Trends in Relative Abundance and Size of Selected Finfishes and Shellfishes Along the Texas Coast: November 1975 - December 1997

by
Rebecca A. Hensley, Kyle Spiller,
Page Campbell, and Billy Fuls

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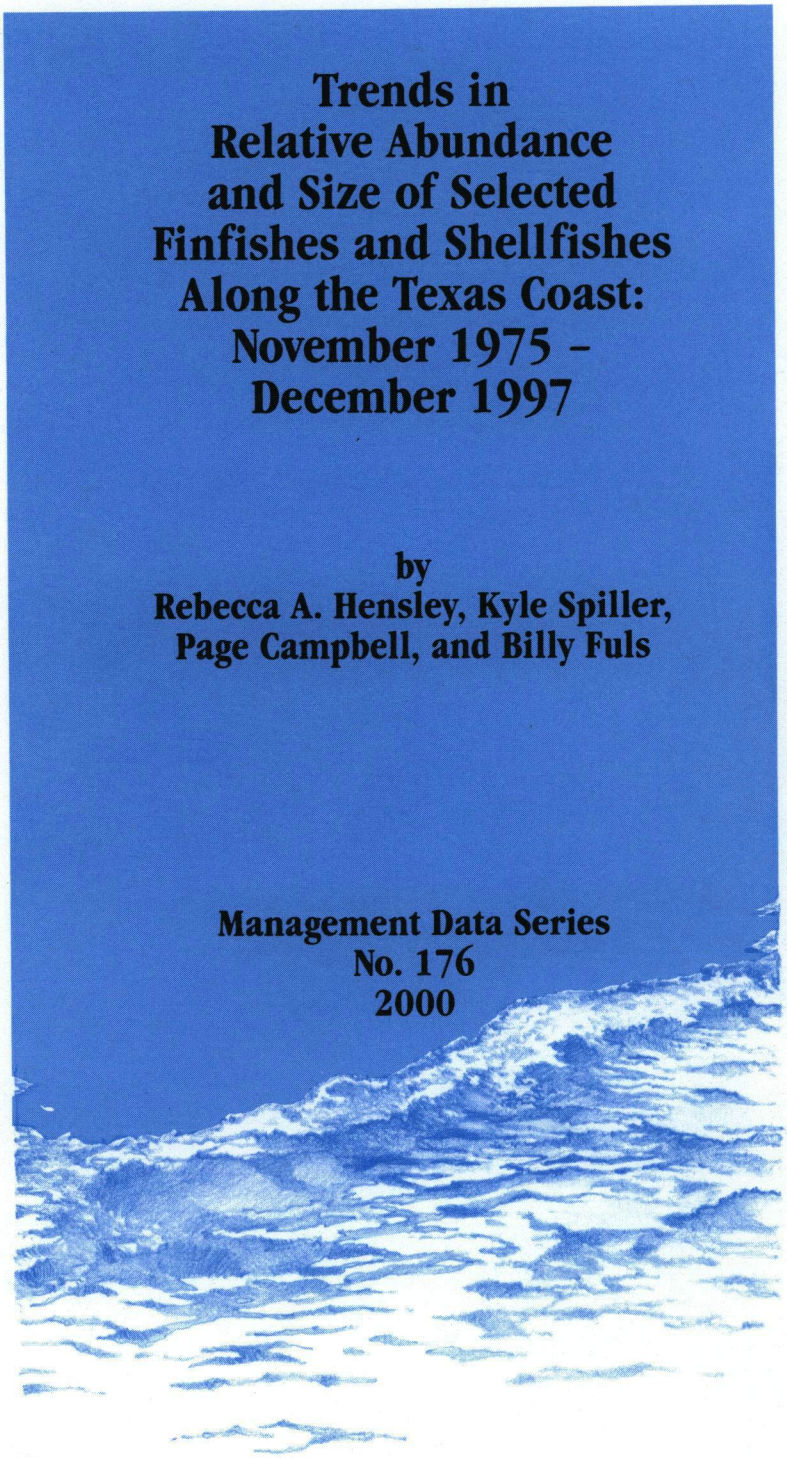

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ABSTRACT

The objective of coastal monitoring projects is to determine the status of marine resources for management and harvest purposes. Trends in relative abundance and size of finfishes and shellfishes have been monitored since 1975 using a standardized fishery independent sampling program in Texas bay systems. Data were collected with bag seines and gill nets along bay shorelines, and with trawls in coastal bays and Texas Territorial Seas. Oyster dredges were used to sample bay oyster reefs.

Data comparisons were made between 1996 and 1997 for coastwide catch rates for all gears. Coastwide spring and fall gill net catch rates for red drum increased with a record high catch rate during the spring of 1997. Spotted seatrout and black drum gill net catch rates increased slightly for both the spring and fall. Coastwide seasonal bay bag seine catch rates increased for Atlantic croaker and blue crab and decreased for red drum, spotted seatrout, black drum, brown shrimp and white shrimp. Coastwide annual bay trawl catch rates increased for blue crab and decreased for Atlantic croaker, brown shrimp, pink shrimp and white shrimp. Coastwide annual Gulf of Mexico trawl catch rates increased for Atlantic croaker and white shrimp and decreased for brown shrimp and blue crab. Coastwide annual catch rates for Eastern oyster spat, small oysters and market oysters increased to record highs in 1997. Data collected during 1997 and during previous years were used to make resource and harvest management decisions.

INTRODUCTION

Fishery independent monitoring data are used to determine relative abundance and size of finfishes and shellfishes in Texas coastal waters to regulate and allocate harvest in Texas jurisdictional waters. To collect these data, Texas Parks and Wildlife (TPW) has used various gears systematically in Texas estuaries and the Gulf of Mexico since 1975 (Appendix A, Tables A.1-5). TPW initiated a standardized fishery independent monitoring program in 1975 using gill nets, in 1977 using bag seines, in 1982 using trawls in bays, in 1984 using oyster dredges on bay oyster reefs and in 1985 using trawls in the Gulf to monitor and assess relative trends in abundance and size of finfishes and shellfishes. Gill nets set during spring (April-June) and fall (September-November), and monthly bag seine, trawl and oyster dredge samples provide a statistically consistent and cost efficient method for obtaining population trend information on juvenile, sub-adult, and adult finfish and shellfish.

The objectives of the present study were to:

1. monitor and determine trends in species composition, size and relative abundance of selected finfishes and shellfishes in Texas coastal bay systems and in the Gulf of Mexico off Texas.

2. publish the results in a report which will assist resource managers to effectively manage finfishes and shellfishes.

Differences in the information in this report compared to previous reports are due to updating the data base. The present report should be considered the most accurate to date.

MATERIALS AND METHODS

Bag seines, trawls and monofilament gill nets (Appendix A) were used in each of the 9 Texas bay systems: Sabine Lake, Galveston, East Matagorda, Matagorda, San Antonio, Aransas, Corpus Christi, upper Laguna Madre and lower Laguna Madre. Trawls, identical to those used in the bays, were used in five Gulf areas of the Texas Territorial Sea (TTS) $\leq$16.7 km from shore: 24.1 km either side of each of the Sabine Pass jetties (Sabine), Galveston jetties (Galveston), Matagorda jetties (Port O'Connor), Aransas Pass jetties (Port Aransas), and 48.2 km north from the Texas-Mexico border (Port Isabel)(Figure 1). Oyster dredges (Appendix A) were used in the Galveston, Matagorda, San Antonio and Aransas bay systems.

Gill net and bag seines sites were randomly selected from grids (1 minute latitude by 1 minute longitude) that contained ≥15.2 m of shoreline. Each selected grid was subdivided into 144 5-second "gridlets". All "gridlets" that contained ≥15.2 m of shoreline were used to randomly choose sample sites.

Gill net sets were conducted overnight during each spring and fall season (Appendix A). The spring season began with the 2nd full week in April and extended for 10 full weeks. The fall season began with the 2nd full week in September and extended for 10 full weeks. Between three and five nets were set each week in each bay, except in East Matagorda Bay where only two overnight sets were made during each week. On no more than six nights during each season could three nets be set in a bay system. Each sampling week extended from 1 h before sunset on Sunday through 4 h after sunrise the following Sunday. Gill nets were set perpendicular to shore with the smallest mesh shoreward. Nets were set within 1 h before sunset and were retrieved within 4 h after the following sunrise. Total fishing time was recorded (nearest 0.1 h).

One half of the monthly bag seine samples were collected during each of two periods (1-15 and 16-31) of the month (Appendix A). Bag seines were pulled parallel to the shoreline for 15.2 m. The surface area sampled (nearest 0.01 ha) was estimated using distance pulled and length of extension of the bag seine. No grid was sampled more than once in a month.

Trawls were used in bays which were stratified into two zones: Zone 1 (upper bay nearest mouths of rivers) and Zone 2 (lower bay farthest from rivers). Trawl sites in Zones 1 and 2 were randomly selected from bay grids (1 minute latitude by 1 minute longitude) that contained water ≥1 m deep in at least 1/3 of the grid and which were known to be free of obstructions. One half of the monthly trawl samples in each zone in each bay system were collected during each of two periods (1-15 and 16-31) of the month (Appendix A). In East Matagorda Bay all water was designated as Zone 1; in each of Sabine Lake, upper and lower Laguna Madre all water was designated as Zone 2. In Zones 1 and 2, trawls were towed in a circular motion near the center of each grid. All trawl tows within bays were 10 minutes in duration. No grid was duplicated in a month.

Gulf trawl sites in each area were randomly selected from grids (1 minute latitude by 1 minute longitude) in the TTS (Figure 1) that contained water ≥1.8 m deep in at least 1/3 of the grid and which were known to be free of obstructions. One half of the samples in each area were collected during each of two periods (1-15 and 16-31) of the month (Appendix A). Trawls were towed linearly, parallel to the fathom curve; direction of tow (north or south) was randomly

chosen for the initial tow and alternated on subsequent tows. All tows were 10 minutes in duration. No grid was duplicated in a month.

Trawls were used during daylight in the Gulf of Mexico off Sabine Pass, Galveston, Port O'Connor, Port Aransas, and Port Isabel during June and November 1996 in conjunction with the Southeast Area Monitoring and Assessment Program (SEAMAP). Detailed descriptions of the gear, sample stations, and sample procedures are reported by Stuntz et al. (1985).

