepshead | <u>Archosargus probatocephalus</u> | 14 | 5 | 15 | 34 |
| Sheepshead minnow | <u>Cyprinodon variegatus</u> | 1 | 0 | 0 | 1 |
| Silver jenny | <u>Cucinostomus gula</u> | 0 | 1 | 0 | 1 |
| Silver perch | <u>Bairdiella chrysoura</u> | 63 | 185 | 79 | 327 |
| Skilletfish | <u>Gobiesox strumosus</u> | 1 | 1 | 0 | 2 |
| Skipjack herring | <u>Alosa chrysochloris</u> | 3 | 0 | 0 | 3 |
| Smooth puffer | <u>Lagocephalus laevigatus</u> | 0 | 1 | 0 | 1 |
| Southern flounder | <u>Paralichthys lethostigma</u> | 28 | 21 | 15 | 64 |
| Southern hake | <u>Urophycis floridana</u> | 2 | 0 | 0 | 2 |
| Southern kingfish | <u>Menticirrhus americanus</u> | 15 | 9 | 0 | 24 |
| Southern stingray | <u>Dasyatis americana</u> | 0 | 3 | 0 | 3 |
| Spanish mackerel | <u>Scomberomorus maculatus</u> | 1 | 3 | 0 | 4 |
| Spanish sardine | <u>Sardinella aurita</u> | 1 | 0 | 0 | 1 |
| Spot | <u>Leiostomus xanthurus</u> | 312 | 297 | 613 | 1,222 |
| Spotted seatrout | <u>Cynoscion nebulosus</u> | 6 | 7 | 13 | 26 |
| Star drum | <u>Stellifer lanceolatus</u> | 17 | 1 | 7 | 25 |
| Striped anchovy | <u>Anchoa hepsetus</u> | 0 | 0 | 2 | 2 |
| Striped blenny | <u>Chasmodes bosquianus</u> | 0 | 0 | 1 | 1 |
| Striped burrfish | <u>Chilomycterus schoepfi</u> | 1 | 14 | 0 | 15 |
| Striped mullet | <u>Mugil cephalus</u> | 33 | 10 | 391 | 434 |

Table 1. (Cont'd.)

| Common name | Scientific name ^a | Bay system | | | Total |
|----------------------------------|------------------------------|------------|-----------|-------------|--------|
| | | Galveston | Matagorda | San Antonio | |
| Threadfin shad | <u>Dorosoma petenense</u> | 31 | 2 | 9 | 42 |
| Tripletail | <u>Lobotes surinamensis</u> | 0 | 1 | 0 | 1 |
| Unidentified herring | Family Clupeidae | 0 | 0 | 66 | 66 |
| Unidentified lefteye flounder | Family Bothidae | 0 | 0 | 1 | 1 |
| Violet goby | <u>Gobioides broussoneti</u> | 1 | 0 | 0 | 1 |
| White bass | <u>Morone chrysops</u> | 0 | 0 | 2 | 2 |
| Yellowfin mojarra | <u>Gerres cinereus</u> | 0 | 0 | 2 | 2 |
| Total | | 6,414 | 4,873 | 7,171 | 18,428 |

^aScientific names from Robins et al. (1980).

Table 2. Monthly mean catch rate (no./trawl) and weighted mean total length (mm \pm 1SE) of fishes caught in 6.1-m trawls in the Galveston, Matagorda and San Antonio Bay systems during November 1977-October 1980. Standard errors were calculated for total lengths when a species was caught in more than one trawl sample per month. Data are presented only for months in which species were caught. No samples were taken during January 1978, 1979 and 1980.

| Species | Month | Galveston | | Matagorda | | San Antonio | |
|------------------|------------------|-----------------|-----------------|----------------|-----------------|-----------------|-------------|
| | | No./trawl | Length | No./trawl | Length | No./trawl | Length |
| Alligator gar | Nov 1977 | | | 0.6 \pm 0.6 | 1,194 | | |
| | Nov 1978 | | | 0.2 \pm 0.2 | 1,651 | | |
| Atlantic bumper | Jun 1978 | | | 0.4 \pm 0.4 | 104 | | |
| | Jul | | | 0.4 \pm 0.2 | 70 \pm 1 | | |
| | Aug | 0.2 \pm 0.2 | 63 | | | | |
| | Sep | 1.4 \pm 0.9 | 83 \pm 9 | 6.8 \pm 4.1 | 81 \pm 1 | | |
| | Oct | 0.2 \pm 0.2 | 73 | 2.0 \pm 1.8 | 63 \pm 2 | | |
| | Dec | | | 0.2 \pm 0.2 | 56 | | |
| | May 1979 | | | 0.2 \pm 0.2 | 97 | | |
| | Jun | 3.0 \pm 2.3 | 67 \pm 1 | | | 0.2 \pm 0.2 | 80 |
| | Sep | | | | | 1.2 \pm 1.2 | 102 |
| | Oct | | | | | | |
| Atlantic croaker | Nov | 0.2 \pm 0.2 | 74 | | | | |
| | Dec | 0.2 \pm 0.2 | 58 | | | | |
| | Mar 1980 | 3.4 \pm 3.4 | 86 | 0.4 \pm 0.4 | 88 | | |
| | Sep | | | 0.6 \pm 0.6 | 97 | | |
| | Oct | 0.8 \pm 0.8 | 62 | | | 1.0 \pm 0.5 | 67 \pm 8 |
| | Nov 1977 | 12.8 \pm 5.5 | 115 \pm 4 | 10.6 \pm 4.0 | 111 \pm 4 | 38.6 \pm 14.0 | 96 \pm 5 |
| | Dec | 4.0 \pm 0.9 | 125 \pm 3 | 2.0 \pm 1.8 | 103 \pm 1 | 27.8 \pm 21.9 | 87 \pm 3 |
| | Feb 1978 | 2.4 \pm 2.2 | 123 \pm 1 | 1.8 \pm 1.6 | 117 \pm 1 | 34.6 \pm 34.1 | 122 \pm 1 |
| | Mar | 6.4 \pm 2.8 | 128 \pm 2 | 2.4 \pm 1.2 | 77 \pm 11 | 2.8 \pm 1.6 | 70 \pm 5 |
| | Apr | 39.0 \pm 18.8 | 95 \pm 6 | 20.0 \pm 7.2 | 96 \pm 1 | 21.2 \pm 8.9 | 94 \pm 1 |
| May | 49.7 \pm 13.7 | 107 \pm 3 | 17.8 \pm 6.4 | 128 \pm 4 | 59.6 \pm 21.7 | 98 \pm 1 | |
| Jun | 101.8 \pm 44.3 | 95 \pm 3 | 24.0 \pm 14.1 | 104 \pm 2 | 5.0 \pm 2.9 | 117 \pm 6 | |
| Jul | 74.2 \pm 33.1 | 106 \pm 3 | 37.6 \pm 16.8 | 102 \pm 2 | 20.2 \pm 6.8 | 113 \pm 1 | |
| Aug | 26.8 \pm 8.7 | 119 \pm 2 | 7.6 \pm 4.9 | 129 \pm 1 | 9.2 \pm 6.4 | 126 \pm 1 | |
| Sep | 16.6 \pm 7.5 | 141 \pm 2 | 1.8 \pm 1.3 | 120 \pm 1 | 1.0 \pm 1.0 | 142 | |
| Oct | 3.6 \pm 1.8 | 150 \pm 3 | 3.0 \pm 1.5 | 134 \pm 1 | 0.6 \pm 0.4 | 144 \pm 1 | |
| Nov | 2.6 \pm 1.3 | 162 \pm 1 | 0.8 \pm 0.4 | 153 \pm 4 | | | |
| Dec | 3.8 \pm 2.6 | 135 \pm 4 | | | | | |
| Feb 1979 | 2.6 \pm 1.1 | 93 \pm 11 | | | | | |
| Mar | 4.8 \pm 2.1 | 114 \pm 7 | | | | | |
| Apr | 22.6 \pm 5.1 | 98 \pm 3 | 2.4 \pm 1.6 | 84 \pm 1 | 0.4 \pm 0.2 | 103 \pm 21 | |
| May | 40.0 \pm 12.0 | 112 \pm 4 | 32.4 \pm 16.8 | 117 \pm 1 | 2.4 \pm 1.2 | 67 \pm 4 | |
| Jun | 24.6 \pm 8.1 | 12 \pm 6 | 56.4 \pm 11.3 | 112 \pm 3 | 2.4 \pm 0.8 | 58 \pm 2 | |
| Jul | 22.6 \pm 3.9 | 110 \pm 4 | 31.2 \pm 14.0 | 124 \pm 2 | 17.4 \pm 6.2 | 100 \pm 2 | |
| Aug | 33.0 \pm 7.4 | 132 \pm 6 | 7.2 \pm 1.9 | 121 \pm 5 | 35.4 \pm 18.2 | 107 \pm 2 | |
| Sep | 14.8 \pm 4.1 | 142 \pm 8 | 2.8 \pm 1.2 | 120 \pm 4 | 26.0 \pm 14.0 | 107 \pm 1 | |
| Oct | 11.4 \pm 3.4 | 132 \pm 2 | 3.8 \pm 1.2 | 127 \pm 3 | 45.0 \pm 21.9 | 118 \pm 1 | |
| Nov | 9.0 \pm 6.0 | 143 \pm 4 | 2.8 \pm 1.6 | 123 \pm 1 | 14.4 \pm 5.4 | 124 \pm 1 | |
| Dec | 2.0 \pm 1.8 | 141 \pm 1 | | | 0.4 \pm 0.4 | 143 | |
| Feb 1980 | 15.0 \pm 4.8 | 114 \pm 5 | | | 0.4 \pm 0.4 | 150 | |
| Mar | 13.0 \pm 4.6 | 92 \pm 6 | 0.6 \pm 0.6 | 96 | 0.6 \pm 0.6 | 52 | |
| Apr | 79.8 \pm 22.3 | 100 \pm 1 | 14.8 \pm 9.1 | 106 \pm 2 | 11.6 \pm 3.6 | 93 \pm 2 | |
| May | 39.4 \pm 10.3 | 114 \pm 2 | 62.2 \pm 6.7 | 107 \pm 3 | 63.4 \pm 23.6 | 113 \pm 1 | |
| | | | 25.4 \pm 6.7 | 124 \pm 2 | 24.4 \pm 7.7 | 113 \pm 1 | |

Table 2. (Cont'd.)

| Species | Month | Galveston | | Mataforda | | San Antonio | |
|-------------------------------|-----------|-------------|-----------|-------------|----------|-------------|---------|
| | | No./trawl | Length | No./trawl | Length | No./trawl | Length |
| Atlantic croaker (Cont'd.) | Jun 1980 | 34.8 ± 12.2 | 106 ± 1 | 33.2 ± 10.9 | 119 ± 1 | 23.6 ± 5.8 | 110 ± 1 |
| | Jul 1980 | 9.0 ± 4.3 | 124 ± 3 | 36.0 ± 15.1 | 122 ± 1 | 13.4 ± 3.9 | 123 ± 1 |
| | Aug | 14.2 ± 8.3 | 103 ± 3 | 2.8 ± 1.4 | 127 ± 2 | 3.6 ± 2.6 | 137 ± 1 |
| | Sep | 9.2 ± 4.7 | 148 ± 7 | 1.8 ± 1.2 | 140 ± 1 | 0.2 ± 0.2 | 155 |
| | Oct | 5.2 ± 2.2 | 133 ± 2 | 3.2 ± 2.5 | 155 ± 1 | | |
| Atlantic cutlassfish | Mar 1978 | | | 0.6 ± 0.4 | 306 ± 9 | | |
| | Apr | 0.8 ± 0.8 | 318 | 2.4 ± 1.3 | 347 ± 2 | | |
| | May | 0.8 ± 0.3 | 420 ± 12 | 0.8 ± 0.8 | 458 | | |
| | Jun | 2.5 ± 1.3 | 437 ± 6 | 0.6 ± 0.4 | 476 ± 6 | 0.2 ± 0.2 | 520 |
| | Oct | | | 0.2 ± 0.2 | 347 | | |
| | Mar 1979 | 0.4 ± 0.4 | 226 | | | | |
| | Apr | 3.4 ± 2.9 | 307 ± 1 | 0.6 ± 0.4 | 290 ± 2 | | |
| | May | 0.6 ± 0.6 | 350 | 0.4 ± 0.2 | 462 ± 24 | | |
| | Jun | 4.2 ± 4.0 | 399 ± 3 | 0.4 ± 0.4 | 468 | | |
| | Aug | 0.4 ± 0.2 | 186 ± 12 | | | | |
| | Apr 1980 | 1.0 ± 0.8 | 304 ± 4 | 0.2 ± 0.2 | 245 | | |
| | May | 0.2 ± 0.2 | 330 | 0.4 ± 0.2 | 303 | | |
| Jun | 1.8 ± 1.8 | 423 | 1.0 ± 1.0 | 431 | | | |
| Jul | 0.2 ± 0.2 | 530 | | | | | |
| Aug | | | 0.4 ± 0.4 | 428 | | | |
| Atlantic midshipman | Jun 1978 | 0.2 ± 0.2 | 170 | | | | |
| | Aug | 0.2 ± 0.2 | 137 | | | | |
| | Nov | 0.2 ± 0.2 | 88 | | | | |
| Atlantic moonfish | Aug 1979 | 1.6 ± 1.6 | 135 | 0.2 ± 0.2 | 130 | 0.2 ± 0.2 | 110 |
| | Apr 1980 | | | | | | |
| Atlantic spadefish | Sep 1980 | 0.2 ± 0.2 | 54 | | | | |
| | Jul 1978 | | | 0.4 ± 0.4 | 56 | | |
| | Aug | 0.4 ± 0.2 | 97 ± 2 | 1.6 ± 1.6 | 84 | 0.8 ± 0.8 | 93 |
| | Oct | 0.2 ± 0.2 | 74 | | | | |
| | Nov | 0.2 ± 0.2 | 53 | | | | |
| | Dec | 0.2 ± 0.2 | 64 | | | | |
| | Mar 1979 | | | 0.4 ± 0.4 | 84 | | |
| | Apr | | | 0.2 ± 0.2 | 61 | | |
| | Jul | 5.0 ± 4.0 | 66 ± 1 | 0.2 ± 0.2 | 87 | | |
| | Apr 1980 | 0.2 ± 0.2 | 72 | 0.2 ± 0.2 | 100 | | |
| Jul | | | 0.8 ± 0.6 | 100 ± 4 | | | |
| Aug | | | | | | | |
| Sep | | | | | | | |
| Atlantic stingray | Nov 1977 | | | 0.4 ± 0.4 | 256 | | |
| | Jun 1978 | | | 0.2 ± 0.2 | 295 | | |
| | Sep | 0.2 ± 0.2 | 153 | | | | |
| | Apr 1980 | 0.2 ± 0.2 | 158 | | | | |
| | Jul | 0.2 ± 0.2 | 152 | 0.2 ± 0.2 | 195 | 0.2 ± 0.2 | 135 |
| Aug | | | | | | | |
| Sep | 0.2 ± 0.2 | 337 | | | | | |