In each major oyster producing bay (Galveston Bay, Matagorda Bay, San Antonio Bay and Aransas Bay) oyster reef areas were mapped for defined reefs. Criteria for defined reefs were Eastern oysters reefs that had $\geq$0.2 m higher than adjacent bottom for a continuous distance of $\geq$91.4 m long and 0.4 m wide. Oyster dredge sites were randomly selected from bay grids containing defined oyster reefs. Each selected grid was divided into 144 5-second "gridlets". All gridlets that contained defined oyster reefs were used to randomly choose sample sites. One half of the oyster samples were collected during each of the two periods (1-15 and 16-31) of the month (Appendix A). Dredges were pulled linearly for 30 seconds. Stations were not duplicated within a month.

Sample catch rates for each species, or category of species, were calculated by dividing total number captured by either total hours fished (gill net, trawl, and oyster dredge) or ha sampled (bag seine). Catch rates for each bay system were then calculated by month, year or season. Bay specific catch rates were weighted for coastwide estimates (Table A.7). Fish greater than 204 mm long were eliminated from bag seine catch rate calculations based on the findings of McEachron and Green (1986). Live Eastern oysters were grouped into spat (5-25 mm), small oysters (26-75 mm), and market oysters ($\geq$76 mm).

Lengths [total (TL) or standard (SL)] of organisms caught were recorded. In gill nets, up to 19 individuals of each species were measured, within each mesh size, on each sampling day. In trawls, up to 50 shrimp (length from tip of rostrum to tip of telson) of each species (brown, white, pink), 35 blue crabs (carapace width between spine tips) and 19 individuals of all other species were measured in each sample. For all other gears, up to 19 specimens were measured for each species in each sample collected.

Mean TL of individual species in gill nets were calculated for each of the four mesh sizes. Mean lengths for the combined meshes were calculated by weighting individual species mean lengths in each mesh by the number of each species caught in each mesh. For all other gears, mean lengths of individual species were calculated from

individuals measured in each sample. Coastwide total mean lengths for each species in all gears were weighted according to the catch rate in each bay system, and by bay specific and gear specific weighting factors used for coastwide catch rates.

Surface salinity (ppt), water temperature (°C) and turbidity [Nephelometric Units (NTU)] were measured at the set and pickup for each gill net and prior to each bag seine sample (Appendix B, Tables B1-6). Bottom salinity, water temperature, and turbidity were measured prior to each trawl and oyster dredge sample (Appendix B, Tables B7-15).

RESULTS

Gill Net

Coastwide spring red drum (Sciaenops ocellatus) catch rate decreased in 1997 (1.2/h) (Table 1; Figure 2). This was the third highest catch rate on record. The lowest catch rates were during 1977-79 (0.3/h). Mean length decreased slightly to 499 mm TL in 1997 (Table 1; Figure 4).

Coastwide fall red drum catch rate increased in 1997 (1.1/h) (Table 2; Figure 3). This was the highest catch rate on record. The lowest catch rates (0.5/h) occurred in 1982 and 1983. Mean length increased to 476 mm TL in 1997 (Table 2; Figure 5).

Coastwide spring spotted seatrout (Cynoscion nebulosus) catch rate increased in 1997 (1.0/h) (Table 1; Figure 2). This was the highest spring coastwide catch rate for spotted seatrout since 1976 (1.1/h). The lowest catch rates occurred in 1979 and 1984 (0.3/h). Mean length remained the same at 446 mm TL in 1997 (Table 1; Figure 4).

Coastwide fall spotted seatrout catch rate remained the same in 1997 (0.5/h) (Table 2; Figure 3). The highest fall coastwide spotted seatrout catch rate (0.7/h) occurred in 1976, with lowest catch rate in 1979 (0.2/h). Mean length increased to 436 mm TL in 1997 (Table 2; Figure 5).

Coastwide spring black drum (Pogonias cromis) catch rate decreased in 1997 (1.3/h) (Table 1; Figure 2). The highest spring coastwide black drum catch rate (1.5/h) occurred in 1994, with the lowest in 1978 (0.3/h). Mean length decreased to 423 mm TL in 1997 (Table 1; Figure 4).

Coastwide fall black drum catch rate decreased in 1997 (1.1/h) (Table 2; Figure 3). The highest fall coastwide black drum catch rate occurred in 1993 (1.6/h), with lowest in 1979 and 1984 (0.3/h). Mean length decreased to 419 mm TL in 1997 (Table 2; Figure 5).

Spring and fall coastwide southern flounder (Paralichthys lethostigma) and sheepshead (Archosargus probatocephalus) catch rates varied little over the past 10 years (<0.1-0.1/h), but were generally down from pre-1983 years (0.1-0.3/h)(Tables 1 and 2).

Coastwide spring Atlantic croaker (Micropogonias undulatus) catch rates have remained low at ≤0.1/h since 1978 (Table 1, Figure 2). The fall catch in 1997 equaled that in 1996 (0.3/h) (Table 2; Figure 3). The highest fall catch rate on record (0.5/h) was in 1993; lowest catch rate occurred in 1975 (0.1/h).

Coastwide 1997 catch rates for total finfish decreased in the spring (6.9/h) and fall (5.8/h) (Tables 1 and 2).

Spring and fall coastwide catch rates of blue crab (Callinectes sapidus) have remained at ≤0.1/h over the past 10-11 years, but are generally down from pre-1987 years (0.1-0.2/h)(Tables 1 and 2). Mean length increased in 1997 to 149 mm in spring and decreased to 149 mm in fall.

Bay Bag Seine

Annual (calendar year) bag seine catches varied by species and bay (Table 3). Seasonal trends in catch rates and mean lengths are presented for selected species:

Coastwide red drum seasonal (November-March)catch rates increased in 1997; they were highest during November 1990-March 1991 and lowest during November 1989-March 1990 (Figure 6). Coastwide mean lengths fluctuated between 48 and 58 mm TL (Figure 7).

Coastwide spotted seatrout seasonal (July-November) catch rates increased in 1997; they were highest 1991 and lowest during 1984-86 (Figure 6). Coastwide seasonal mean lengths fluctuated between 44 and 56 mm TL (Figure 7).

Coastwide black drum seasonal (June-July) catch rates increased in 1997 to the highest level since 1979 (Figure 6). Coastwide seasonal mean lengths fluctuated between 54 and 93 mm TL (Figure 7).

Coastwide Atlantic croaker seasonal catch rates (February-March) decreased slightly in 1997; they were highest in 1982 and lowest in 1989 (Figure 6). Coastwide seasonal mean lengths fluctuated between 49 and 57 mm TL (Figure 7).

Coastwide brown shrimp (Penaeus aztecus) seasonal (April-July) catch rates increased in 1997 to the highest level since 1987; they were lowest in 1979 (Figure 8). Coastwide seasonal mean lengths fluctuated between 56 and 63 mm TL (Figure 9).

Coastwide white shrimp (P. setiferus) seasonal (July-November) catch rates decreased in 1997; they were highest in 1982 and lowest in 1985 (Figure 8). Coastwide seasonal mean lengths fluctuated between 52 and 59 mm TL (Figure 9).

Coastwide blue crab seasonal (March-June) catch rates increased in 1997; they were highest in 1985 and lowest in 1989 (Figure 8). Coastwide seasonal mean widths fluctuated between 23 and 28 mm TL (Figure 9).

Bay Trawl

Annual coastwide bay trawl catch rates for total finfish increased in 1997 (262/h); ranging from 134/h in 1984 to 318/h in 1991 (Table 4). Annual catch rates of other major species caught in bay trawls varied by species and bay (Table 4).

Coastwide brown shrimp catch rates were unchanged in 1997 (23/h) (Table 4; Figure 10). Catch rates ranged from 21/h in 1983 to 49/h in 1989. Coastwide mean length decreased in 1997 to 86 mm TL, and in previous years ranged from 81-97 mm (Table 4; Figure 11).

Coastwide white shrimp catch rates increased in 1997 (32/h); they have ranged from 14/h in 1996 and 1989 to 46/h in 1982 (Table 4; Figure 10). Mean coastwide length decreased in 1997 to 95 mm TL, and in previous years ranged from 84-101 mm (Table 4; Figure 11).

Coastwide pink shrimp (P. duorarum) catch rates increased in 1997 (4/h) (Table 4). They were highest in 1991 and 1995 (5/h) and lowest in 1982, 1984 and 1993 (1/h).

Coastwide blue crab bay trawl catch rates increased slightly in 1997 (14/h) (Table 4; Figure 10). Catch rates range from 10/h in 1995 to 24/h in 1992 and 1994. Coastwide mean width decreased to 67 mm TL in 1997 (Table 4; Figure 11).

Coastwide Atlantic croaker catch rates increased in 1997 (85/h) (Table 4; Figure 10). They ranged from 27/h in 1985 to 112/h in 1992. Coastwide mean length decreased in 1997 to 110 mm TL (Table 4; Figure 11).

Gulf Trawl

Annual coastwide Gulf of Mexico trawl catch rates for total finfish increased in 1997 (401/h), and have ranged from 174/h in 1985 to 406/h in 1992 (Table 5).

Coastwide brown shrimp catch rates increased in 1997 (10/h) (Table 5; Figure 12). They ranged from 4/h in 1996 to 59/h in 1989. Coastwide mean length was unchanged in 1997 (99 mm TL) and has ranged from 97 (1992) to 109 (1985) mm TL (Table 5; Figure 13).

Coastwide annual white shrimp catch rates were unchanged in 1997 (20/h) (Table 5; Figure 12). They ranged from 10/h in 1990 and 1994 to 24/h in 1985 and 1986. Coastwide mean length increased slightly in 1997 (106 mm TL) (Table 5; Figure 13). They ranged from 105 mm TL in 1986, 1992 and 1996 to 117 mm TL in 1995.

Coastwide blue crab catch rates increased in 1997 (4/h) (Table 5; Figure 12). They ranged from <1/h in 1985 to 6/h in 1991. Coastwide mean width increased to 71 mm (carapace width) in 1997 from a record low of 67 mm in 1996 (Table 5; Figure 13).

Coastwide Atlantic croaker catch rates increased in 1997 to 104/h (Table 5; Figure 12). They ranged from 23/h in 1985 to 162/h in 1993 . Coastwide mean length increased in 1997 to 126 mm TL, but in previous years had decreased from 142 mm in 1985 to 113 mm in 1993 (Table 5; Figure 13).

Coastwide annual pink shrimp catch rates increased to 2/h in 1997; they ranged from 1-4/h in past years (Table 5). Coastwide mean length decreased in 1997 (111 mm) and was variable among years ranging from 104 mm in 1992 to 116 mm in 1985.

Annual catch rates of other major species caught in Gulf of Mexico trawls varied by species and Gulf area (Table 5).

Oyster Dredge

Coastwide catch rates of Eastern oyster (Crassostrea virginica) spat decreased in 1997 (830/h) (Table 6; Figure 14). They

previously ranged from 491/h in 1984 to 4,740/h in 1996.

Coastwide catch rates of small Eastern oysters increased to a record high in 1997 (3,468/h) (Table 6; Figure 14). The previous high occurred in 1996 at 2,714/h. Coastwide mean length increased in 1997 to 51 mm and ranged from 46-54 mm TL (Table 6; Figure 15).

Coastwide catch rates of market Eastern oysters decreased in 1997 (729/h) (Table 6; Figure 14). The record low occurred in 1990 at 215/h. Coastwide mean length increased in 1997 (89 mm TL) (Table 6; Figure 15).

Hydrologic Data

Hydrologic data varied among years, among bay systems and among gulf areas (Appendix B). Coastwide annual salinity decreased during 1997 in coastal bays and in Gulf of Mexico waters (Appendix B; Tables B.1, 4, 7, 10, and 16). Bay salinities were generally higher in upper Laguna Madre than in any other bay. Gulf salinities were highest off Port Isabel and Port Aransas. Water temperatures followed seasonal trends. Coastwide annual bay and gulf bottom water temperatures were similar to 1995 values (Appendix B; Tables B.2, 5, 8, 11, 14 and 17).

SEAMAP

Spring (March, April)

SEAMAP longlines in the spring of 1997 showed above average numbers of adult red drum in the nearshore waters. TPW had concerns that the mortality of adult red drum due to the red tide in the fall of 1996 may have affected the nearshore red drum population. Average catch rate (number/hour) from 1992-1997 was 2.55. In 1997, red drum catch rate was 3.0.

Summer (June)

Catch rates of brown shrimp by depth zone ranged from 302/h in 19-37 m to 21/h in 38-55 m during 1997 (Appendix C, Table C.1). Historically, brown shrimp are predominately caught in water 19-37 m deep.

White shrimp were caught primarily in water ≤18 m deep during all years (Appendix C, Table C.1). At these depths, catch rates have ranged from 4/h-41/h in all years.

Pink shrimp were captured in waters ≤55 m deep (0-195/h) during all years (Appendix C, Table C.1). They were caught predominately in waters ≤37 m deep.

Blue crab are caught primarily in the 0-18 m zone (Appendix C, Table C.1). Catch rates at these depths ranged from 3-20/h in all years.

Fall (November)

Brown shrimp were caught in all depth zones, with highest catch rates at water depths generally >18 m (Appendix C, Table C.2). White shrimp, pink shrimp and blue crab were predominately caught in waters ≤37 m deep.

OVERVIEW

TPW is mandated by the Texas Legislature and the TPW Commission to annually investigate population trends, habitat variability, socio-economics, commercial and recreational fishing impacts and any other factors or conditions which may result in increases or decreases of finfishes and shellfishes in Texas waters. Long-term trend data based on independent standardized monitoring programs are necessary to assess changes in relative abundance of these populations. Shrimp data were used to recommend dates for the annual closure of Texas gulf waters to shrimping. Oyster data were used to establish the oyster transplant season in Galveston Bay. Finfish data were used to recommend changes in fishing regulations. These data were also used to develop management plans for shrimp, oysters and blue crabs as mandated by the Texas Legislature. Additionally, these data are used routinely by "outside" scientists in the private and public sector, especially the Gulf of Mexico Fisheries Management Council and Gulf States Marine Fisheries Commission. TPW database was used extensively by both the Galveston Bay and Corpus Christi Bay National Estuary Programs to determine status and trends of populations. Data in the present report are used to determine long-term trends in abundance and stability of finfishes and shellfish populations in Texas coastal waters and to implement management regulations.

Effective management of marine species populations requires knowledge of the relationship between spawning and subsequent adult

abundance (Cushing 1970, Gulland 1977). Since it has been possible to detect changes in annual abundances with bag seines and gill nets, it may be possible to determine stock-recruitment relationships utilizing these gears.

To determine effects of natural or man induced events in Texas coastal ecosystems, standardized monitoring programs used by TPW should be maintained. The following "meta events" affecting coastal waters were documented in 1997. Other unreported events may have occurred.

1. On 18 September 1997, the third major red tide bloom (Gymnodinium breve) in 11 years began offshore near the middle Texas coast. The bloom began near Pass Cavallo and Sargent's Beach and moved southward into Mexico and entered lower Laguna Madre. The duration of the offshore bloom (off Padre Island) was 18 September through 23 November 1997. From 21 November through 10 December, a red tide bloom occurred inside bay waters near Corpus Christi and Port Aransas. Areas of high cell counts lasted until 19 January 1998. A minimum estimate of mortality was 21.8 million aquatic organisms (16.5 million occurring in the initial offshore bloom and 5.3 million in the second bloom in the bay). The species most affected (in the millions) were anchovies, Anchoa species (5.5); gulf menhaden, Brevoortia patronus (4.6); Atlantic bumper, Chloroscombrus chrysurus (3.9); beach ghost shrimp, Callichirus islagrande (1.8); scaled sardine, Harengula jaguana (1.7) and striped mullet, Mugil cephalus (1.2). Mortality of recreational and commercial species was less than 1%.

2. By early summer, the Gulf of Mexico's hypoxic zone off Louisiana reached a record size (about 7,000 sq. miles). Low dissolved oxygen readings (1.0-2.3 ppm) were recorded at all gulf trawl sample sites 5.5 mi. offshore Sabine Pass jetties. Numerous dead fish (spotted seatrout, menhaden, eels, others) and crabs were reported on Dunn's Beach (just west of Holly Beach, Louisiana) and on Bolivar Peninsula's beaches. In mid-June, nearshore gulf currents switched from an east to west direction to a westerly direction, attributed to an El Nino weather pattern. This change, returned normal dissolved oxygen levels to the Sabine Bank area, but temporally pushed low dissolved oxygen level waters into Sabine Lake.

3. Brown tide, from Aureoumbra lagunensis, persisted in the Laguna Madre (upper and lower) and the Baffin Bay complex for the eighth consecutive year. No open bay mortalities were observed with these blooms. Following the heavy rainfalls

during the fall (25+ inches in 4 days in Kingsville), the bloom appeared to disappear. Researchers at UT Port Aransas reported brown tide cell counts of 50/ml (previous low cell counts were 500,000/ml). They also reported large numbers of dwarf surf clam larvae (the clam is a major grazer of brown tide algae) in Baffin Bay.

4. About 20-30 Pacific white shrimp (Penaeus vannamei) from a local Palacios shrimp house, caught in Tres Palacios and Matagorda bays by local bay shrimpers, were given to Coastal Fisheries staff. The presence of P. vannamei in the wild was confirmed with their presence in three out of four TPW 30-minute trawls.

5. A freeze affecting the Texas coast caused many fish to seek thermal refuge from the low water temperatures. The large numbers of spotted seatrout landed by recreational fishermen from these deeper water refuges (especially in Corpus Christi Bay, lower Laguna Madre and Offatts Bayou near Galveston) prompted comments by concerned sportsmen for TPW to create areas closed to fishing during freezes.

6. The freeze along with record recreational harvest of large spotted seatrout may explain the decline (from 7% to about 3%) in the percentage of spotted seatrout >700 mm caught in upper Laguna Madre Spring 1997 gill nets. Overall spotted seatrout gill net catch rates were unchanged from previous year.

7. The drought of 1996 continued through the summer of 1997, in parts of Texas. Salinities for Aransas and Copano bays were high (ppt in the 30's) while the salinities rose over the mid-40's in parts of Baffin Bay complex. Rising salinities seemed to have little adverse effect on fisheries resources. Gill net catch rates of red drum, spotted seatrout and black drum were generally higher than long-term averages. Recruitment of black drum and spotted seatrout were particularly good.

8. High tides coupled with severe rainfall associated with Hurricane Pauline may have affected Texas marine resources. Strong rains fell in the Coastal Bend. Rains caused major flooding in area towns and cities. Large amount of fresh water inflow into area bays caused flooding and rendered many boat ramps temporarily unusable. Extensive damage occurred at some piers and minor damage occurred at ramps. Some areas around Baffin Bay complex reported 25 inches of rain in four days. The resulting runoff lowered salinities from the mid-

40's to the mid-teens in Baffin Bay and lower teens in the upper Laguna Madre. Salinities remained in the mid-teens to low 20's through December. By November, salinities in Aransas Bay ranged from 0.4 to 13 ppt and may have affected the white shrimp catch rates. Many boat ramps and piers were unusable due to the flooding.

9. Record rainfall produced low salinities throughout the San Antonio Bay system for much of the year. Victoria received over 70 inches of rainfall. Bait stands in the Port O'Conner area had a very difficult time keeping shrimp and croaker alive due to the low salinities.

10. Heavy rainfall in March, in lower Laguna Madre, moderated the bay salinities and decreased salinities in the Arroyo Colorado to 0-1 ppt. High catch rates of brown shrimp occurred in the two months following this rain.

11. Lower water temperatures and lower salinities may have contributed to higher catches and protracted seasons of many species. Aransas Bay had high bag seine catch rates for brown and white shrimp 997/ha and 1,430/ha, respectively. Young-of-Year spotted seatrout catch rate (1 98/ha) was also high.