Table 2. (Cont'd.)

| Species | Month | Galveston | | Matagorda | | San Antonio | |
|-------------------------|-----------|-----------|-----------|-----------|-----------|-------------|--------|
| | | No./trawl | Length | No./trawl | Length | No./trawl | Length |
| Atlantic thread herring | Dec 1977 | 1.0 ± 0.7 | 118 ± 3 | | | | |
| | Oct 1978 | 0.6 ± 0.6 | 119 | 0.2 ± 0.2 | 129 | | |
| | Apr 1979 | 0.2 ± 0.2 | 110 | | | | |
| | Aug | 0.2 ± 0.2 | 126 | 0.2 ± 0.2 | 114 | | |
| | Feb 1980 | 0.6 ± 0.6 | 86 | | | | |
| | Apr | | | 0.4 ± 0.2 | 114 ± 1 | | |
| | Jun | 0.2 ± 0.2 | 118 | | | | |
| | Sep | 0.2 ± 0.2 | 125 | | | | |
| | Jun 1978 | | | 0.4 ± 0.2 | 140 ± 2 | 0.6 ± 0.6 | 159 |
| | Jul | | | 0.6 ± 0.4 | 161 ± 1 | | |
| Atlantic threadfin | Aug | | | | | 0.2 ± 0.2 | 69 |
| | May 1979 | | | | | | |
| | Jul | 0.4 ± 0.2 | 174 ± 1 | | | | |
| | Aug | | | 1.0 ± 0.6 | 142 ± 1 | | |
| | Sep | 0.6 ± 0.6 | 207 | 0.6 ± 0.4 | 163 ± 3 | | |
| | Nov | 0.4 ± 0.4 | 117 | | | | |
| | Aug 1980 | | | 1.4 ± 1.2 | 141 ± 2 | | |
| | Nov 1977 | 0.8 ± 0.5 | 55 ± 1 | | | | |
| | Dec | 0.5 ± 0.5 | 48 | 0.4 ± 0.2 | 52 ± 2 | 17.2 ± 8.4 | 45 ± 1 |
| | Feb 1978 | | | | | 49.8 ± 27.8 | 39 ± 2 |
| Bay anchovy | Mar | | | 0.2 ± 0.2 | 38 | 2.4 ± 1.2 | 45 ± 6 |
| | Apr | | | 1.0 ± 0.5 | 63 ± 1 | 6.6 ± 2.7 | 38 ± 2 |
| | May | 1.3 ± 0.6 | 51 ± 1 | 0.6 ± 0.6 | 49 | 44.0 ± 32.6 | 48 ± 1 |
| | Jun 1978 | | | 0.6 ± 0.6 | 53 | 14.2 ± 7.6 | 57 ± 1 |
| | Jul | 0.4 ± 0.2 | 42 ± 1 | 0.6 ± 0.6 | 45 ± 2 | 4.8 ± 2.9 | 44 ± 2 |
| | Aug | 0.2 ± 0.2 | 45 | 3.6 ± 2.2 | 45 ± 2 | 5.6 ± 1.6 | 47 ± 1 |
| | Sep | 0.4 ± 0.4 | 57 | | | 4.8 ± 3.3 | 47 ± 1 |
| | Oct | 0.4 ± 0.4 | 58 | 6.6 ± 6.6 | 43 | 17.5 ± 12.5 | 37 ± 1 |
| | Nov | | | | | 12.2 ± 5.2 | 45 ± 2 |
| | Dec | 1.0 ± 0.6 | 48 ± 3 | | | 34.0 ± 9.6 | 50 ± 2 |
| | Feb 1979 | 0.2 ± 0.2 | 60 | | | 11.8 ± 3.7 | 43 ± 1 |
| | Mar | | | | | 2.4 ± 2.2 | 49 ± 1 |
| | Apr | 0.2 ± 0.2 | 34 | | | 6.4 ± 2.9 | 49 ± 2 |
| | May | 0.2 ± 0.2 | 48 | | | 0.4 ± 0.2 | 45 ± 2 |
| | Jun | | | | | 0.8 ± 0.5 | 52 ± 1 |
| | Jul | 1.2 ± 1.2 | 48 | 0.6 ± 0.4 | 67 ± 4 | 7.0 ± 3.5 | 48 ± 1 |
| | Aug | 0.4 ± 0.2 | 55 ± 1 | 1.0 ± 1.0 | 43 | 8.2 ± 3.3 | 42 ± 1 |
| | Sep | 0.6 ± 0.6 | 26 | 0.4 ± 0.4 | 60 | 6.8 ± 4.6 | 49 ± 1 |
| | Oct | 0.2 ± 0.2 | 62 | 0.4 ± 0.4 | 62 | 7.0 ± 2.5 | 48 ± 1 |
| Nov | 0.2 ± 0.2 | 65 | 0.6 ± 0.6 | 66 | 6.2 ± 1.7 | 45 ± 3 | |
| Dec | 0.2 ± 0.2 | 71 | | | 1.5 ± 0.6 | 45 ± 1 | |
| Feb 1980 | 0.2 ± 0.2 | 60 | 0.2 ± 0.2 | 47 | 2.0 ± 1.3 | 40 ± 1 | |
| Mar | 0.2 ± 0.2 | 84 | 0.2 ± 0.2 | 30 | 1.4 ± 1.0 | 41 ± 1 | |
| Apr | 0.2 ± 0.2 | 44 | 0.2 ± 0.2 | 67 ± 2 | 8.2 ± 8.2 | 58 | |
| May | | | 0.6 ± 0.4 | 52 | 0.8 ± 0.4 | 52 ± 1 | |
| Jun | | | 0.2 ± 0.2 | 46 ± 2 | 0.6 ± 0.4 | 59 ± 1 | |
| Jul | | | 4.0 ± 1.9 | 45 | 0.4 ± 0.4 | 59 | |
| Aug | 0.2 ± 0.2 | 43 | 0.2 ± 0.2 | 38 ± 1 | 9.6 ± 6.5 | 47 ± 1 | |

Table 2. (Cont'd.)

| Species | Month | Galveston | | Matagorda | | San Antonio | |
|--------------------------|-----------|-----------|-----------|-----------|-----------|-------------|---------|
| | | No./trawl | Length | No./trawl | Length | No./trawl | Length |
| Bay anchovy (Cont'd.) | Sep | 1.0 ± 1.0 | 53 | 2.2 ± 1.4 | 50 ± 2 | 8.0 ± 3.5 | 43 ± 1 |
| | Oct | 0.4 ± 0.4 | 64 | 1.4 ± 0.7 | 44 ± 4 | 3.6 ± 1.0 | 52 ± 1 |
| Baywhiff | Nov 1977 | | | 7.2 ± 5.0 | 100 ± 1 | | |
| | Dec | 0.2 ± 0.2 | 72 ± 1 | | | | |
| | May 1978 | 1.5 ± 1.0 | 82 | | | 0.2 ± 0.2 | 98 |
| | Jun | 0.2 ± 0.2 | | 0.2 ± 0.2 | 102 | | |
| | Jul | 1.4 ± 0.7 | 104 ± 2 | 0.8 ± 0.5 | 118 ± 4 | | |
| | Aug | 3.0 ± 1.0 | 89 ± 1 | 0.6 ± 0.2 | 96 ± 4 | | |
| | Nov | 0.2 ± 0.2 | 86 | | | | |
| | Dec | | | 0.2 ± 0.2 | 79 | | |
| | Apr 1979 | | | 2.0 ± 2.0 | 77 | | |
| | May | | | 0.8 ± 0.8 | 88 | | |
| | Jun | | | 0.4 ± 0.4 | 106 | | |
| | Jul | | | | | | |
| | Aug | 0.8 ± 0.8 | 93 | 0.4 ± 0.4 | 71 | | |
| | Oct | 0.4 ± 0.4 | 74 | 0.6 ± 0.4 | 92 ± 1 | | |
| Nov | 0.6 ± 0.4 | 73 ± 3 | 0.4 ± 0.2 | 82 ± 1 | | | |
| Dec | 1.6 ± 1.2 | 69 ± 3 | 0.2 ± 0.2 | 83 | | | |
| Feb 1980 | | | 0.8 ± 0.4 | 108 ± 2 | | | |
| Mar | | | 0.2 ± 0.2 | 75 | | | |
| Apr | 1.0 ± 1.0 | 97 | 1.2 ± 1.0 | 103 ± 2 | 0.2 ± 0.2 | 108 | |
| May | | | | | | | |
| Jun | 1.4 ± 0.9 | 93 ± 1 | | | | | |
| Jul | 2.0 ± 1.1 | 86 ± 3 | | | | | |
| Aug | 0.8 ± 0.8 | 76 | | | | | |
| Sep | 4.2 ± 1.3 | 94 ± 1 | | | | | |
| Oct | 2.6 ± 1.9 | 105 ± 2 | | | | | |
| Bighead searobin | Nov 1977 | | | 0.2 ± 0.2 | 48 | | |
| | Mar 1978 | 0.2 ± 0.2 | 38 | | | | |
| | Apr | 0.4 ± 0.4 | 50 | | | | |
| | May | 0.3 ± 0.2 | 72 ± 2 | 2.6 ± 1.2 | 47 ± 1 | | |
| | Nov | 1.2 ± 1.0 | 63 ± 1 | | | | |
| | Dec | 1.6 ± 1.0 | 44 ± 2 | | | | |
| | Feb 1979 | | | 1.2 ± 1.0 | 54 ± 1 | | 73 ± 2 |
| | Mar | 0.6 ± 0.4 | 46 ± 1 | 0.6 ± 0.6 | 53 | | |
| | Apr | 0.2 ± 0.2 | 58 | 0.2 ± 0.2 | 82 | | |
| | Jun | | | | | | |
| | Oct | 0.4 ± 0.4 | 37 | | | | |
| | Nov | 1.2 ± 1.2 | 42 | | | | |
| | Dec | 1.2 ± 0.8 | 49 ± 1 | | | | |
| | Feb 1980 | | | 3.0 ± 2.0 | 56 ± 1 | 0.4 ± 0.2 | 27 ± 10 |
| | Mar | 1.6 ± 1.4 | 54 ± 1 | 1.8 ± 1.0 | 67 ± 1 | 0.4 ± 0.4 | 98 |
| | Apr | 1.4 ± 0.7 | 50 ± 1 | 0.6 ± 0.6 | 75 | | |
| May | 3.8 ± 2.3 | 62 ± 1 | 0.2 ± 0.2 | 103 | | | |
| Jul | 1.4 ± 1.4 | 59 | | | | | |
| Aug | 0.2 ± 0.2 | 115 | | | | | |
| Oct | 0.2 ± 0.2 | 110 | 0.2 ± 0.2 | 42 | | | |

Table 2. (Cont'd.)

| Species | Month | Galveston | | Matagorda | | San Antonio | |
|-----------------------|-----------|-----------|----------|-----------|--------|-------------|----------|
| | | No./trawl | Length | No./trawl | Length | No./trawl | Length |
| Black drum | Nov 1977 | | | | | | |
| | Dec | | | | | 0.6 ± 0.6 | 163 |
| | Feb 1978 | | 234 ± 13 | | | 1.8 ± 1.6 | 188 ± 2 |
| | Mar | 0.4 ± 0.2 | 194 | | | | |
| | Oct | 0.2 ± 0.2 | | | | | |
| | Nov | | | 0.4 ± 0.4 | 146 | 0.2 ± 0.2 | 186 |
| | Dec | | | | | 0.6 ± 0.4 | 179 ± 8 |
| | Feb 1979 | 0.2 ± 0.2 | 173 | | | | |
| | Mar | 0.4 ± 0.4 | 186 | | | | |
| | Aug | 0.2 ± 0.2 | 129 | | | | |
| Blackcheek tonguefish | Oct | | | | | 0.8 ± 0.8 | 153 |
| | Dec | 0.2 ± 0.2 | 154 | | | 0.8 ± 0.5 | 183 ± 1 |
| | Feb 1980 | 0.4 ± 0.4 | 190 | | | | |
| | Feb 1978 | 0.2 ± 0.2 | 48 | | | 0.2 ± 0.2 | 125 |
| | Nov | 1.8 ± 1.4 | 114 ± 2 | | | | |
| | Nov 1979 | 0.2 ± 0.2 | 110 | | | | |
| | Feb 1980 | 0.6 ± 0.4 | 116 ± 2 | | | | |
| | Apr | 1.4 ± 1.4 | 113 | | | | |
| | Sep | 0.8 ± 0.8 | 120 | | | 0.3 ± 0.2 | 122 ± 1 |
| | Oct | | | 0.2 ± 0.2 | 130 | | |
| Blue catfish | Nov 1977 | | | | | 0.6 ± 0.6 | 267 |
| | Dec | | | | | 1.2 ± 1.2 | 164 |
| | Apr 1978 | | | | | 0.2 ± 0.2 | 222 |
| | Jul | | | | | 0.2 ± 0.2 | 255 |
| | Oct | | | | | 1.6 ± 1.4 | 125 ± 9 |
| | Dec | | | | | 0.8 ± 0.6 | 188 ± 23 |
| | Apr 1979 | | | | | 1.0 ± 1.0 | 181 |
| | May | | | | | 1.0 ± 1.0 | 175 |
| | Jun | | | | | 0.2 ± 0.2 | 190 |
| | Aug | | | | | 5.2 ± 3.6 | 142 ± 1 |
| Bluefish | May 1978 | | | 0.2 ± 0.2 | 192 | | |
| Bluntnose jack | Nov 1977 | | | | | | |
| | Sep 1980 | 0.2 ± 0.2 | 65 | | | | |
| | Oct | | | 0.2 ± 0.2 | 111 | | |
| Bonnethead | Jun 1978 | | | 0.2 ± 0.2 | 562 | | 98 |
| Creville jack | Jun 1978 | | | | | 0.2 ± 0.2 | 68 |
| | Jul | 0.2 ± 0.2 | 104 | 3.8 ± 1.6 | 99 ± 1 | 1.8 ± 1.4 | 96 ± 1 |
| | Jul 1979 | 0.8 ± 0.8 | 88 | | | | |
| | Jun 1980 | 0.2 ± 0.2 | 65 | | | | |
| | Jul | 0.6 ± 0.4 | 100 ± 1 | | | | |
| Oct | 0.2 ± 0.2 | 89 | | | | | |

Table 2. (Cont'd.)

| Species | Month | Galveston | | Matagorda | | San Antonio | |
|---------------------|-----------|-----------|-----------|-----------|------------|-------------|----------|
| | | No./trawl | Length | No./trawl | Length | No./trawl | Length |
| Finescale menhaden | Dec 1977 | 3.2 ± 1.9 | 75 ± 1 | 8.8 ± 5.6 | 80 ± 2 | | |
| | Feb 1978 | | | 0.4 ± 0.3 | 94 ± 2 | | |
| | Mar | | | 0.6 ± 0.4 | 81 ± 4 | | |
| Flathead catfish | Apr 1979 | 0.2 ± 0.2 | 129 | | | | |
| Florida pompano | Jul 1978 | | | 0.2 ± 0.2 | 98 | | |
| Fringed flounder | Dec 1977 | 0.2 ± 0.2 | 102 | | | | |
| | Sep 1978 | 0.4 ± 0.4 | 90 | | | | |
| | Oct | 0.4 ± 0.2 | 86 ± 6 | | | | |
| Gafftopsail catfish | Jun 1979 | 0.4 ± 0.4 | 90 | | | | |
| | Jun 1980 | 0.2 ± 0.2 | 100 | | | | |
| | Jul | | | | | 0.2 ± 0.2 | 132 |
| | Jul 1978 | | | 3.8 ± 1.7 | 94 ± 1 | 6.8 ± 6.1 | 112 ± 1 |
| | Aug | 1.0 ± 0.6 | 128 ± 3 | 0.4 ± 0.2 | 130 ± 2 | 11.0 ± 1.5 | 135 ± 2 |
| | Sep | 1.0 ± 0.8 | 153 ± 2 | 0.4 ± 0.4 | 187 | 4.0 ± 4.0 | 159 |
| | Oct | | | 0.2 ± 0.2 | 168 | 0.4 ± 0.2 | 157 ± 1 |
| Jul 1979 | 3.4 ± 3.4 | 118 | 0.8 ± 0.6 | 100 ± 1 | 5.8 ± 3.3 | 104 ± 3 | |
| Aug | 5.6 ± 2.7 | 135 ± 1 | 4.4 ± 1.8 | 140 ± 2 | 20.6 ± 3.1 | 140 ± 1 | |
| Sep | 1.0 ± 0.6 | 162 ± 2 | 0.6 ± 0.6 | 149 | 4.2 ± 2.4 | 153 ± 2 | |
| Oct | | | 0.6 ± 9.4 | 158 ± 1 | | | |
| Nov 1980 | 0.6 ± 0.6 | 152 | | | | | |
| Apr 1980 | | | | | 0.2 ± 0.2 | 565 | |
| May | 0.2 ± 0.2 | 109 | 0.2 ± 0.2 | 260 | | | |
| Jul | 1.6 ± 0.7 | 134 ± 2 | 2.6 ± 1.9 | 123 ± 1 | 7.4 ± 2.9 | 127 ± 2 | |
| Aug | | | 1.2 ± 1.2 | 177 | 1.3 ± 0.7 | | |
| Sep | | | | 160 | 0.2 ± 0.2 | 165 | |
| Oct | | | | | | | |
| Gizzard shad | Dec 1977 | 0.5 ± 0.3 | 238 ± 11 | | | 0.2 ± 0.2 | 126 |
| | Feb 1978 | 0.6 ± 0.4 | 237 ± 18 | | | 0.8 ± 0.8 | 134 |
| | Mar | | | | | 0.2 ± 0.2 | 116 |
| | May | | | 0.2 ± 0.2 | 209 | 0.2 ± 0.2 | 156 |
| | Jun | | | | | 0.4 ± 0.4 | 140 |
| | Jul | | | 0.4 ± 0.4 | 108 | 0.6 ± 0.4 | 167 ± 17 |
| | Aug | | | | | 0.6 ± 0.4 | 129 ± 1 |
| | Sep | | | 0.2 ± 0.2 | 115 | 11.5 ± 3.5 | 105 ± 17 |
| | Oct | | | | | 0.2 ± 0.2 | 94 |
| | Nov | 0.4 ± 0.4 | 145 | | | 0.6 ± 0.4 | 170 ± 21 |
| | Dec | | | | | 0.4 ± 0.4 | 92 |
| | Apr 1979 | 0.2 ± 0.2 | 190 | | | | |
| May | 0.2 ± 0.2 | 123 | | | | | |
| Jun | 0.2 ± 0.2 | 161 | | | | | |
| Jul | 0.2 ± 0.2 | 209 | | | | | |
| Aug | 0.4 ± 0.2 | 246 ± 8 | | | | | |
| Sep | | | | | 0.2 ± 0.2 | 112 | |
| Oct | | | | | 3.4 ± 1.0 | 117 ± 3 | |
| Dec | | | | | 1.2 ± 0.7 | 102 ± 1 | |
| | | | | | 0.2 ± 0.2 | 130 | |
| | | | | | 0.2 ± 0.2 | 100 | |

Table 2. (Cont'd.)

| Species | Month | Galveston | | Matagorda | | San Antonio | |
|---------------------------|-----------|-------------|-----------|------------|-----------|--------------|---------|
| | | No./trawl | Length | No./trawl | Length | No./trawl | Length |
| Gizzard shad (Cont'd.) | Feb 1980 | | | | | 0.2 ± 0.2 | 120 |
| | Mar | | | | | 0.2 ± 0.2 | 121 |
| | Jun | | | 0.4 ± 0.4 | 70 | | |
| | Jul | | | 0.6 ± 0.6 | 120 | | |
| Gulf butterflyfish | Apr 1978 | 0.8 ± 0.7 | 60 ± 1 | 3.2 ± 3.0 | 90 ± 2 | | |
| | May | | | 5.8 ± 2.0 | 82 ± 4 | | |
| | Jun | | | 0.6 ± 0.6 | 74 | | |
| | Jul 1978 | | | 2.2 ± 1.4 | 90 ± 1 | | |
| | Oct | | | 2.8 ± 1.6 | 110 ± 9 | | |
| | Nov | 0.8 ± 0.6 | 68 ± 1 | | | | |
| | Dec | 0.6 ± 0.6 | 64 | | | | |
| | Apr 1979 | 0.4 ± 0.4 | 98 | 2.0 ± 1.1 | 80 ± 2 | | |
| | Jun | | | 0.2 ± 0.2 | 87 | | |
| | Jul | 0.4 ± 0.4 | 98 | 0.2 ± 0.2 | 58 | | |
| | Oct | | | 0.2 ± 0.2 | 120 | | |
| | Apr 1980 | 0.2 ± 0.2 | 48 | | | | |
| Sep | | | | | | | |
| Gulf menhaden | Nov 1977 | 2.6 ± 2.1 | 128 ± 4 | 1.8 ± 1.6 | 117 ± 2 | 3.6 ± 1.3 | 92 ± 1 |
| | Dec | | | | | 28.4 ± 11.7 | 82 ± 3 |
| | Feb 1978 | | | | | 0.8 ± 0.4 | 84 ± 1 |
| | Mar | | | | | 0.8 ± 0.5 | 90 |
| | Apr | 0.6 ± 0.4 | 112 ± 11 | 0.8 ± 0.4 | 135 ± 7 | 101.2 ± 92.8 | 47 ± 2 |
| | May | 0.5 ± 0.5 | 123 | 15.4 ± 5.3 | 106 ± 4 | 14.8 ± 5.9 | 68 ± 3 |
| | Jun | 0.2 ± 0.2 | 130 | 5.0 ± 2.3 | 82 ± 8 | 3.4 ± 1.2 | 93 ± 6 |
| | Jul | 0.4 ± 0.4 | 128 | 14.0 ± 7.0 | 93 ± 3 | 2.4 ± 1.1 | 83 ± 6 |
| | Aug | 1.2 ± 1.2 | 92 | | | 2.8 ± 2.1 | 93 ± 4 |
| | Sep | 0.2 ± 0.2 | 99 | 1.8 ± 1.8 | 115 | | |
| | Oct | 14.0 ± 13.3 | 100 ± 1 | 3.6 ± 1.2 | 93 ± 2 | 7.2 ± 4.0 | 93 ± 6 |
| | Nov | 0.2 ± 0.2 | 143 | 1.8 ± 0.9 | 106 ± 3 | 1.6 ± 0.9 | 92 ± 2 |
| | Dec | 2.0 ± 1.5 | 129 ± 1 | | | 20.0 ± 12.0 | 94 ± 1 |
| | Feb 1979 | 2.4 ± 1.2 | 118 ± 5 | 1.4 ± 1.2 | 118 ± 5 | 0.2 ± 0.2 | 151 |
| | Mar | 1.6 ± 0.8 | 109 ± 4 | 2.8 ± 1.4 | 110 ± 1 | | |
| | Apr | 8.6 ± 3.6 | 126 ± 3 | 1.6 ± 1.1 | 121 ± 5 | | |
| | May | 37.4 ± 26.8 | 101 ± 2 | 8.8 ± 2.7 | 77 ± 5 | 1.0 ± 0.8 | 93 ± 6 |
| | Jun | 8.0 ± 6.3 | 115 ± 2 | 1.4 ± 1.0 | 114 ± 1 | 0.4 ± 0.2 | 86 ± 2 |
| | Jul | 1.6 ± 0.5 | 120 ± 4 | 0.8 ± 0.5 | 101 ± 2 | 1.6 ± 1.4 | 98 ± 6 |
| | Aug | 1.6 ± 1.2 | 126 ± 1 | 3.4 ± 2.5 | 111 ± 2 | 1.4 ± 0.5 | 85 ± 2 |
| | Sep | 2.6 ± 1.7 | 131 ± 1 | 4.8 ± 3.2 | 108 ± 3 | 3.8 ± 1.7 | 98 ± 1 |
| | Oct | 0.8 ± 0.4 | 109 ± 2 | 12.6 ± 7.0 | 117 ± 3 | 3.4 ± 1.7 | 119 ± 8 |
| | Nov | 26.8 ± 22.2 | 113 ± 1 | 0.8 ± 0.8 | 99 | 0.8 ± 0.5 | 104 ± 3 |
| | Dec | 0.8 ± 0.8 | 116 | | | 0.2 ± 0.2 | 87 |
| Feb 1980 | 1.0 ± 0.5 | 76 ± 5 | 2.8 ± 2.6 | 69 ± 2 | 3.8 ± 2.4 | 84 ± 8 | |
| Mar | 1.2 ± 0.7 | 72 ± 12 | 0.4 ± 0.2 | 108 ± 1 | 0.6 ± 0.2 | 114 ± 15 | |
| Apr | 2.8 ± 1.7 | 85 ± 3 | 0.2 ± 0.2 | 78 | 1.4 ± 0.9 | 65 ± 4 | |
| May | 4.4 ± 2.7 | 95 ± 2 | 4.4 ± 1.4 | 85 ± 1 | 5.8 ± 2.4 | 73 ± 2 | |
| Jun | 1.8 ± 1.4 | 126 ± 5 | 4.4 ± 1.4 | 85 ± 1 | 1.2 ± 0.4 | 95 ± 2 | |
| Jul | 1.2 ± 1.0 | 100 ± 1 | 4.4 ± 1.8 | 84 ± 2 | 2.0 ± 0.9 | 86 ± 4 | |