12. A coastwide mercury alert occurred in July. The Texas Department of Health issued a consumption advisory for king mackerel due to elevated levels of mercury in tissue samples. The advisory recommends no consumption of king mackerel larger than 43 inches; for fish 37-43 inches no more than one 8-oz meal a week for adults and no more than one 8-oz meal a month for children and females of childbearing age.

13. Kill Investigations:

Aransas Bay: an estimated 1,000 hardhead catfish were reported killed in Aransas and Copano Bay.

Galveston Bay (West Bay): an estimated 1,000 hardhead catfish and 20 gafftopsail catfish were observed drifting east down West Bay toward the causeway.

14. Low DO's:

Sabine Lake: an estimated 100,000 Gulf menhaden observed dead in canals within housing areas of Pleasure Island's marina.

Galveston Bay (West Bay): an estimated 100,000 Gulf menhaden were observed in a dead end canal in Bayou Vista subdivision.

Galveston Bay (Burnet Bay): approximately 150,000-200,000 dead menhaden were observed in a dead end canal in Burnet Bay.

Nueces Bay: an estimated 22,000 unidentified dead fish were reported in Sunset Lake.

Upper Laguna Madre: an estimated 1,000 unidentified dead fish were observed in a dead end canal in Tropic Isles subdivision.

15. Seismic activity for oil/gas exploration continued to occur in several bay systems. Concerns were raised by the public about the increasing frequency of this activity in our bays.

September: Western Geophysical utilized airguns to conduct a 3-D seismic imaging study. Subsurface geologic data were collected from throughout Sabine Lake.

Winter & Fall: 3-D seismic work was going on in Espiritu Santo Bay during late Winter and Spring and in San Antonio Bay in late Summer and early Fall. Fairfield Industries was conducting the shoot for Petro Guard.

Summer: Seismic activity and oil exploration were conducted in Nueces Bay and Corpus Christi Bay.

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TABLE 1. Mean catch rates (No./h) and mean total lengths (mm) of selected fishes and blue crab caught with gill nets (all meshes combined) by bay system during spring 1976-97. Blank indicates no measurement taken; ND = no data.

Species	Sabine Lake		Galveston		East Matagorda		Matagorda		San Antonio		Aransas		Corpus Christi		Upper Laguna Madre		Lower Laguna Madre		Coastwide	
Year	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	ND		0.1	310	ND		1.0	429	1.0	410	1.0	451	0.6	412	0.1	509	1.2	458	0.7	435
1977	ND		0.3	450	0.2	418	0.1	467	0.3	380	0.4	409	0.4	401	0.1	438	0.5	442	0.3	426
1978	ND		0.1	394	0.4	429	0.5	485	0.2	400	0.2	444	0.3	461	0.2	495	0.5	462	0.3	460
1979	ND		0.2	480	0.1	466	0.2	414	0.2	421	0.4	423	0.3	479	0.2	477	0.3	452	0.3	448
1980	ND		0.9	449	0.4	451	1.1	387	0.7	400	0.4	373	1.0	430	0.8	415	0.6	438	0.8	418
1981	ND		0.3	431	0.2	465	0.2	408	0.6	396	0.4	399	0.3	424	0.3	412	1.0	438	0.4	420
1982	ND		0.9	474	0.4	436	0.5	425	0.4	408	0.4	430	0.5	469	0.3	496	1.0	497	0.6	464
1983	ND		0.9	474	1.0	475	0.6	411	0.7	402	0.5	385	0.4	427	0.2	479	0.8	479	0.6	444
1984	ND		0.9	482	0.7	446	0.1	430	0.2	513	0.3	419	0.8	457	0.3	436	0.7	514	0.5	473
1985	ND		0.6	538	0.5	514	0.2	457	0.2	465	0.4	463	0.6	457	0.3	505	0.6	508	0.4	500
1986	0.4	520	1.4	497	0.8	456	0.8	463	0.6	454	0.6	395	0.7	463	0.3	474	1.0	493	0.8	474
1987	0.2	516	0.6	497	0.6	501	0.9	465	0.7	451	0.6	459	0.6	463	0.4	519	1.1	508	0.7	483
1988	0.3	498	0.7	492	0.9	473	0.7	434	1.1	470	0.5	436	0.6	495	0.6	550	1.2	499	0.8	481
1989	0.5	480	0.7	478	1.7	492	0.6	452	0.7	438	0.7	438	0.5	469	0.4	545	0.9	517	0.7	476
1990	0.5	509	0.5	529	0.8	568	0.4	483	0.3	474	0.5	494	1.0	505	0.2	538	0.8	534	0.5	515
1991	0.5	581	0.3	548	0.5	532	0.3	495	0.3	447	0.4	472	0.9	476	0.3	544	1.2	509	0.5	504
1992	0.7	470	1.2	465	2.1	456	1.3	397	1.3	429	1.6	402	1.2	481	0.7	544	1.5	494	1.3	450
1993	0.4	529	1.2	529	2.6	514	0.9	426	1.6	439	1.2	462	1.1	509	0.6	555	1.3	511	1.1	490
1994	0.4	507	0.5	536	1.6	528	0.6	470	1.3	458	1.2	471	0.6	529	0.8	572	1.8	549	0.9	511
1995	0.5	456	0.7	486	2.4	517	0.9	459	1.4	447	0.8	445	0.6	488	0.4	568	0.9	542	0.9	483
1996	1.2	542	1.4	523	4.4	526	1.1	483	2.0	477	2.2	473	1.5	502	0.6	547	0.7	513	1.4	500
1997	0.5	507	1.4	515	3.2	532	0.7	468	1.0	472	1.7	475	1.3	504	0.4	494	1.2	517	1.2	499
Spotted seatrout																				
1976	ND		<.1	530	ND		0.3	422	0.5	382	3.3	465	0.4	365	<.1	405	3.4	457	1.1	453
1977	ND		0.2	516	2.0	434	0.2	381	0.9	392	1.0	422	0.4	372	1.2	442	1.5	422	0.8	422
1978	ND		0.2	523	0.4	441	0.6	409	1.4	408	0.1	435	0.5	437	0.9	474	1.4	503	0.7	456
1979	ND		0.2	515	0.4	426	0.3	490	0.1	436	0.4	507	0.3	524	0.4	442	0.6	525	0.3	495
1980	ND		0.1	419	0.8	402	0.6	426	0.9	402	0.2	465	0.3	506	0.5	473	0.9	497	0.5	449
1981	ND		0.4	483	1.8	416	0.4	406	0.7	453	0.8	468	0.5	445	0.4	423	2.2	471	0.8	456
1982	ND		0.4	491	0.9	454	0.5	456	0.8	440	0.7	435	0.8	489	0.8	481	2.5	485	0.9	472
1983	ND		0.4	510	1.7	441	0.7	452	0.8	444	0.6	447	0.7	478	0.7	509	1.3	500	0.7	476
1984	ND		0.3	498	0.7	468	0.3	439	0.3	483	0.2	435	0.2	473	<.1	483	0.7	475	0.3	472
1985	ND		0.5	506	0.6	467	0.3	424	0.3	457	0.4	430	0.4	471	0.1	427	1.4	485	0.5	473
1986	0.3	460	0.5	449	1.0	432	0.5	441	0.4	426	0.4	430	1.0	447	0.4	449	1.5	488	0.7	456

TABLE 1. (Cont.)

Species / Year	Sabine Lake		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
Spotted seatrout (cont.)																				
1987	0.2	339	0.6	449	0.7	436	0.4	434	0.4	447	0.5	456	0.9	478	0.4	490	1.9	508	0.7	474
1988	0.2	386	0.7	459	0.8	456	0.5	430	0.5	435	0.5	458	0.8	478	0.4	507	1.6	498	0.7	470
1989	0.2	441	0.6	481	0.5	494	0.5	428	0.6	459	0.6	463	0.7	487	0.4	514	1.1	485	0.6	474
1990	0.1	441	0.5	457	0.6	510	0.3	432	0.6	480	0.5	442	1.1	447	0.2	468	1.3	455	0.6	456
1991	0.1	467	0.5	449	0.3	498	0.4	431	0.8	440	1.0	467	1.0	460	0.6	447	1.9	461	0.8	455
1992	0.2	406	0.7	446	0.4	511	0.4	440	0.4	449	0.7	443	1.3	463	0.6	529	1.9	483	0.8	467
1993	0.3	415	0.5	460	0.5	501	0.6	428	0.7	477	0.6	456	1.1	440	0.5	507	1.9	459	0.8	459
1994	0.3	408	0.7	460	0.8	496	0.7	418	0.8	438	0.9	447	1.0	454	0.9	465	1.8	483	0.9	458
1995	0.1	462	0.7	456	0.5	490	0.4	431	0.9	446	0.6	448	0.9	471	0.6	452	1.0	467	0.7	455
1996	0.2	411	0.7	438	0.6	514	0.6	414	1.3	429	1.0	425	0.8	457	0.5	493	1.4	473	0.8	446
1997	0.2	428	0.9	454	0.9	468	0.8	443	1.3	444	0.9	429	1.2	453	0.7	446	1.4	449	1.0	446
Black drum																				
1976	ND		0.2	290	ND		0.8	418	1.0	306	0.9	389	0.6	360	0.5	352	0.9	387	0.7	366
1977	ND		0.4	388	0.3	262	0.5	519	1.0	314	1.2	316	0.5	347	0.4	377	0.9	428	0.7	374
1978	ND		0.2	439	0.4	345	0.2	300	0.1	306	0.4	358	0.4	325	0.1	398	0.8	395	0.3	373
1979	ND		0.3	292	0.7	328	0.5	415	<.1	370	0.3	323	0.1	375	0.3	371	0.9	413	0.4	371
1980	ND		0.4	314	1.0	272	0.9	355	0.5	263	1.0	320	0.3	352	0.7	384	0.4	452	0.6	341
1981	ND		0.8	418	0.8	312	0.3	301	0.4	352	0.8	362	0.1	379	1.1	390	0.9	391	0.7	381
1982	ND		0.6	343	0.8	294	0.5	363	0.7	317	1.1	300	0.4	339	0.7	374	1.2	400	0.8	347
1983	ND		0.9	337	2.7	365	0.6	355	0.6	323	1.2	340	0.9	371	1.0	400	1.6	441	1.0	372
1984	ND		0.6	373	1.0	391	0.2	368	0.2	460	0.1	559	0.5	414	0.6	442	0.6	459	0.4	417
1985	ND		0.5	346	0.4	313	0.2	476	0.1	426	0.2	396	0.2	342	0.8	361	0.4	372	0.4	374
1986	0.3		0.5	383	0.6	345	0.3	402	0.1	313	0.4	316	0.6	369	0.7	418	0.4	464	0.4	387
1987	0.1	399	0.5	368	0.6	320	0.4	366	0.2	392	0.5	382	0.5	459	1.1	453	0.5	458	0.7	409
1988	0.1	410	0.4	380	0.7	376	0.4	390	0.4	339	0.4	375	0.8	444	0.7	397	0.3	451	0.5	396
1989	0.2	326	0.6	350	1.8	378	0.4	412	0.3	363	0.6	371	0.4	406	1.0	426	0.5	408	0.6	386
1990	0.2	378	0.5	372	1.5	393	0.8	341	0.3	330	0.7	336	0.6	411	1.4	418	0.7	410	0.7	381
1991	0.3	318	0.6	356	1.4	347	0.8	354	0.5	294	1.1	308	0.4	361	3.0	366	1.2	369	1.0	350
1992	0.2	366	0.5	370	1.3	391	0.4	339	0.8	388	0.7	335	1.6	374	3.0	349	2.3	408	1.2	372
1993	0.3	360	0.4	377	0.4	345	0.4	374	1.8	449	1.6	417	3.4	400	2.4	376	2.2	397	1.4	401
1994	0.4	376	0.4	415	0.1	363	0.6	418	1.2	489	1.0	469	2.1	431	4.3	398	3.2	429	1.5	427
1995	0.2	330	0.4	381	0.3	332	0.9	418	0.7	395	1.1	444	1.0	454	4.2	420	1.8	442	1.2	424
1996	0.5	381	0.5	378	0.3	375	0.7	391	1.2	395	1.1	383	1.5	474	3.3	451	2.7	508	1.4	444
1997	0.4	412	0.6	376	0.4	373	0.9	405	2.0	432	1.8	409	1.0	472	3.3	408	1.1	501	1.3	423