Table 2. (Cont'd.)

| Species | Month | Galveston | | | Matagorda | | | San Antonio | | |
|----------------------------|-----------|-----------|----------|-----------|-------------|----------|-----------|-------------|----------|--|
| | | No./trawl | Length | | No./trawl | Length | | No./trawl | Length | |
| Gulf menhaden (Cont'd.) | Aug | 0.6 ± 0.2 | 149 ± 21 | | 3.0 ± 1.8 | 102 ± 3 | | 1.0 ± 0.6 | 93 ± 2 | |
| | Sep | 0.2 ± 0.2 | 113 | | 13.2 ± 7.9 | 102 ± 1 | | 0.7 ± 0.5 | 86 ± 4 | |
| | Oct | 1.2 ± 0.5 | 100 ± 3 | | 6.6 ± 4.1 | 102 ± 1 | | 4.0 ± 3.5 | 104 ± 1 | |
| Gulf pipefish | Sep 1978 | | | | 1.2 ± 1.2 | 74 | | | | |
| Gulf toadfish | Apr 1979 | 0.2 ± 0.2 | 171 | | | | | 0.4 ± 0.4 | 148 | |
| | Jul | 0.2 ± 0.2 | 108 | | | | | | | |
| | Jul 1980 | 0.2 ± 0.2 | 160 | | | | | | | |
| | Aug | 0.2 ± 0.2 | 167 | | | | | | | |
| Hardhead catfish | Nov 1977 | 0.8 ± 0.4 | 110 ± 6 | | 0.2 | 258 ± 19 | | 0.2 ± 0.2 | 287 | |
| | Mar 1978 | | | | 0.4 ± 0.2 | 219 ± 12 | | 3.0 ± 1.9 | 277 ± 4 | |
| | Apr | | | | 0.8 ± 0.4 | 204 ± 1 | | 2.0 ± 0.5 | 220 ± 3 | |
| | May | 0.2 ± 0.2 | 146 | | 2.6 ± 2.1 | 183 ± 6 | | 6.8 ± 3.9 | 255 ± 5 | |
| | Jun | | | | 8.0 ± 3.0 | 179 ± 1 | | 1.8 ± 1.3 | 250 ± 4 | |
| | Jul | | | | 14.6 ± 10.1 | 146 ± 5 | | 0.8 ± 0.8 | 94 | |
| | Aug | | | | 0.6 ± 0.4 | 182 ± 14 | | 1.0 ± 1.0 | 222 | |
| | Sep | | | | 0.6 ± 0.4 | 132 ± 3 | | 0.4 ± 0.2 | 180 ± 33 | |
| | Oct | 0.6 ± 0.6 | 155 | | 0.8 ± 0.6 | 135 ± 10 | | 0.4 ± 0.2 | 100 ± 2 | |
| | Nov | 0.2 ± 0.2 | 245 | | 0.4 ± 0.2 | 122 ± 3 | | 1.0 ± 0.5 | 223 ± 8 | |
| | Mar 1979 | | | | 1.6 ± 0.8 | 165 ± 10 | | 0.2 ± 0.2 | 285 | |
| | Apr | | | | 1.2 ± 0.5 | 93 ± 9 | | 0.4 ± 0.2 | 278 ± 29 | |
| | May | 0.6 ± 0.4 | 144 ± 2 | | 5.4 ± 3.4 | 146 | | 1.8 ± 0.5 | 165 ± 3 | |
| Jun | 3.2 ± 1.2 | 156 ± 1 | | 0.4 ± 0.4 | 139 ± 15 | | 0.2 ± 0.2 | 158 | | |
| Jul | 8.0 ± 6.5 | 158 ± 1 | | 1.2 ± 0.5 | 157 ± 6 | | 5.0 ± 3.8 | 98 ± 3 | | |
| Aug | 2.0 ± 1.8 | 174 ± 1 | | 2.6 ± 1.2 | 218 ± 22 | | 0.4 ± 0.4 | 220 | | |
| Sep | 1.4 ± 0.7 | 112 ± 8 | | 0.4 ± 0.2 | 143 ± 4 | | 1.4 ± 0.7 | 203 ± 10 | | |
| Oct | 1.0 ± 0.6 | 163 ± 27 | | 3.2 ± 1.5 | 175 ± 18 | | 0.6 ± 0.6 | 221 | | |
| Mar 1980 | 6.8 ± 4.3 | 163 ± 3 | | 1.4 ± 0.9 | 170 ± 3 | | 0.8 ± 0.5 | 220 ± 18 | | |
| Apr | 0.6 ± 0.6 | 137 | | 0.8 ± 0.4 | 200 ± 9 | | 2.2 ± 2.2 | 74 | | |
| May | 0.6 ± 0.6 | 170 ± 2 | | 1.6 ± 0.9 | 165 ± 3 | | | | | |
| Jun | 0.4 ± 0.2 | 107 ± 13 | | 1.0 ± 0.4 | 216 ± 3 | | 0.5 ± 0.3 | 168 ± 31 | | |
| Jul | 0.6 ± 0.4 | 136 ± 11 | | 1.0 ± 0.5 | 171 ± 13 | | | | | |
| Aug | 1.2 ± 0.7 | 115 ± 8 | | 1.0 ± 0.3 | 123 | | | | | |
| Sep | 2.0 ± 1.3 | | | 0.4 ± 0.4 | 65 ± 1 | | 0.8 ± 0.8 | 103 | | |
| Oct | | | | 0.8 ± 0.5 | 82 ± 1 | | 0.2 ± 0.2 | 113 | | |
| Harvestfish | Apr 1978 | | | | 29.6 ± 20.0 | 103 | | 0.4 ± 0.4 | 93 | |
| | May | 0.8 ± 0.8 | 82 | | 0.2 ± 0.2 | 187 | | | | |
| | Jun | 2.8 ± 1.4 | 69 ± 5 | | 0.2 ± 0.2 | | | 1.0 ± 1.0 | 81 | |
| | Jul | 1.8 ± 0.9 | 85 ± 1 | | | | | | | |
| | Aug | | | | | | | | | |
| | Sep | | | | | | | | | |
| | Oct | 0.2 ± 0.2 | 89 | | | | | | | |
| | Nov | 0.2 ± 0.2 | 56 | | | | | | | |
| | Nov 1979 | | | | 0.2 ± 0.2 | 145 | | | | |
| | Jun 1980 | 1.8 ± 1.8 | 52 | | | | | | | |
| Jul | 0.2 ± 0.2 | 60 | | 1.0 ± 0.5 | 90 ± 1 | | | | | |

Table 2. (Cont'd.)

| Species | Month | Galveston | | Matagorda | | San Antonio | |
|--------------------------|----------|-----------|--------|-----------|---------|-------------|---------|
| | | No./trawl | Length | No./trawl | Length | No./trawl | Length |
| Harvestfish (Cont'd.) | Sep | | | 0.6 ± 0.4 | 75 ± 2 | | |
| | Oct | 0.2 ± 0.2 | 47 | 0.4 ± 0.2 | 62 ± 1 | | |
| Herring | Mar 1979 | | | | | 13.2 ± 8.7 | 34 ± 1 |
| | Nov 1977 | | | 0.4 ± 0.4 | 72 | | |
| Hogchoker | Jul 1978 | | | 0.2 ± 0.2 | 73 | | |
| | Nov 1979 | | | 1.2 ± 0.6 | 107 ± 3 | 0.2 ± 0.2 | 85 |
| Horse-eye jack | Apr | | | | | 0.2 ± 0.2 | 136 |
| | May | | | | | 0.4 ± 0.2 | 44 ± 15 |
| Inland silverside | Oct | 0.2 ± 0.2 | 61 | 0.2 ± 0.2 | 77 | | |
| | Mar 1980 | | | 0.2 ± 0.2 | 78 | 0.6 ± 0.4 | 84 ± 1 |
| Inshore lizardfish | Apr | 0.4 ± 0.4 | 102 | 0.2 ± 0.2 | 75 ± 1 | | |
| | May | | | 0.6 ± 0.2 | | | |
| Ladyfish | Jun | 0.6 ± 0.4 | 69 ± 2 | 0.4 ± 0.4 | 70 | | |
| | Oct | | | | | 0.2 ± 0.2 | 55 |
| Least puffer | Jun 1978 | | | 0.6 ± 0.6 | 55 ± 4 | | |
| | Sep 1980 | | | 0.2 ± 0.2 | 110 | | |
| Ladyfish | Oct | | | 0.2 ± 0.2 | 61 | | |
| | Nov 1977 | | | 0.2 ± 0.2 | 210 | | |
| Least puffer | Sep 1978 | 0.2 ± 0.2 | 244 | | | 0.2 ± 0.2 | 230 |
| | Aug 1980 | | | | | | |
| Ladyfish | Sep | 0.2 ± 0.2 | 136 | | | | |
| | Oct | 0.4 ± 0.4 | 264 | | | | |
| Least puffer | Jul 1978 | | | 0.2 ± 0.2 | 266 | | |
| | Nov 1977 | 1.4 ± 1.0 | 63 ± 1 | | | | |
| Ladyfish | Dec | 1.2 ± 0.8 | 56 ± 3 | 2.8 ± 1.5 | 57 ± 1 | | |
| | Mar 1978 | | | | | 0.2 ± 0.2 | 98 |
| Least puffer | Apr | 0.2 ± 0.2 | 30 | 0.2 ± 0.2 | 118 | | |
| | May | | | | | | |
| Ladyfish | Jun | 0.2 ± 0.2 | 26 | | | 0.2 ± 0.2 | 105 |
| | Jul | 0.2 ± 0.2 | 43 | | | 0.2 ± 0.2 | 35 |
| Least puffer | Aug | 1.6 ± 1.6 | 57 | | | 0.2 ± 0.2 | 48 |
| | Oct | 1.8 ± 1.0 | 78 ± 2 | | | 0.2 ± 0.2 | 66 |
| Ladyfish | Nov | 0.2 ± 0.2 | 72 | | | 0.6 ± 0.6 | 76 |
| | Dec | 1.4 ± 0.2 | 87 ± 3 | | | | |
| Least puffer | Mar 1979 | | | 0.2 ± 0.2 | 87 | | |
| | Apr | | | 0.2 ± 0.2 | 99 | | |
| Least puffer | May | 0.2 ± 0.2 | 72 | 0.4 ± 0.4 | 91 | | |
| | Jun | 0.4 ± 0.4 | 51 | | | | |
| Least puffer | Oct | 0.2 ± 0.2 | 86 | | | | |
| | Dec | 0.4 ± 0.2 | 88 ± 2 | | | | |

Table 2. (Cont'd.)

| Species | Month | Galveston | | | Matagorda | | | San Antonio | | |
|---------------------------|----------|-----------|---------|--------|-----------|--------|--------|-------------|---------|--------|
| | | No./trawl | Length | Length | No./trawl | Length | Length | No./trawl | Length | Length |
| Least puffer (Cont'd.) | Mar | 0.2 ± 0.2 | 117 | | | | | 0.2 ± 0.2 | 95 | |
| | May | 0.2 ± 0.2 | 105 | | | 90 | | | | |
| | Jul | 0.2 ± 0.2 | 55 | | | | | | | |
| | Aug | 0.8 ± 0.8 | 54 | | | | | | | |
| | Sep | 0.4 ± 0.2 | 62 ± 2 | | | 62 | | | | 43 ± 3 |
| | Oct | 1.2 ± 0.6 | 61 ± 1 | | | 57 ± 1 | | | | 60 ± 1 |
| Lefteye flounders | | | | | | | | | | |
| | Oct 1980 | | | | | | | 0.2 ± 0.2 | 80 | |
| Lined sole | | | | | | | | | | |
| | Aug 1978 | | | | 0.2 ± 0.2 | 90 | | | | |
| | Mar 1979 | | | | 0.2 ± 0.2 | 73 | | | | |
| | Oct 1980 | 0.4 ± 0.2 | 62 ± 2 | | | | | | | |
| Longnose gar | | | | | | | | | | |
| | Sep 1978 | | | | 0.2 ± 0.2 | 1,005 | | | | |
| Lookdown | | | | | | | | | | |
| | Aug 1978 | | | | 0.2 ± 0.2 | 74 | | | | |
| | Jun 1979 | 0.8 ± 0.5 | 53 ± 2 | | | | | | | |
| | Jul | 2.0 ± 2.0 | 64 | | | | | | | |
| | Aug | 0.2 ± 0.2 | 52 | | | | | | | |
| | Oct | 0.2 ± 0.2 | 58 | | | 38 | | | | |
| | Nov | 0.4 ± 0.4 | 82 | | | | | | | |
| | Jun 1980 | 1.2 ± 1.2 | 65 | | | | | | | |
| | Jul | 0.2 ± 0.2 | 51 | | | | | | | |
| Ocellated flounder | | | | | | | | | | |
| | Apr 1979 | | | | 0.2 ± 0.2 | 105 | | | | |
| | Mar 1980 | | | | 0.6 ± 0.4 | 80 ± 8 | | | | |
| | May | | | | 0.2 ± 0.2 | 118 | | | | |
| Pigfish | | | | | | | | | | |
| | Nov 1977 | | | | 0.2 ± 0.2 | 182 | | | | |
| | Jun 1978 | 0.8 ± 0.8 | 85 | | | | | | | |
| | Aug | 0.2 ± 0.2 | 140 | | | 136 | | | | |
| | Sep | 0.8 ± 0.8 | 159 | | | | | | | |
| | Apr 1979 | | | | 0.2 ± 0.2 | 164 | | | | |
| | Aug | 0.2 ± 0.2 | 240 | | | | | | | |
| | Apr 1980 | | | | 0.4 ± 0.4 | 174 | | | | |
| | May | 0.4 ± 0.4 | 188 | | | | | | | |
| | Jun | 0.2 ± 0.2 | 47 | | | | | | | |
| | Oct | | | | | | | 0.2 ± 0.2 | 144 | |
| Pinfish | | | | | | | | | | |
| | Nov 1977 | 0.2 ± 0.2 | 155 | | | | | | | |
| | Dec | | | | | | | | | |
| | May 1978 | | | | | | | | | |
| | Jul | | | | | | | | | |
| | Aug | 1.4 ± 0.9 | 137 ± 5 | | 1.6 ± 1.6 | 111 | | | | |
| | Sep | | | | 0.2 ± 0.2 | 143 | | | | |
| | Oct | | | | 0.4 ± 0.4 | 122 | | | | |
| | Nov | | | | | | | | | |
| | Dec | | | | | | | | | |
| | Apr 1979 | | | | 0.2 ± 0.2 | 139 | | | | |
| | Jul | | | | 0.2 ± 0.2 | 117 | | | | |
| | | | | | | | | 0.8 ± 0.8 | 110 | |
| | | | | | | | | 0.2 ± 0.2 | 80 | |
| | | | | | | | | 0.4 ± 0.4 | 139 | |
| | | | | | | | | 1.0 ± 0.6 | 105 ± 1 | |
| | | | | | | | | 0.5 ± 0.5 | 100 | |
| | | | | | | | | 0.6 ± 0.4 | 124 ± 1 | |
| | | | | | | | | 0.6 ± 0.6 | 113 ± 1 | |
| | | | | | | | | 0.2 ± 0.2 | 94 | |

Table 2. (Cont'd.)

| Species | Month | Galveston | | Matagorda | | San Antonio | |
|----------------------|-----------|-------------|-----------|------------|-----------|-------------|----------|
| | | No./trawl | Length | No./trawl | Length | No./trawl | Length |
| Pinfish (Cont'd.) | Feb 1980 | 0.2 ± 0.2 | 112 | | | | |
| | Jul | | | | | 0.2 ± 0.2 | 103 |
| | Aug | | | 0.4 ± 0.4 | 126 | 2.2 ± 1.7 | 115 ± 1 |
| | Sep | | | 0.6 ± 0.4 | 121 ± 3 | 0.3 ± 0.3 | 120 |
| | Oct | | | | | 1.4 ± 0.9 | 104 ± 2 |
| Red drum | Apr 1979 | | | 0.2 ± 0.2 | 130 | | |
| Sand perch | Nov 1978 | 0.2 ± 0.2 | 94 | | | | |
| Sand seatrout | Nov 1977 | 1.8 ± 0.6 | 137 ± 2 | 0.6 ± 0.6 | 123 | 1.0 ± 0.3 | 94 ± 9 |
| | Dec | 2.0 ± 1.7 | 109 ± 3 | | | | |
| | Apr 1978 | 0.4 ± 0.2 | 131 ± 2 | 0.2 ± 0.2 | 146 | | |
| | May | 5.2 ± 2.0 | 127 ± 8 | 1.2 ± 0.5 | 122 ± 9 | 0.2 ± 0.2 | 207 |
| | Jun | 5.8 ± 2.1 | 117 ± 2 | 0.6 ± 0.2 | 95 ± 3 | | |
| | Jul | 3.0 ± 2.3 | 132 ± 1 | 1.8 ± 1.0 | 96 ± 1 | 0.2 ± 0.2 | 103 |
| | Aug | 3.0 ± 1.3 | 138 ± 6 | 1.2 ± 0.7 | 166 ± 2 | | |
| | Sep | 3.0 ± 1.5 | 156 ± 2 | 0.4 ± 0.4 | 136 | | |
| | Oct | 5.8 ± 3.1 | 98 ± 4 | | | | |
| | Nov | 6.0 ± 2.6 | 108 ± 5 | | | | |
| | Dec | 1.6 ± 1.0 | 107 ± 3 | | | | |
| | Mar 1979 | 0.4 ± 0.4 | 84 | | | 1.4 ± 0.7 | 103 ± 4 |
| | Apr | 0.2 ± 0.2 | 148 | 0.6 ± 0.6 | 131 | | |
| | May | 1.6 ± 0.5 | 108 ± 5 | 8.2 ± 3.0 | 96 ± 5 | 0.6 ± 0.6 | 56 |
| | Jun | 10.0 ± 5.3 | 135 ± 5 | 11.6 ± 6.1 | 99 ± 2 | 1.0 ± 0.4 | 90 ± 7 |
| | Jul | 26.0 ± 10.8 | 113 ± 5 | 4.4 ± 2.9 | 115 ± 3 | 0.6 ± 0.4 | 141 ± 7 |
| | Aug | 12.2 ± 3.7 | 130 ± 3 | 1.2 ± 0.6 | 126 ± 7 | 0.4 ± 0.4 | 74 |
| Sep | 6.8 ± 3.0 | 152 ± 4 | 2.0 ± 1.5 | 75 ± 8 | 0.2 ± 0.2 | 79 | |
| Oct | 3.8 ± 2.6 | 96 ± 5 | 0.4 ± 0.2 | 176 ± 8 | 3.4 ± 2.7 | 93 ± 3 | |
| Nov | 2.8 ± 1.8 | 210 ± 3 | 0.8 ± 0.8 | 105 | | | |
| Dec | 0.8 ± 0.5 | 136 ± 14 | | | 0.2 ± 0.2 | 102 | |
| Mar 1980 | 0.2 ± 0.2 | 99 | | | | | |
| Apr | 5.4 ± 4.4 | 119 ± 1 | 1.2 ± 0.4 | 128 ± 3 | | | |
| May | 4.6 ± 1.9 | 136 ± 1 | 2.8 ± 1.5 | 138 ± 2 | | | |
| Jun | 6.4 ± 2.2 | 126 ± 7 | 5.0 ± 3 | 101 ± 4 | 0.4 ± 0.2 | 80 ± 2 | |
| Jul | 1.0 ± 0.8 | 142 ± 7 | 3.6 ± 3.1 | 109 ± 1 | | | |
| Aug | 3.4 ± 1.9 | 118 ± 5 | 1.0 ± 0.3 | 118 ± 2 | 0.4 ± 0.4 | 50 | |
| Sep | 0.4 ± 0.2 | 168 ± 10 | 0.6 ± 0.4 | 101 ± 3 | 0.3 ± 0.2 | 36 ± 12 | |
| Oct | 2.2 ± 0.9 | 107 ± 5 | 0.8 ± 0.4 | 170 ± 14 | 0.4 ± 0.4 | 121 | |
| Scaled sardine | Sep 1980 | | | | | 0.2 ± 0.2 | 63 |
| Scrawled filefish | Aug 1980 | | | | | 0.2 ± 0.2 | 110 |
| Sheepshead | Nov 1977 | | | | | 0.6 ± 0.6 | 105 |
| | Dec | | | | | 0.6 ± 0.6 | 184 |
| | Mar 1978 | 1.0 ± 0.4 | 284 ± 22 | | | 0.2 ± 0.2 | 135 |
| | Dec | | | | | 0.4 ± 0.2 | 104 ± 11 |
| | Nov | 0.2 ± 0.2 | 205 | 0.8 ± 0.8 | 123 | 0.2 ± 0.2 | 90 |

Table 2. (Cont'd.)