TABLE 1. (Cont.)

Species / Year	Sabine Lake		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
Sheepshead																				
1976	ND		0.0		ND		0.1	420	0.3	341	0.6	342	0.0		0.3	367	0.3	318	0.2	345
1977	ND		<.1	338	<.1	234	0.1	280	0.2	308	<.1	232	0.1	294	0.1	380	0.1	336	0.1	311
1978	ND		0.0		0.4	296	<.1	278	0.1	313	0.2	354	0.2	356	0.2	394	0.2	358	0.1	350
1979	ND		<.1	305	0.1	297	0.1	391	<.1	402	0.1	320	0.5	362	0.1	370	0.2	340	0.1	350
1980	ND		<.1	353	0.3	347	0.1	334	0.1	320	0.2	352	0.2	322	0.2	369	0.3	343	0.2	345
1981	ND		<.1	393	0.2	326	<.1	453	0.6	335	0.3	349	0.1	319	0.2	390	0.6	325	0.2	342
1982	ND		0.1	332	0.0		0.1	330	0.2	354	<.1	326	0.2	343	0.2	361	0.6	326	0.2	336
1983	ND		0.1	313	0.4	311	0.1	373	0.2	372	0.1	349	0.3	370	0.2	392	0.4	342	0.2	354
1984	ND		0.1	351	0.3	354	0.1	387	0.2	398	<.1	401	0.2	379	0.1	385	0.2	348	0.1	370
1985	ND		<.1	352	0.2	372	<.1	337	<.1	409	<.1	382	0.1	424	<.1	427	0.1	353	0.1	382
1986	<.1	372	<.1	372	0.2	356	<.1	369	0.1	417	<.1	305	0.1	388	<.1	427	0.1	370	0.1	382
1987	<.1	364	<.1	361	0.2	314	<.1	340	<.1	447	<.1	342	<.1	350	<.1	403	0.2	372	0.1	366
1988	0.0		<.1	405	0.1	350	<.1	357	0.1	342	0.1	348	0.1	371	<.1	407	0.1	369	0.1	366
1989	<.0	529	0.1	384	0.3	324	<.1	371	<.1	379	<.1	350	0.2	412	<.1	371	0.2	371	0.1	374
1990	<.1	364	<.1	378	0.3	364	0.1	400	<.1	444	<.1	372	0.2	388	<.1	358	0.1	396	0.1	387
1991	<.1	354	<.1	381	0.2	343	<.1	359	<.1	491	<.1	304	<.1	367	<.1	406	0.1	389	<.1	382
1992	<.1	278	<.1	346	0.1	356	0.1	367	0.1	415	<.1	348	0.1	436	<.1	434	0.2	379	0.1	390
1993	<.1	343	<.1	376	0.2	360	0.1	408	0.1	355	<.1	408	0.1	422	<.1	427	0.1	394	0.1	392
1994	<.1	353	<.1	374	0.2	413	<.1	372	<.1	338	<.1	344	<.1	435	<.1	429	0.1	375	<.1	376
1995	<.1	309	<.1	389	0.1	428	0.1	407	0.3	359	0.1	363	0.3	446	<.1	426	0.1	372	0.1	393
1996	<.1	362	<.1	383	0.2	438	0.2	403	0.5	401	0.1	367	0.2	452	<.1	397	0.1	371	0.1	402
1997	<.1	395	<.1	387	0.1	394	0.1	377	0.3	392	0.2	373	0.1	392	0.1	445	0.1	366	0.1	385
Southern flounder																				
1976	ND		0.0		ND		0.0		0.1	335	0.0		0.0		0.0		0.2	350	<.1	345
1977	ND		<.1	351	0.1	358	<.1	328	<.1	208	0.1	358	<.1	430	0.0		<.1	345	<.1	347
1978	ND		<.1	249	0.1	352	<.1	330	0.1	279	<.1	338	0.1	338	0.1	345	0.1	344	0.1	323
1979	ND		<.1	451	0.1	348	0.1	290	0.1	388	<.1	291	0.1	373	0.1	320	0.2	366	0.1	354
1980	ND		0.1	344	0.1	325	0.1	307	<.1	292	0.1	292	0.1	316	0.1	364	0.1	364	0.1	330
1981	ND		<.1	244	<.1	340	<.1	270	0.1	291	<.1	368	0.1	332	0.1	348	0.1	338	0.1	322
1982	ND		0.1	343	<.1	319	0.1	307	0.1	305	0.1	299	0.1	361	0.1	337	0.1	350	0.1	332
1983	ND		0.1	366	0.1	318	0.1	327	<.1	333	<.1	329	0.1	385	0.1	359	0.1	371	0.1	357
1984	ND		0.1	338	0.1	388	<.1	317	<.1	321	<.1	310	0.1	377	<.1	344	<.1	355	0.1	342
1985	ND		0.1	349	0.1	348	<.1	346	0.1	329	0.1	347	0.1	353	0.1	346	0.1	336	0.1	344
1986	<.1	294	0.1	345	0.2	329	<.1	358	0.1	316	0.1	357	<.1	395	0.1	354	0.1	370	0.1	354
1987	<.1	364	0.1	338	0.1	330	<.1	304	0.1	345	<.1	336	<.1	333	0.1	407	0.1	401	0.1	353
1988	<.1	292	0.1	367	0.1	349	0.1	354	<.1	350	<.1	334	<.1	353	0.1	400	<.1	360	0.1	359

TABLE 1. (Cont.)

Species / Year	Sabine Lake		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
Southern flounder (cont.)																				
1989	<.1	288	0.1	347	0.1	362	<.1	318	<.1	317	<.1	340	<.1	381	<.1	402	0.1	392	<.1	349
1990	<.1	309	<.1	351	0.1	360	<.1	354	<.1	350	<.1	311	<.1	347	<.1	333	0.1	410	<.1	358
1991	<.1	329	0.1	322	0.1	365	<.1	322	0.1	348	0.1	326	0.1	343	0.1	363	0.1	358	0.1	346
1992	<.1	319	0.1	371	0.1	366	<.1	346	<.1	373	<.1	355	<.1	377	<.1	438	0.1	394	<.1	374
1993	<.1	364	<.1	360	0.1	395	<.1	369	<.1	357	<.1	417	0.1	398	<.1	453	<.1	349	<.1	374
1994	<.1	334	<.1	343	0.1	378	<.1	327	<.1	362	<.1	332	<.1	362	<.1	332	<.1	380	<.1	352
1995	<.1	315	<.1	331	0.1	400	<.1	369	<.1	369	<.1	370	<.1	398	<.1	362	<.1	379	<.1	367
1996	<.1	369	0.1	373	0.1	380	<.1	360	<.1	381	0.1	377	<.1	392	<.1	341	<.1	402	<.1	376
1997	<.1	275	0.1	341	<.1	383	<.1	306	<.1	328	<.1	362	<.1	353	<.1	368	0.1	364	<.1	346
Atlantic croaker																				
1976	ND		0.2	298	ND		0.1		0.2	332	0.0		1.0	277	0.0		0.8	333	0.3	306
1977	ND		0.3	268	0.1	255	0.0		<.1	227	<.1	285	1.0	264	0.4	297	0.2	269	0.2	271
1978	ND		0.1	247	<.1	270	<.1	293	<.1	250	<.1	248	0.1	281	0.2	281	0.1	276	0.1	268
1979	ND		0.2	260	<.1	257	<.1	263	0.0		0.0		0.1	265	0.1	298	0.2	308	0.1	279
1980	ND		0.1	268	0.1	250	0.0		<.1	254	<.1	240	0.1	272	0.3	312	0.1	286	0.1	286
1981	ND		0.1	264	0.1	250	<.1	276	0.0		0.1	289	0.1	266	0.3	302	0.1	277	0.1	282
1982	ND		0.2	268	0.1	258	<.1	270	<.1	265	<.1	261	0.1	285	0.2	313	0.4	347	0.1	308
1983	ND		0.3	268	0.1	278	<.1	273	<.1	277	<.1	286	0.2	265	0.2	289	0.4	314	0.1	286
1984	ND		0.1	265	<.1	322	<.1	225	<.1	298	<.1	260	<.1	262	<.1	304	<.1	285	<.1	266
1985	ND		0.2	273	<.1	318	<.1	260	<.1	184	<.1	115	0.1	265	0.2	267	0.1	261	0.1	266
1986	0.1	259	0.4	271	0.1	250	<.1	245	<.1	250	<.1	292	0.3	255	0.2	297	0.1	288	0.1	272
1987	0.1	263	0.2	260	<.1	242	<.1	236	<.1	268	<.1	246	0.1	282	<.1	319	<.1	251	0.1	263
1988	0.1	259	0.1	265	<.1	226	<.1	278	0.0		<.1	260	0.1	261	0.1	337	<.1	296	<.1	276
1989	0.1	268	0.1	264	0.1	280	<.1	250	0.0		<.1	262	<.1	284	<.1	342	<.1	283	<.1	274
1990	<.1	278	0.1	269	0.1	264	<.1	268	<.1	283	<.1	276	<.1	267	<.1	245	<.1	272	<.1	269
1991	0.1	297	0.1	262	<.1	256	<.1	237	<.1	239	<.1	252	0.1	261	<.1	269	0.1	267	0.1	263
1992	0.1	263	0.2	253	0.2	270	<.1	257	0.0		<.1	232	0.1	204	<.1	290	0.1	266	0.1	261
1993	0.1	286	0.2	256	0.1	259	<.1	237	<.1	277	<.1	267	0.1	265	0.1	295	0.1	272	0.1	264
1994	0.1	297	0.1	267	0.1	272	<.1	266	<.1	263	<.1	257	0.1	279	<.1	328	<.1	298	0.1	279
1995	<.1	278	0.2	262	0.1	281	<.1	289	<.1	276	<.1	273	0.1	300	<.1	382	<.1	321	0.1	275
1996	0.1	268	0.3	277	0.1	255	<.1	249	0.1	275	<.1	262	0.1	294	<.1	355	<.1	273	0.1	277
1997	0.1	278	0.1	268	0.1	280	<.1	249	<.1	271	0.1	263	0.1	298	0.1	283	0.1	280	0.1	272
Gafftopsail catfish																				
1976	ND		6.4	504	ND		0.5	494	2.3	456	0.0		0.0		0.0		0.0		1.8	496
1977	ND		0.2	480	0.4	506	0.9	556	3.3	538	3.1	506	0.0		0.0		0.0		1.0	524