| Species | Month | Calveston | | Matagorda | | San Antonio | |
|-------------------------|------------|-----------|------------|-----------|-----------|-------------|---------|
| | | No./trawl | Length | No./trawl | Length | No./trawl | Length |
| Sheepshead (Cont'd.) | Dec 1980 | 0.2 ± 0.2 | 305 | | | 0.6 ± 0.6 | 103 |
| | Feb 1980 | 1.0 ± 0.6 | 155 ± 6 | | | 0.2 ± 0.2 | 116 |
| | Mar | | | | | 0.2 ± 0.2 | 135 |
| | May | | | | | | |
| | Aug Oct | 0.4 ± 0.4 | 192 | 0.2 ± 0.2 | 150 | | |
| Sheepshead minnow | Dec 1978 | 0.2 ± 0.2 | 46 | | | | |
| Silver jenny | Sep 1980 | | | 0.2 ± 0.2 | 83 | | |
| Silver perch | Nov 1977 | | | 0.6 ± 0.2 | 129 ± 1 | 1.6 ± 0.8 | 119 ± 2 |
| | Dec | | | 0.2 ± 0.2 | 111 | | |
| | Apr 1978 | 0.2 ± 0.2 | 130 | 1.0 ± 0.5 | 124 ± 1 | 0.2 ± 0.2 | 137 |
| | May | | | 0.2 ± 0.2 | 130 | | |
| | Jul | 0.8 ± 0.8 | 152 | 0.4 ± 0.4 | 141 | 1.6 ± 1.4 | 88 ± 1 |
| | Aug | | | 0.4 ± 0.4 | 135 | 2.6 ± 2.1 | 112 ± 2 |
| | Sep | 4.0 ± 2.5 | 132 ± 1 | 1.0 ± 1.0 | 88 | 0.5 ± 0.5 | 135 |
| | Oct | 0.2 ± 0.2 | 142 | 0.4 ± 0.4 | 140 | 0.2 ± 0.2 | 120 |
| | Nov | 0.2 ± 0.2 | 132 | 1.2 ± 1.0 | 137 ± 3 | | |
| | Dec | | | 1.4 ± 0.6 | 134 ± 1 | 0.2 ± 0.2 | 136 |
| | Mar 1979 | | | 0.6 ± 0.6 | 133 | 0.2 ± 0.2 | 141 |
| | Apr | 0.2 ± 0.2 | 160 | | | 0.2 ± 0.2 | 131 |
| | May | 0.8 ± 0.8 | 143 | | | 0.4 ± 0.2 | 138 ± 2 |
| | Jun | 1.0 ± 0.8 | 127 ± 1 | 0.4 ± 0.4 | 140 | 0.4 ± 0.4 | 113 |
| | Jul | 0.2 ± 0.2 | 160 | 0.2 ± 0.2 | 149 | 0.6 ± 0.6 | 114 |
| | Aug | 1.0 ± 1.0 | 147 | 0.2 ± 0.2 | 101 | 0.2 ± 0.2 | 118 |
| | Sep | 1.8 ± 1.6 | 148 ± 2 | | | 1.8 ± 1.8 | 109 |
| Oct | 1.2 ± 1.0 | 147 ± 1 | 0.2 ± 0.2 | 124 | | | |
| Nov | | | 0.2 ± 0.2 | 128 | | | |
| Feb 1980 | | | 0.2 ± 0.2 | 131 | | | |
| Mar | | | 0.8 ± 0.8 | 131 | | | |
| Apr | 0.2 ± 0.2 | 140 | 1.2 ± 1.0 | 128 ± 1 | 0.2 ± 0.2 | 152 | |
| May | 0.2 ± 0.2 | 147 | 1.2 ± 0.6 | 136 ± 1 | | | |
| Jun | | | 0.4 ± 0.4 | 154 | | | |
| Jul | | | 2.8 ± 2.3 | 89 ± 6 | | | |
| Aug | | | 6.4 ± 3.2 | 101 ± 2 | 2.8 ± 1.7 | 111 ± 1 | |
| Sep | 0.4 ± 0.4 | 142 | 3.8 ± 3.8 | 120 | | | |
| Oct | 0.2 ± 0.2 | 131 | 11.6 ± 6.7 | 138 ± 1 | 2.4 ± 2.4 | 118 | |
| Skilletfish | Feb 1979 | | | 0.2 ± 0.2 | 76 | | |
| Apr | 0.2 ± 0.2 | 83 | | | | | |
| Skipjack herring | Nov 1977 | 0.6 ± 0.6 | 108 | | | | |
| Smooth puffer | Aug 1980 | | | 0.2 ± 0.2 | 95 | | |

Table 2. (Cont'd.)

| Species | Month | Galveston | | Mataforda | | San Antonio | |
|-------------------|-----------|-----------|-----------|-----------|-----------|-------------|----------|
| | | No./trawl | Length | No./trawl | Length | No./trawl | Length |
| Southern flounder | Nov 1977 | | | 0.2 ± 0.2 | 131 | | |
| | Feb 1978 | | | | | 0.2 ± 0.2 | 165 |
| | Mar | 0.2 ± 0.2 | 223 | 0.2 ± 0.2 | 157 | | |
| | May | 1.2 ± 0.7 | 121 ± 6 | 0.2 ± 0.2 | 144 | 0.4 ± 0.2 | 81 ± 7 |
| | Jun | | | 0.2 ± 0.2 | 181 | 0.2 ± 0.2 | 115 |
| | Aug | 0.4 ± 0.4 | 128 | 0.6 ± 0.4 | 167 ± 8 | | |
| | Sep | | | 0.4 ± 0.4 | 148 | | |
| | Nov | | | 0.6 ± 0.4 | 178 ± 8 | | |
| | Dec | 0.4 ± 0.4 | 253 | | | | |
| | Feb 1979 | | | 0.2 ± 0.2 | 152 | | |
| | Apr | | | 0.2 ± 0.2 | 192 | 0.2 ± 0.2 | 148 |
| | May | 0.2 ± 0.2 | 224 | 0.4 ± 0.4 | 86 | 0.4 ± 0.4 | 169 |
| | Jun | 0.6 ± 0.4 | 182 ± 19 | | | | |
| | Aug | 0.2 ± 0.2 | 139 | 0.2 ± 0.2 | 96 | 0.6 ± 0.4 | 106 ± 3 |
| Nov | | | | | 0.2 ± 0.2 | 132 | |
| Dec | 0.4 ± 0.4 | 198 | | | 0.2 ± 0.2 | 157 | |
| Feb 1980 | 1.2 ± 1.2 | 195 | | | | | |
| Apr | 0.2 ± 0.2 | 237 | | | | | |
| Jun | 0.2 ± 0.2 | 116 | 0.2 ± 0.2 | 278 | | | |
| Jul | | | 0.4 ± 0.2 | 186 ± 26 | | | |
| Oct | 0.2 ± 0.2 | 57 | 0.2 ± 0.2 | 125 | 0.6 ± 0.4 | 97 ± 4 | |
| Southern hake | Apr 1980 | 0.4 ± 0.4 | 196 | | | | |
| Southern kingfish | Nov 1977 | | | 0.8 ± 0.8 | 153 | | |
| | Dec | | | 0.2 ± 0.2 | 88 | | |
| | Jul 1978 | | | 0.2 ± 0.2 | 215 | | |
| | Nov | 0.2 ± 0.2 | 151 | | | | |
| | Dec 1979 | 0.4 ± 0.4 | 148 | | | | |
| | Feb 1980 | 1.4 ± 1.4 | 143 | | | | |
| | Apr | 0.6 ± 0.4 | 144 ± 7 | 0.4 ± 0.4 | 132 | | |
| | Aug | | | 0.2 ± 0.2 | 214 | | |
| | Sep | 0.4 ± 0.2 | 112 ± 11 | | | | |
| | Aug 1980 | | | 0.6 ± 0.6 | 153 | | |
| Southern stingray | Aug 1980 | | | 0.6 ± 0.4 | 120 ± 5 | | |
| Spanish mackerel | Jul 1978 | | | | | | |
| Jul 1979 | 0.2 ± 0.2 | 147 | | | | | |
| May 1979 | 0.2 ± 0.2 | 155 | | | | | |
| Spanish sardine | Nov 1977 | 1.4 ± 0.7 | 122 ± 2 | 8.4 ± 7.9 | 125 ± 1 | 2.6 ± 1.7 | 103 ± 4 |
| | Dec | 4.2 ± 3.3 | 115 ± 1 | 0.2 ± 0.2 | 114 | 2.4 ± 1.4 | 110 ± 3 |
| | Feb 1978 | 8.8 ± 8.8 | 116 | 0.4 ± 0.4 | 136 | 0.4 ± 0.4 | 128 |
| | Mar | 3.2 ± 2.3 | 117 ± 1 | 1.6 ± 0.8 | 120 ± 3 | | |
| | Apr | 4.0 ± 2.0 | 138 ± 2 | 2.0 ± 1.3 | 143 ± 2 | 6.2 ± 2.6 | 101 ± 13 |
| | May | 1.5 ± 1.0 | 151 ± 9 | 0.6 ± 0.4 | 93 ± 6 | 6.4 ± 3.4 | 100 ± 3 |
| | Jun | 1.8 ± 1.8 | 100 | 7.4 ± 4.1 | 79 ± 1 | 4.4 ± 2.2 | 97 ± 4 |
| | Jul | 0.6 ± 0.6 | 110 | 7.2 ± 3.2 | 101 ± 2 | 13.8 ± 5.2 | 107 ± 2 |
| | Aug | 0.2 ± 0.2 | 127 | 5.6 ± 5.6 | 130 | 6.0 ± 3.6 | 119 ± 1 |
| | Spot | Nov 1977 | | | | | |
| Dec | | | | | | | |
| Feb 1978 | | | | | | | |
| Mar | | | | | | | |
| Apr | | | | | | | |
| May | | | | | | | |
| Jun | | | | | | | |
| Jul | | | | | | | |
| Aug | | | | | | | |

Table 2. (Cont'd.)

| Species | Galveston | | | Matagorda | | | San Antonio | | |
|-------------------|-----------|-----------|-----------|-----------|-------------|-------------|-------------|--|--|
| | Month | No./trawl | Length | No./trawl | Length | No./trawl | Length | | |
| Spot (Cont'd.) | Sep 1978 | 0.2 ± 0.2 | 148 | 1.6 ± 1.4 | 112 ± 0 | 12.5 ± 12.5 | 115 | | |
| | Oct | 0.2 ± 0.2 | 127 | 0.8 ± 0.6 | 123 ± 3 | 5.0 ± 3.3 | 121 ± 1 | | |
| | Nov | | | 3.4 ± 2.3 | 126 ± 2 | 0.6 ± 0.2 | 139 ± 3 | | |
| | Dec | 1.4 ± 1.2 | 149 ± 1 | | | | | | |
| | Feb 1979 | 0.4 ± 0.2 | 130 ± 7 | 0.4 ± 0.2 | 145 ± 2 | 0.4 ± 0.4 | 86 | | |
| | Mar | 2.8 ± 2.6 | 141 ± 1 | 0.8 ± 0.4 | 129 ± 9 | 27.0 ± 22.9 | 93 ± 1 | | |
| | Apr | 1.0 ± 0.6 | 162 ± 4 | 6.0 ± 2.9 | 86 ± 3 | 1.0 ± 0.4 | 95 ± 4 | | |
| | May | 6.0 ± 5.0 | 95 ± 1 | 2.2 ± 2.2 | 109 | 1.0 ± 0.8 | 100 ± 1 | | |
| | Jun | 1.0 ± 0.5 | 113 ± 9 | 1.2 ± 1.2 | 102 | 0.2 ± 0.2 | 102 | | |
| | Jul | 7.2 ± 6.7 | 93 ± 2 | 0.2 ± 0.2 | 92 | 0.2 ± 0.2 | 98 | | |
| | Aug | 1.8 ± 0.9 | 114 ± 2 | 1.6 ± 1.6 | 123 | 0.2 ± 0.2 | 125 | | |
| | Sep | 2.8 ± 2.6 | 120 ± 1 | 0.6 ± 0.4 | 125 ± 1 | 0.2 ± 0.2 | 142 | | |
| Oct | 0.6 ± 0.2 | 115 ± 1 | | | | | | | |
| Nov | 3.4 ± 3.4 | 126 | | | | | | | |
| Feb 1980 | 3.6 ± 2.9 | 156 ± 1 | 0.2 ± 0.2 | 138 | 0.2 ± 0.2 | 129 | | | |
| Mar | | | 2.6 ± 1.5 | 99 ± 6 | 20.4 ± 19.9 | 84 ± 1 | | | |
| Apr | 2.4 ± 1.1 | 106 ± 3 | 2.0 ± 1.8 | 97 ± 4 | 1.6 ± 0.9 | 92 ± 1 | | | |
| May | 1.2 ± 0.6 | 111 ± 1 | 0.4 ± 0.4 | 131 | 14.6 ± 11.5 | 103 ± 1 | | | |
| Jun | 0.4 ± 0.4 | 120 | 0.4 ± 0.2 | 104 ± 8 | 1.0 ± 1.0 | 101 | | | |
| Jul | | | | | 1.2 ± 1.2 | 115 | | | |
| Aug | 0.6 ± 0.6 | 138 | 1.6 ± 1.2 | 138 ± 3 | 0.6 ± 0.6 | 128 | | | |
| Oct | 0.6 ± 0.4 | 118 ± 1 | | | | | | | |
| Nov 1977 | | | 0.2 ± 0.2 | 148 | 0.2 ± 0.2 | 204 | | | |
| Dec | | | | | 0.4 ± 0.4 | 162 | | | |
| Feb 1978 | | | | | 0.2 ± 0.2 | 144 | | | |
| Mar | 0.2 ± 0.2 | 205 | | | | | | | |
| May | | | | | 0.2 ± 0.2 | 210 | | | |
| Aug | | | | | 0.2 ± 0.2 | 84 | | | |
| Nov | | | | | 0.2 ± 0.2 | 62 | | | |
| Dec | 0.2 ± 0.2 | 130 | 0.4 ± 0.2 | 178 ± 5 | 0.2 ± 0.2 | 91 | | | |
| Apr 1979 | | | | | 0.2 ± 0.2 | 163 | | | |
| May | 0.2 ± 0.2 | 212 | | | | | | | |
| Oct | | | | | | | | | |
| Nov | | | | | | | | | |
| Dec | 0.2 ± 0.2 | 158 | | | 0.2 ± 0.2 | 98 | | | |
| Feb 1980 | 0.2 ± 0.2 | 169 | | | 0.4 ± 0.4 | 100 | | | |
| Mar | | | | | | | | | |
| Aug | 0.2 ± 0.2 | 158 | | | 0.2 ± 0.2 | 146 | | | |
| Oct | | | | | | | | | |
| Nov 1977 | 0.6 ± 0.6 | 81 | | | | | | | |
| Apr 1978 | 0.4 ± 0.4 | 74 | | | | | | | |
| May 1979 | 0.3 ± 0.3 | 91 | | | | | | | |
| May 1979 | 0.6 ± 0.4 | 79 ± 5 | 0.2 ± 0.2 | 110 | | | | | |
| Aug | 0.2 ± 0.2 | 118 | | | | | | | |
| Oct | | | | | | | | | |
| Nov | 0.2 ± 0.2 | 86 | | | | | | | |
| Dec | | | | | | | | | |
| Spotted seatrout | | | | | | | | | |
| Nov 1977 | | | | | | | | | |
| Dec | | | | | | | | | |
| Feb 1978 | | | | | | | | | |
| Mar | | | | | | | | | |
| May | | | | | | | | | |
| Aug | | | | | | | | | |
| Nov | | | | | | | | | |
| Dec | | | | | | | | | |
| Apr 1979 | | | | | | | | | |
| May | | | | | | | | | |
| Oct | | | | | | | | | |
| Nov | | | | | | | | | |
| Dec | | | | | | | | | |
| Star drum | | | | | | | | | |
| Nov 1977 | | | | | | | | | |
| Apr 1978 | | | | | | | | | |
| May 1979 | | | | | | | | | |
| Aug | | | | | | | | | |
| Oct | | | | | | | | | |
| Nov | | | | | | | | | |
| Dec | | | | | | | | | |

Table 2. (Cont'd.)