TABLE 1. (Cont.)

Species / Year	Sabine Lake		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
Gafftopsail catfish (cont.)																				
1978	ND		0.3	539	0.1	546	1.1	546	1.8	496	0.1	545	<.1	436	0.0		0.0		0.5	521
1979	ND		0.3	520	0.5	534	0.4	553	0.4	534	0.5	544	0.2	551	0.0		0.0		0.3	539
1980	ND		0.2	511	0.2	566	0.5	554	1.2	547	0.4	552	0.1	598	0.0		0.0		0.3	546
1981	ND		0.2	514	0.3	480	0.8	541	0.5	537	1.4	541	0.1	521	<.1	577	0.0		0.4	536
1982	ND		0.4	513	0.2	496	0.4	544	1.4	540	0.9	542	0.3	530	<.1	534	<.1	372	0.5	535
1983	ND		0.2	544	<.1	475	0.3	537	2.0	530	0.9	537	0.1	536	<.1	575	0.0		0.5	534
1984	ND		0.2	527	<.1	580	1.0	529	1.1	530	0.6	550	0.2	532	<.1	472	<.1	211	0.4	533
1985	ND		0.3	532	<.1	467	0.4	517	0.8	537	0.1	557	0.1	507	<.1	413	<.1	388	0.2	530
1986	0.2	490	0.4	515	0.3	468	0.3	533	0.5	554	0.4	529	0.4	534	<.1	374	0.0		0.3	528
1987	<.1	509	0.4	552	0.1	507	0.2	539	0.1	565	0.2	567	0.2	550	<.1	532	<.1	518	0.2	551
1988	0.1	538	0.2	511	0.1	530	0.5	531	0.3	563	0.2	562	0.2	550	0.0		<.1	428	0.2	537
1989	<.1	494	0.3	536	0.1	535	0.6	530	0.4	557	0.1	569	0.1	533	0.0		<.1	536	0.2	539
1990	<.1	518	0.8	528	0.2	460	0.8	534	0.6	555	0.4	546	0.4	554	0.0		0.0		0.4	537
1991	<.1	520	0.2	504	0.2	528	0.5	531	0.7	527	0.4	565	0.4	530	<.1	546	<.1	454	0.3	532
1992	<.1	519	0.1	521	0.2	556	0.3	530	0.6	578	0.1	559	0.2	530	0.0		<.1	508	0.2	549
1993	<.1	457	0.5	494	0.2	581	0.5	543	0.8	563	0.3	576	0.2	503	0.0		<.1	405	0.3	535
1994	<.1	518	0.1	495	0.2	569	0.8	545	1.2	571	0.2	561	0.2	547	0.0		0.0		0.3	554
1995	<.1	508	0.4	498	0.3	543	0.3	517	0.7	557	0.2	572	0.1	529	0.0		<.1	210	0.3	533
1996	<.1	377	0.3	496	0.1	569	0.5	494	0.6	537	0.2	534	0.2	526	0.0		<.1	456	0.3	513
1997	<.1	465	0.4	519	0.2	557	0.3	502	1.4	219	0.3	496	0.4	524	<.1	422	<.1	455	0.4	515
Gulf menhaden																				
1976	ND		0.2	261	ND		0.1	250	0.1	275	0.0		0.0		0.0		0.0		0.1	261
1977	ND		2.5	251	0.7	299	0.1	245	0.1	233	0.3	247	2.6	255	<.1	282	<.1	229	0.9	253
1978	ND		0.3	242	<.1	194	0.2	245	1.2	258	0.0		0.2	263	1.2	264	<.1	246	0.4	256
1979	ND		1.2	251	0.0		0.1	251	<.1	132	<.1	241	0.1	255	0.2	260	0.0		0.3	251
1980	ND		<.1	193	0.0		<.1	252	0.1	287	<.1	271	<.1	257	0.6	269	<.1	253	0.1	265
1981	ND		0.4	260	0.0		0.2	254	0.1	252	0.2	254	0.1	243	0.1	246	0.1	244	0.2	255
1982	ND		0.4	254	0.0		<.1	248	0.3	252	0.1	249	<.1	250	0.4	268	<.1	303	0.2	257
1983	ND		0.8	252	0.0		0.2	251	0.2	243	0.1	244	0.1	248	0.1	304	0.1	252	0.3	252
1984	ND		0.5	254	0.0		0.1	251	0.2	279	0.2	246	0.1	257	<.1	284	<.1	265	0.2	256
1985	ND		0.8	253	<.1	281	0.5	242	0.3	243	0.4	250	0.6	250	<.1	244	0.8	260	0.5	252
1986	0.1	279	1.3	251	<.1	226	0.1	242	0.1	244	0.2	245	0.4	258	<.1	252	<.1	253	0.4	251
1987	<.1	348	1.2	245	<.1	227	<.1	241	0.0	226	0.0	226	0.2	242	<.1	240	0.1	253	0.3	245
1988	<.1	278	0.1	244	0.0		0.2	244	<.1	278	<.1	236	0.1	253	<.1	257	<.1	290	0.1	249
1989	<.1	269	1.4	249	0.0		0.1	232	<.1	226	0.0	187	0.1	235	0.0		0.0		0.3	248
1990	<.1	270	1.6	242	<.1	237	0.1	216	<.1	263	<.1	255	<.1	237	<.1	308	<.1	239	0.4	242

TABLE 1. (Cont.)