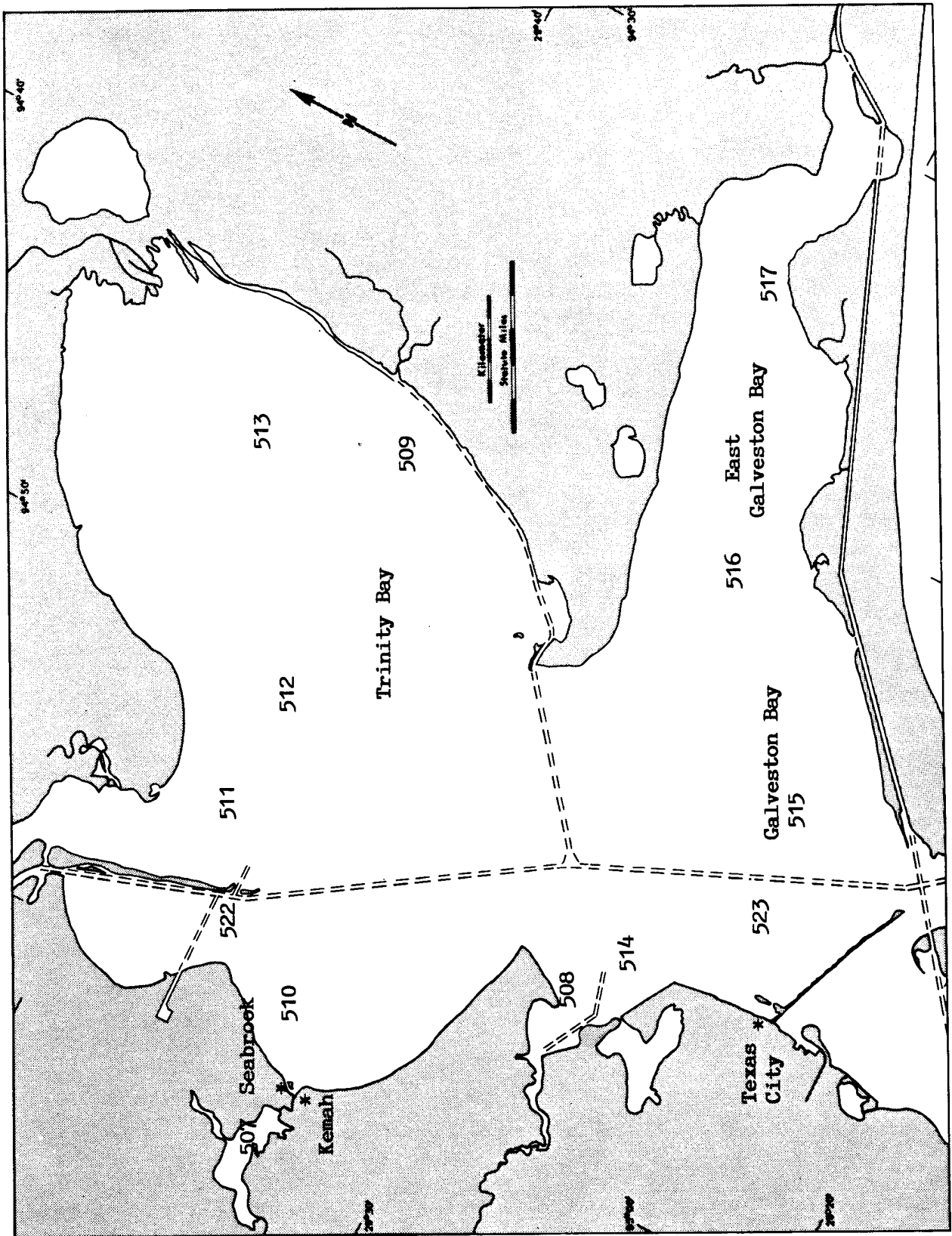
| Species | Month | Galveston | | Matagorda | | San Antonio | |
|------------------------|-----------|-----------|----------|-----------|-----------|-------------|---------|
| | | No./trawl | Length | No./trawl | Length | No./trawl | Length |
| Star drum (Cont'd.) | Apr 1980 | 0.2 ± 0.2 | 81 | | | | |
| | Jun | 0.2 ± 0.2 | 103 | | | | |
| | Aug | 0.2 ± 0.2 | 83 | | | | |
| | Oct | 0.4 ± 0.2 | 74 ± 1 | | | 0.2 ± 0.2 | 91 |
| Striped anchovy | Sep 1980 | | | | | 0.3 ± 0.2 | 61 ± 5 |
| Striped blenny | Jul 1979 | | | | | 0.2 ± 0.2 | 76 |
| Striped burrfish | Aug 1978 | | | 2.0 ± 2.0 | 124 | | |
| | Sep | 0.2 ± 0.2 | 35 | | | | |
| | Mar 1979 | | | 0.2 ± 0.2 | 143 | | |
| | Apr | | | 0.4 ± 0.4 | 156 | | |
| | Jun | | | 0.2 ± 0.2 | 145 | | |
| | | | | | | | |
| Striped mullet | Nov 1977 | | | | | 12.0 ± 9.4 | 137 ± 3 |
| | Dec | | | | | 5.6 ± 3.4 | 130 ± 5 |
| | Feb 1978 | 2.8 ± 2.1 | 230 ± 4 | | | 34.8 ± 33.6 | 196 ± 1 |
| | Mar | 0.2 ± 0.2 | 260 | | | 0.2 ± 0.2 | 125 |
| | Apr | | | | | 4.4 ± 2.9 | 154 ± 2 |
| | May | | | 0.8 ± 0.6 | 159 ± 1 | | |
| | Jun | | | 0.4 ± 0.4 | 158 | | |
| | Jul 1978 | | | | | 6.4 ± 5.7 | 189 ± 2 |
| | Aug | | | | | 4.2 ± 3.0 | 175 ± 6 |
| | Sep | | | | | 0.2 ± 0.2 | 116 |
| | Oct | | | | | 0.5 ± 0.5 | 134 |
| | Nov | | | | | 0.2 ± 0.2 | 130 |
| | Feb 1979 | 1.6 ± 1.6 | 252 | 0.2 ± 0.2 | 191 | 0.4 ± 0.4 | 256 |
| | Mar | 0.6 ± 0.4 | 233 ± 1 | | | 0.2 ± 0.2 | 169 |
| | Apr | 0.4 ± 0.2 | 272 ± 12 | | | 0.4 ± 0.4 | 130 |
| | Jul | 0.4 ± 0.4 | 300 | | | 0.4 ± 0.4 | |
| Aug | | | | | | | |
| Dec | 0.4 ± 0.4 | 218 | | | 2.4 ± 2.4 | 128 | |
| Feb 1980 | 0.2 ± 0.2 | 215 | | | 1.8 ± 1.1 | 128 ± 7 | |
| Mar | | | | | 1.6 ± 1.4 | 146 ± 1 | |
| May | | | | | 3.2 ± 3.2 | 158 | |
| Threadfin shad | Nov 1977 | | | | | 0.8 ± 0.4 | 101 ± 2 |
| | Dec | | | | | 0.2 ± 0.2 | 140 |
| | Feb 1978 | 0.2 ± 0.2 | 76 | | | | |
| | Mar | | | 0.4 ± 0.4 | 88 | | |
| | Nov | 0.6 ± 0.2 | 119 ± 3 | | | | |
| | Dec | 0.2 ± 0.2 | 115 | | | | |
| | Feb 1979 | 0.6 ± 0.2 | 110 ± 1 | | | | |
| | Mar | 0.8 ± 0.8 | 128 | | | | |
| | May | 1.0 ± 1.0 | 159 | | | | |
| | Aug | 1.4 ± 1.4 | 119 | | | 0.2 ± 0.2 | 75 |
| Oct | | | | | 0.4 ± 0.2 | 100 ± 7 | |

Table 2. (Cont'd.)

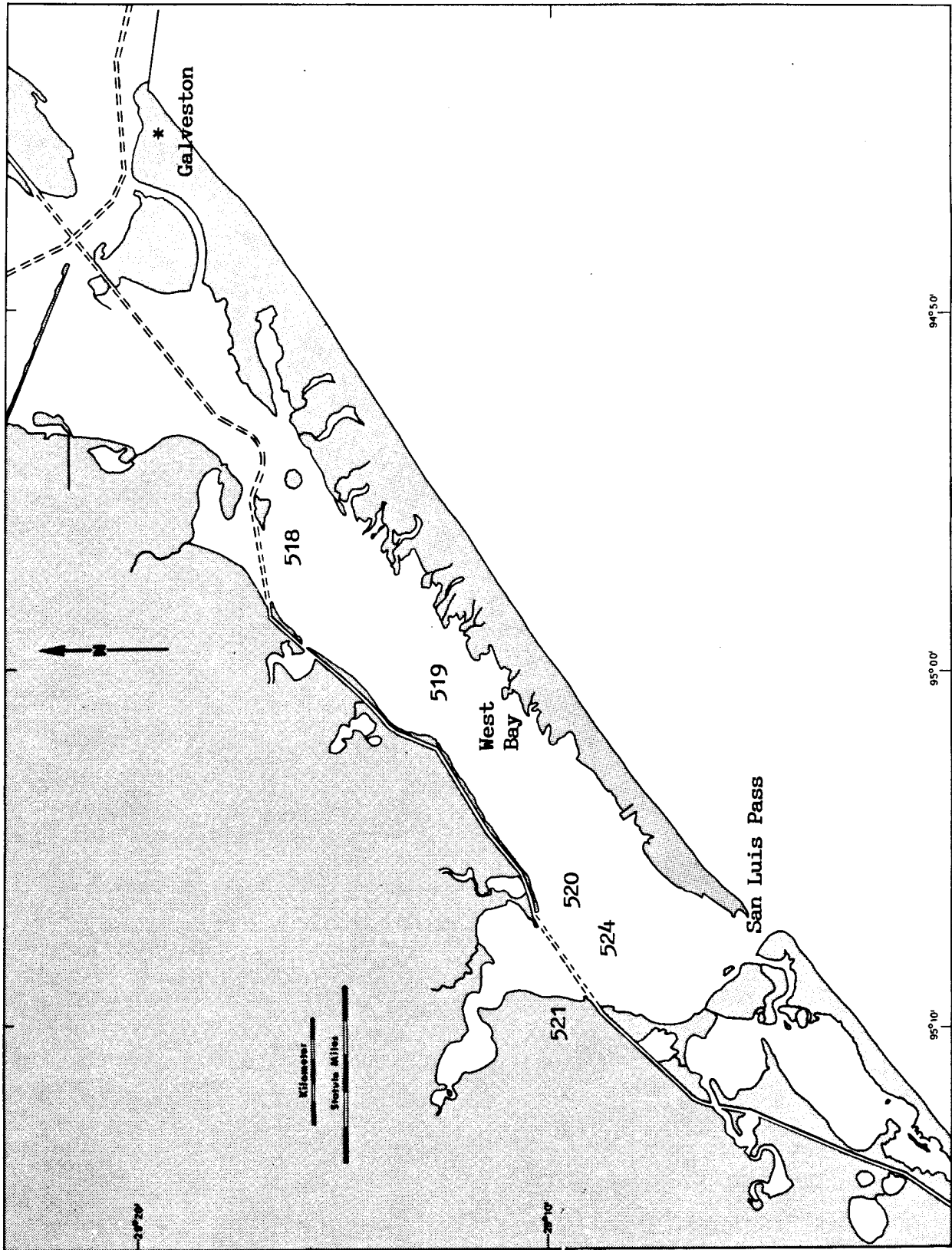
| Species | Month | Galveston | | Matagorda | | San Antonio | |
|-----------------------------|----------|-----------|--------|-----------|--------|-------------|--------|
| | | No./trawl | Length | No./trawl | Length | No./trawl | Length |
| Threadfin shad (Cont'd.) | Jun 1980 | 0.8 ± 0.8 | 173 | | | 0.2 ± 0.2 | 115 |
| | Jul | | | | | | |
| | Oct | 0.6 ± 0.6 | 122 | | | | |
| Tripletail | Jun 1978 | | | 0.2 ± 0.2 | 208 | | |
| Violet goby | Apr 1980 | 0.2 ± 0.2 | 300 | | | | |
| White bass | Aug 1979 | | | | | 0.4 ± 0.4 | 136 |
| Yellowfin mojarra | Dec 1978 | | | | | 0.4 ± 0.4 | 64 |

Figure 1. Galveston Bay system 6.1-m trawl sites (November 1977-October 1980).