Species / Year	Sabine Lake		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
Gulf menhaden (cont.)																				
1991	<.1	253	0.3	252	<.1		0.1	216	0.1	239	<.1	281	0.1	255	0.0	251	0.0	241	0.1	247
1992	<.1	266	0.7	257	0.0		<.1	207	0.1	245	0.1	251	0.1	275	<.1	252	<.1	279	0.2	257
1993	<.1	256	1.5	247	0.0		0.1	257	<.1	217	0.0		<.1	242	<.1	312	<.1	.282	0.3	247
1994	0.1	267	0.5	260	0.0		0.1	235	<.1	254	<.1	262	0.1	253	<.1	238	<.1	295	0.1	258
1995	0.1	275	0.2	257	<.1	252	0.3	254	0.2	255	0.1	265	<.1	207	0.0		0.1	269	0.1	257
1996	<.1	256	0.4	252	<.1	241	0.1	241	<.1	269	<.1	243	<.1	253	<.1	238	<.1	306	0.1	251
1997	<.1	264	0.3	249	<.1	246	0.2	231	0.1	242	0.2	257	0.2	248	<.1	248	0.1	298	0.1	249
Striped mullet																				
1976	ND		0.1	385	ND		0.2	322	0.2	338	0.6	366	0.0		<.1	375	0.0		0.2	358
1977	ND		0.2	322	0.0		0.2	314	0.9	317	0.8	319	0.1	340	0.2	368	0.2	345	0.3	323
1978	ND		0.0		0.1	327	0.4	336	0.2	334	0.2	327	0.2	366	0.1	327	0.1	354	0.2	338
1979	ND		0.2	320	0.1	336	0.1	341	0.7	343	0.2	339	0.1	333	0.1	404	0.1	354	0.2	341
1980	ND		0.1	343	<.1	338	0.4	335	0.2	328	0.1	337	0.1	320	0.2	379	0.2	356	0.2	343
1981	ND		<.1	318	0.1	345	<.1	336	<.1	341	0.1	336	0.1	321	0.2	353	0.2	353	0.1	344
1982	ND		0.2	344	0.2	295	0.2	326	0.2	330	0.2	333	0.2	344	0.2	359	0.3	361	0.2	341
1983	ND		0.2	350	0.1	346	0.1	346	0.2	341	0.2	341	0.1	351	0.3	367	0.2	368	0.2	352
1984	ND		0.2	344	0.2	340	0.3	328	0.2	337	0.4	337	0.1	336	0.6	352	0.5	347	0.3	342
1985	ND		0.2	340	0.2	339	0.3	332	0.1	328	0.3	340	0.1	338	0.2	380	0.1	339	0.2	342
1986	0.1	326	0.2	350	0.2	321	0.2	330	0.1	328	0.2	336	0.1	340	0.1	368	0.1	341	0.1	340
1987	<.1	312	0.2	366	0.1	319	0.2	343	0.2	348	0.2	354	0.1	336	0.1	402	0.2	359	0.2	357
1988	<.1	327	0.1	344	0.2	333	0.1	323	0.2	348	0.1	343	0.1	350	0.1	371	0.1	364	0.1	348
1989	<.1	323	0.2	348	0.4	339	0.2	337	0.1	356	0.2	356	0.1	344	0.1	400	0.1	372	0.2	354
1990	<.1	325	0.2	341	0.3	342	0.4	342	0.2	357	0.2	340	0.2	340	0.5	389	0.4	353	0.3	354
1991	<.1	325	0.1	347	0.2	341	0.2	347	0.2	343	0.3	335	0.1	343	0.2	386	0.1	377	0.2	350
1992	<.1	310	0.1	352	0.3	340	0.3	341	0.2	342	0.4	352	0.2	355	0.2	389	0.2	374	0.2	355
1993	<.1	331	0.1	358	0.3	371	0.2	333	0.3	347	0.4	356	0.2	355	0.2	379	0.1	354	0.2	353
1994	0.1	343	0.1	347	0.1	381	0.3	343	0.3	359	0.2	368	0.1	365	0.2	386	0.2	383	0.2	362
1995	<.1	341	0.3	356	0.2	366	0.5	347	0.3	364	0.2	366	0.1	359	0.2	403	0.1	376	0.3	361
1996	0.1	336	0.3	348	0.2	349	0.2	352	0.3	355	0.2	364	0.1	361	0.2	385	0.1	364	0.2	358
1997	<.1	344	0.2	356	0.2	342	0.4	355	0.3	352	0.3	349	0.1	373	0.6	443	0.1	381	0.3	378
Total finfishes																				
1976	ND		11.1	429	ND		5.2	394	7.6	391	9.5	415	6.2	332	1.1	378	7.1	419	7.3	408
1977	ND		8.8	316	4.3	395	5.9	442	8.2	428	8.1	428	7.6	297	3.8	366	4.3	395	6.7	377
1978	ND		5.0	357	2.4	359	4.8	437	7.7	409	2.0	406	3.4	343	4.6	365	5.0	406	4.6	390
1979	ND		6.8	345	2.5	396	3.4	409	3.2	453	3.2	433	2.7	393	2.2	360	3.2	411	3.8	387

TABLE 1. (Cont.)

Species / Year	Sabine Lake		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
Total finfishes (cont.)																				
1980	ND		5.0	380	4.2	347	5.4	428	5.2	422	3.1	405	2.8	387	3.9	368	3.5	419	4.3	400
1981	ND		4.6	369	5.5	363	5.3	408	6.1	417	6.0	432	2.8	634	4.2	353	6.5	406	5.2	396
1982	ND		8.1	378	4.7	368	5.3	435	6.8	411	5.8	417	4.6	400	4.5	367	8.8	394	6.4	397
1983	ND		9.0	369	7.6	384	4.5	417	7.2	422	5.5	404	5.5	397	5.0	373	7.5	409	6.6	394
1984	ND		6.2	389	3.7	397	4.3	449	5.6	431	3.9	432	4.8	397	3.2	369	4.6	412	4.7	410
1985	ND		7.6	381	3.8	408	5.2	446	4.1	479	3.6	452	5.0	368	3.6	350	5.2	384	5.1	404
1986	4.9	432	9.3	377	5.4	381	5.0	425	3.5	422	3.2	418	5.7	371	2.9	387	5.2	425	5.3	398
1987	2.0	517	8.7	373	4.3	384	4.0	430	2.9	420	3.4	431	3.8	420	3.0	432	5.9	434	4.8	408
1988	2.5	472	6.7	385	4.6	401	4.5	411	4.7	444	3.0	436	6.4	390	3.2	407	5.4	436	4.8	411
1989	2.6	474	9.0	365	7.4	396	5.1	428	6.4	437	4.2	403	4.4	402	2.8	432	4.7	425	5.5	403
1990	2.5	485	10.5	367	8.2	403	6.6	432	6.1	448	5.1	410	6.8	410	3.5	405	5.2	424	6.5	405
1991	3.1	474	6.9	367	11.7	358	6.4	415	6.1	437	6.0	400	5.8	405	5.3	381	7.2	409	6.4	398
1992	2.6	445	8.4	395	8.8	423	6.3	407	5.9	448	7.1	412	7.0	410	5.7	409	8.4	431	7.0	414
1993	2.4	480	9.8	387	8.7	459	7.0	424	8.6	467	6.9	453	9.7	419	4.8	427	8.3	428	7.8	425
1994	2.7	451	6.6	394	6.8	467	7.2	419	9.0	444	7.2	438	7.4	425	7.7	428	9.7	454	7.5	429
1995	2.3	463	8.4	390	7.4	460	7.8	400	9.9	422	6.8	411	6.7	421	7.2	417	6.3	435	7.5	412
1996	5.1	493	7.9	397	9.1	460	8.2	393	10.9	417	8.4	411	7.4	433	6.0	441	7.1	454	7.9	420
1997	2.7	467	6.4	424	736	465	6.1	407	10.4	434	8.5	411	6.8	433	6.3	400	5.6	446	6.9	424
Blue crab																				
1983	ND		0.2	151	0.3	154	0.1	151	0.2	142	0.3	142	0.2	151	0.1	156	0.2	145	0.2	147
1984	ND		0.2	150	0.4	135	0.1	143	0.2	137	0.2	142	0.3	147	0.3	145	0.2	142	0.2	144
1985	ND		0.3	149	0.5	151	0.2	144	0.3	136	0.2	141	0.2	149	0.3	141	0.2	158	0.2	147
1986	0.2	146	0.3	151	0.6	133	0.2	140	0.1	135	0.1	144	0.1	154	<.1	147	0.1	148	0.2	145
1987	0.3	152	0.3	139	0.3	138	0.1	138	0.2	140	0.1	155	0.1	151	<.1	137	0.1	142	0.1	141
1988	0.3	154	0.1	148	0.1	159	<.1	135	0.1	141	0.1	150	0.1	145	<.1	115	0.1	152	0.1	147
1989	0.2	157	0.1	137	0.4	128	<.1	136	<.1	128	<.1	131	<.1	149	<.1	72	<.1	147	0.1	136
1990	0.2	154	0.2	141	0.2	129	<.1	138	0.2	135	0.1	135	0.2	140	<.1	114	0.1	139	0.1	138
1991	0.1	141	0.2	132	0.4	135	0.2	144	0.1	136	0.1	144	0.1	140	<.1	105	0.1	152	0.1	138
1992	0.1	151	0.2	153	0.1	135	<.1	144	0.1	133	0.1	142	0.3	150	0.4	146	0.1	146	0.1	147
1993	0.2	161	0.1	144	0.2	162	0.1	147	0.1	148	0.1	152	0.2	148	0.1	147	<.1	136	0.1	149
1994	0.1	155	<.1	144	0.1	160	<.1	143	0.1	134	<.1	149	0.1	158	<.1	102	<.1	129	<.1	140
1995	0.1	164	0.1	147	0.3	165	<.1	151	<.1	161	<.1	167	<.1	152	<.1	141	<.1	107	<.1	153
1996	0.2	150	0.1	136	0.2	152	0.1	138	<.1	163	<.1	151	<.1	161	<.1	141	0.1	149	0.1	145
1997	0.1	152	0.2	149	0.4	150	0.1	155	<.1	141	<.1	153	<.1	152	<.1	114	0.1	149	0.1	149

TABLE 2. Mean catch rates (No./h) and mean total lengths (mm) of selected fishes and blue crab caught with gill nets (all meshes combined) by bay system during fall 1975-97. Blank indicates no measurement taken; ND = no data.