- (A) Trinity, upper Galveston and East Bays.
- (B) West Bay



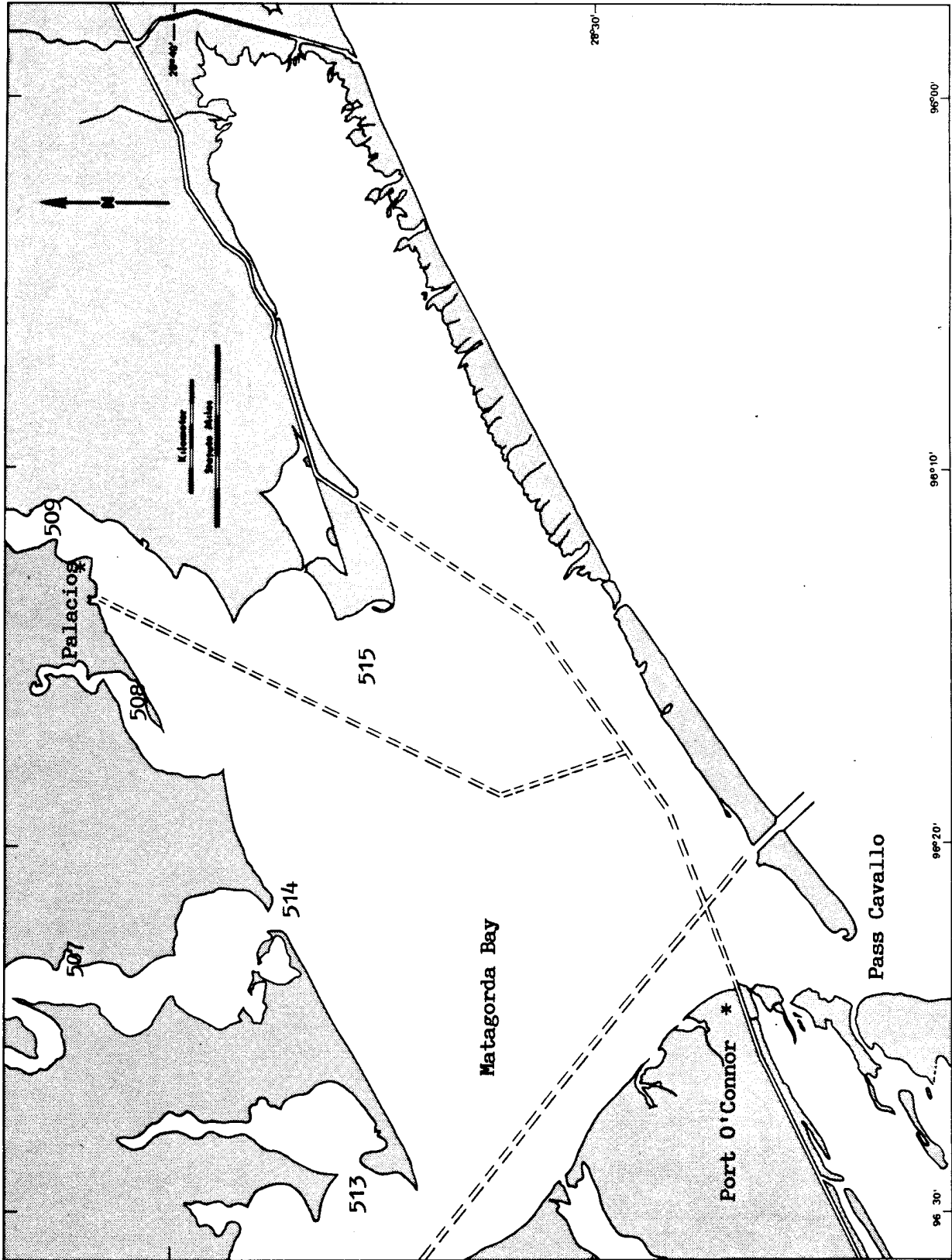
(A)



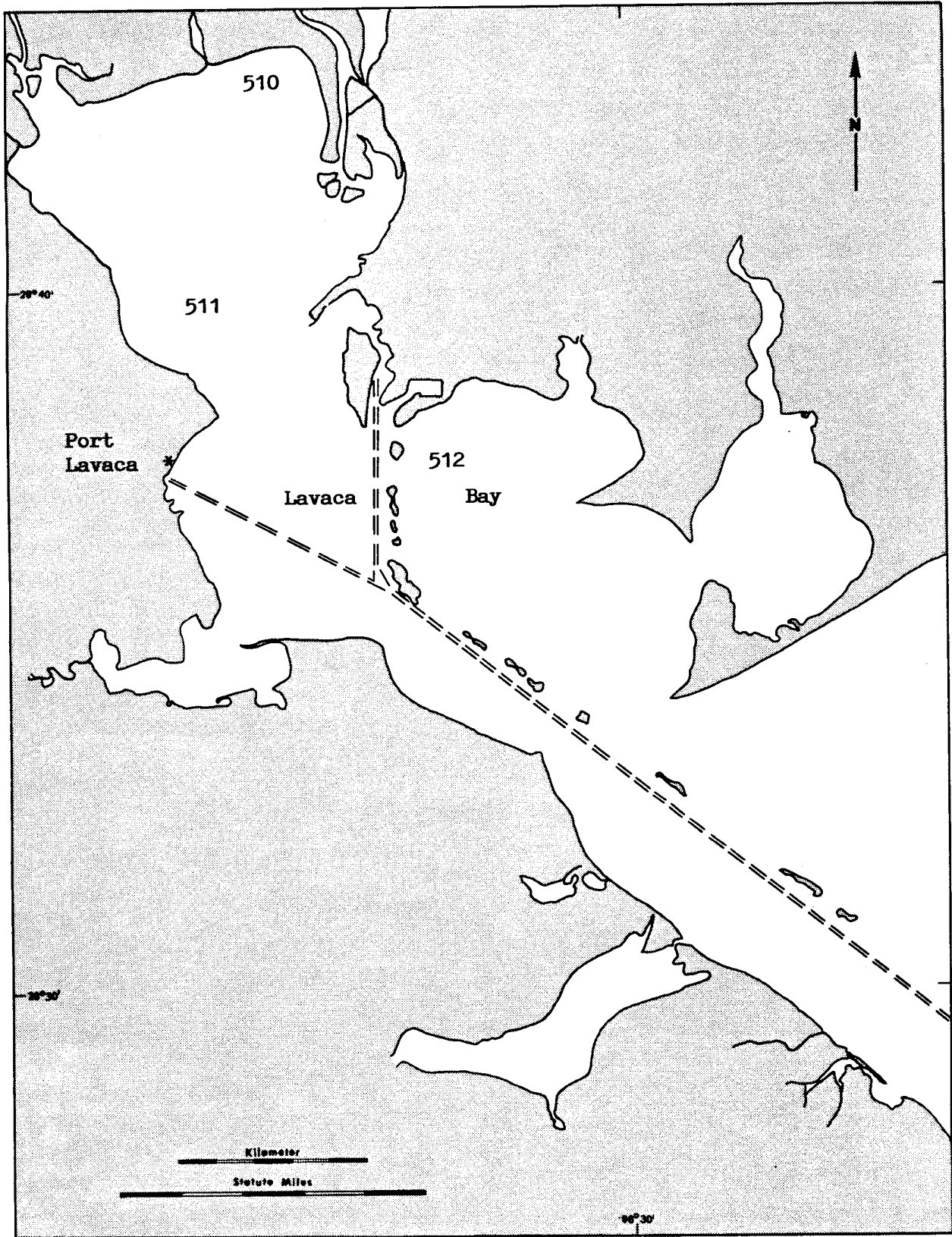
(B)

Figure 2. Matagorda Bay system 6.1-m trawl sites (November 1977-October 1980).

- (A) Matagorda Bay
- (B) Lavaca Bay

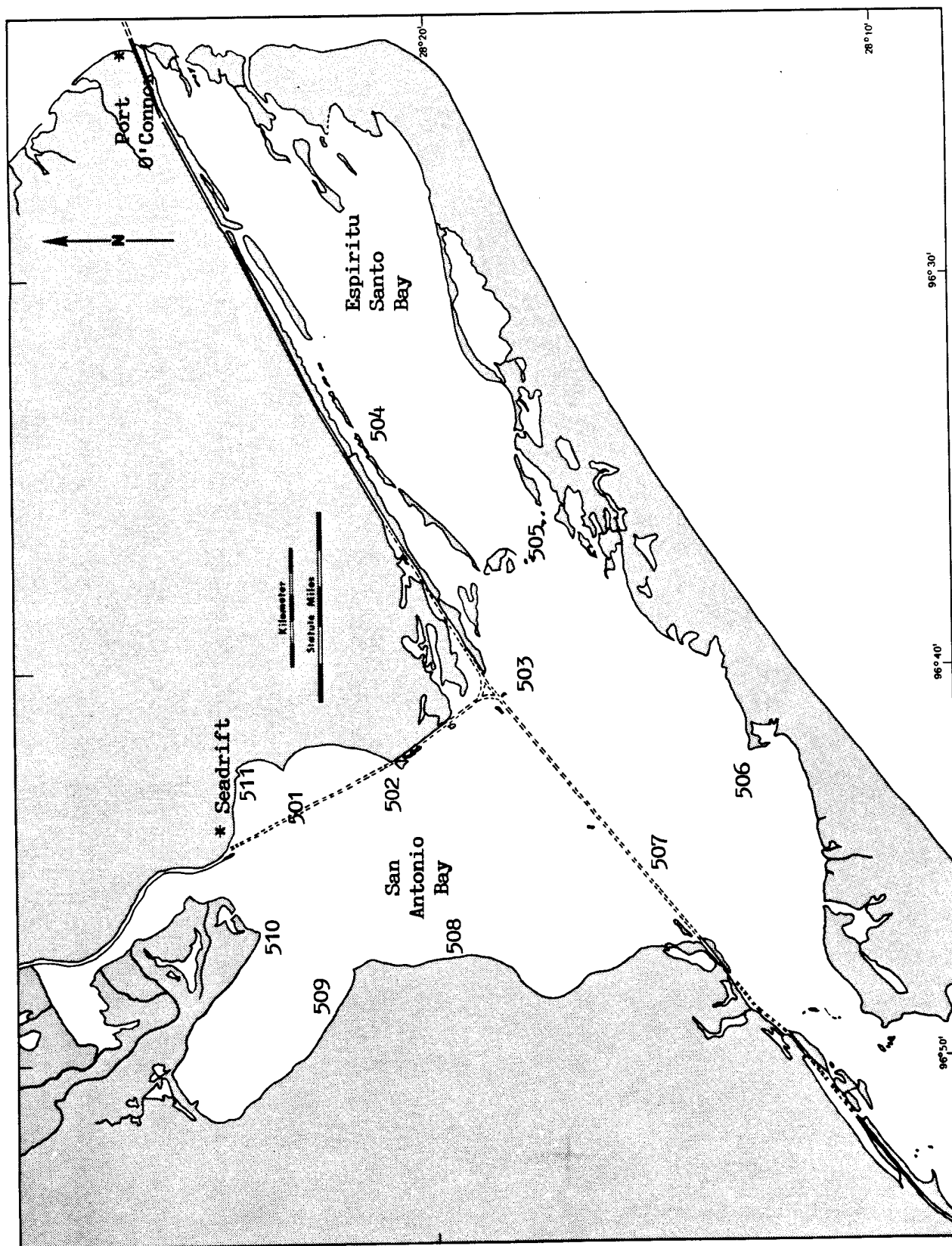


(A)



(B)

Figure 3. San Antonio Bay system 6.1-m trawl sites (November 1977-October 1980).



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