Species / Year	Sabine Lake		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																				
1975	0.8	382	1.1	403	ND		1.2	337	0.9	326	1.1	339	0.4	330	0.3	424	0.7	474	0.9	373
1976	ND		1.0	509	1.1	487	0.5	415	1.6	406	0.5	395	0.5	460	0.4	442	1.3	465	0.9	452
1977	ND		0.6	445	0.9	390	0.8	435	1.0	386	0.6	392	0.5	427	0.2	364	0.4	448	0.6	416
1978	ND		0.3	429	0.7	376	1.1	395	0.6	384	1.0	401	0.4	429	0.3	455	0.4	493	0.6	412
1979	ND		0.8	386	0.7	403	1.4	353	1.9	376	0.9	378	0.8	352	0.5	387	0.5	449	1.0	378
1980	ND		0.5	436	0.8	473	0.6	434	0.9	411	1.1	386	0.7	370	0.5	454	0.7	449	0.7	419
1981	ND		0.5	429	0.7	405	0.6	390	0.7	373	0.8	403	0.6	396	0.3	515	0.8	488	0.6	422
1982	ND		0.6	440	0.9	401	0.6	390	0.5	360	0.4	386	0.3	417	0.2	456	0.5	440	0.5	412
1983	ND		0.6	436	0.8	394	0.5	418	0.6	407	0.4	410	0.3	448	0.2	486	0.7	509	0.5	440
1984	ND		0.9	451	1.1	551	0.4	381	0.6	383	0.5	377	0.8	400	0.7	457	0.7	472	0.7	433
1985	ND		0.9	421	1.3	420	0.8	394	1.3	385	0.9	427	0.7	436	0.3	460	0.9	478	0.9	423
1986	0.4	481	0.7	468	0.9	453	0.8	403	1.2	441	0.9	454	0.5	450	0.4	486	0.9	495	0.8	456
1987	0.4	449	0.5	459	0.9	446	0.8	372	1.0	473	0.6	459	0.4	424	0.3	527	1.5	532	0.7	467
1988	0.5	399	0.8	437	1.5	486	0.9	418	1.1	457	0.9	454	0.5	458	0.3	520	1.3	522	0.8	463
1989	0.4	461	0.6	479	1.1	511	0.4	402	1.1	468	0.7	423	0.6	476	0.3	533	1.1	521	0.7	475
1990	0.4	500	0.3	488	0.8	497	0.5	408	1.1	458	1.0	477	0.8	432	0.7	553	1.0	534	0.7	482
1991	1.1	412	0.5	393	0.9	380	0.6	402	1.3	375	1.0	442	1.5	451	0.6	517	1.5	514	0.9	441
1992	0.5	531	0.7	482	2.0	494	0.8	419	0.7	453	1.4	435	1.0	477	0.7	502	1.3	479	0.9	465
1993	0.3	484	0.4	482	1.9	526	0.9	439	1.6	480	1.7	490	1.0	500	0.7	555	1.4	531	1.0	496
1994	0.6	426	0.6	437	1.9	478	0.6	447	1.0	470	1.0	468	0.6	471	0.4	568	1.1	539	0.8	481
1995	0.6	454	0.5	474	2.1	470	0.5	413	0.7	421	0.9	458	0.6	467	0.3	521	0.9	506	0.7	464
1996	0.8	431	0.5	453	2.2	479	0.7	452	1.0	456	1.1	468	0.5	467	0.5	507	1.0	493	0.8	468
1997	0.8	473	0.9	469	2.0	496	1.0	414	1.0	436	1.6	490	0.9	485	0.8	505	1.6	510	1.1	476
Spotted seatrout																				
1975	0.1	413	0.2	447	ND		0.6	419	1.0	389	0.6	474	0.4	479	0.2	455	0.8	413	0.5	428
1976	ND		0.3	463	0.9	451	0.4	437	0.7	427	0.2	448	0.6	387	0.2	455	2.4	431	0.7	433
1977	ND		0.3	501	0.3	461	0.4	455	0.5	387	0.1	485	0.3	483	0.6	412	0.8	464	0.4	449
1978	ND		0.3	544	0.3	400	0.8	406	0.5	387	0.1	383	0.2	417	0.4	431	0.5	437	0.4	432
1979	ND		0.2	449	0.1	385	0.6	418	0.2	439	0.1	476	0.2	413	0.1	434	0.4	472	0.2	438
1980	ND		0.4	476	0.2	418	0.3	406	0.3	435	0.2	446	0.3	465	0.2	434	0.5	490	0.3	458
1981	ND		0.3	483	0.8	419	0.4	437	0.3	428	0.2	442	0.4	437	0.2	469	0.7	486	0.4	457

TABLE 2. (Cont.)

Species / Year	Sabine Lake		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
Spotted seatrout (cont.)																				
1982	ND		0.3	456	0.4	468	0.3	430	0.4	428	0.2	446	0.2	458	0.4	435	0.5	453	0.3	445
1983	ND		0.3	464	0.5	420	0.3	438	0.5	425	0.2	459	0.3	435	0.3	459	0.6	476	0.4	452
1984	ND		0.4	465	0.3	459	0.2	430	0.2	420	0.1	453	0.2	467	0.1	400	0.4	458	0.3	453
1985	ND		0.3	470	0.3	418	0.4	439	0.2	430	0.2	438	0.4	432	0.2	443	0.6	475	0.3	453
1986	0.2	395	0.4	438	0.4	444	0.5	419	0.4	432	0.3	442	0.4	464	0.3	437	1.0	472	0.4	446
1987	0.1	410	0.2	459	0.5	425	0.6	425	0.3	422	0.3	452	0.5	461	0.2	456	0.7	461	0.4	446
1988	0.1	420	0.5	444	0.7	432	0.3	439	0.4	438	0.3	430	0.4	442	0.2	428	0.9	479	0.4	449
1989	0.1	430	0.3	441	0.4	447	0.2	435	0.4	457	0.3	446	0.4	475	0.1	464	0.6	460	0.3	453
1990	<.1	399	0.2	460	0.5	461	0.2	427	0.2	479	0.3	459	0.5	474	0.1	505	0.5	477	0.3	467
1991	0.1	378	0.2	442	0.3	473	0.5	406	0.4	415	0.3	436	0.6	449	0.4	482	0.8	466	0.4	443
1992	0.1	392	0.3	418	0.5	452	0.4	417	0.2	436	0.4	457	0.6	463	0.5	508	0.8	443	0.4	448
1993	0.1	450	0.3	446	0.9	472	0.3	428	0.4	430	0.3	441	0.9	427	0.5	468	0.6	447	0.4	444
1994	0.1	398	0.4	434	0.8	465	0.3	417	0.5	431	0.4	435	0.6	442	0.5	448	0.6	429	0.4	436
1995	0.1	397	0.4	439	1.0	474	0.3	438	0.5	431	0.4	429	0.4	454	0.4	451	0.5	432	0.4	440
1996	0.2	405	0.6	430	0.7	490	0.3	416	0.7	426	0.7	427	0.3	460	0.6	426	0.4	436	0.5	432
1997	0.2	420	0.7	431	0.6	526	0.3	424	0.6	425	0.5	432	0.4	477	0.4	430	0.4	429	0.5	436
Black drum																				
1975	0.5	294	0.4	366	ND		0.9	326	0.5	315	0.8	290	0.4	358	1.2	422	1.0	454	0.7	367
1976	ND		0.3	337	0.7	305	0.9	344	1.2	325	0.6	376	0.3	366	1.0	503	2.4	419	0.9	388
1977	ND		0.4	384	0.5	371	0.5	338	0.7	336	0.4	341	0.3	365	0.8	406	2.2	410	0.7	383
1978	ND		0.4	383	1.0	346	0.5	383	0.3	306	0.5	311	0.1	383	0.8	425	0.4	377	0.5	372
1979	ND		0.2	398	0.1	410	0.2	404	0.4	361	0.3	380	0.4	308	0.4	391	0.5	423	0.3	387
1980	ND		0.8	391	0.9	341	0.7	306	1.2	298	0.9	340	0.5	370	0.6	365	1.0	400	0.8	352
1981	ND		0.3	408	0.4	343	0.4	383	0.5	315	0.5	341	0.4	357	0.5	390	0.8	384	0.5	369
1982	ND		0.6	355	2.4	346	0.6	352	1.0	296	1.1	337	0.6	369	0.9	388	1.9	387	1.0	356
1983	ND		0.2	381	1.0	361	0.6	375	0.6	328	0.6	345	0.7	406	0.5	422	0.9	418	0.6	381
1984	ND		0.5	405	0.7	348	0.2	386	0.3	269	0.2	329	0.2	376	0.4	438	0.5	442	0.3	389
1985	ND		0.8	379	0.6	363	0.4	357	0.3	295	0.4	325	0.2	363	0.9	389	0.5	435	0.5	372
1986	0.4	360	0.7	380	0.6	303	0.6	351	0.4	342	0.5	357	0.3	388	0.5	417	0.5	441	0.5	379
1987	0.3	378	0.4	376	1.5	376	0.4	383	0.3	364	0.5	370	0.2	384	0.4	403	0.6	465	0.4	393
1988	0.2	355	0.5	387	1.2	339	0.7	346	1.0	334	0.7	330	0.7	337	1.5	405	0.6	422	0.8	368
1989	0.5	324	2.0	384	1.4	358	0.8	351	1.0	337	1.4	373	1.3	416	1.5	421	1.2	401	1.3	383

TABLE 2. (Cont.)

Species / Year	Sabine Lake		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
Black drum (cont.)																				
1990	0.3	342	0.4	375	0.8	368	0.6	362	1.0	298	1.0	334	0.6	398	1.0	431	1.0	423	0.8	372
1991	0.3	347	0.5	382	1.0	364	0.6	375	1.3	369	0.7	321	0.9	340	2.2	359	1.8	367	1.0	361
1992	0.4	373	0.5	402	1.1	422	0.7	394	0.3	352	0.9	372	0.8	372	1.4	363	2.2	366	0.9	375
1993	0.3	372	0.6	400	1.0	456	0.8	430	1.0	449	1.6	439	1.7	424	3.8	422	2.7	401	1.6	421
1994	0.5	370	0.5	415	0.3	442	0.7	438	0.9	453	0.9	429	0.9	432	4.9	430	2.2	445	1.4	433
1995	1.0	347	0.6	358	0.5	461	0.6	354	0.7	398	1.1	408	1.5	472	4.5	461	2.3	480	1.4	438
1996	0.6	410	0.4	381	0.5	401	1.0	394	1.4	404	1.4	414	1.3	454	4.1	451	2.2	492	1.5	438
1997	1.2	359	0.3	379	0.7	429	0.6	397	0.7	413	1.1	409	0.6	434	3.6	425	1.2	474	1.1	419
Sheepshead																				
1975	0.0		<.1	362	ND		0.1	316	0.3	291	1.1	296	0.2	376	0.3	409	0.1	352	0.3	323
1976	ND		<.1	331	0.2	308	0.2	273	0.4	329	1.0	255	0.1	328	0.2	360	0.4	341	0.3	297
1977	ND		0.1	342	0.3	316	0.1	314	0.2	321	0.5	267	0.2	335	0.2	406	0.3	356	0.2	323
1978	ND		0.1	308	0.2	307	0.1	342	0.5	371	0.6	306	0.2	361	0.3	376	0.1	300	0.2	337
1979	ND		<.1	335	0.2	352	0.1	312	0.5	362	0.8	318	0.2	339	0.1	395	0.2	349	0.2	338
1980	ND		0.1	283	0.1	309	<.1	353	0.7	296	0.6	307	0.2	361	0.2	382	0.4	330	0.3	316
1981	ND		<.1	321	0.1	277	0.2	292	0.3	335	0.2	322	0.1	343	0.1	382	0.3	332	0.2	327
1982	ND		0.1	330	0.3	332	0.1	313	0.1	296	0.2	350	0.1	365	0.2	383	0.3	330	0.1	339
1983	ND		<.1	342	0.5	345	0.1	338	0.2	302	0.1	355	0.1	361	0.2	395	0.3	340	0.2	346
1984	ND		0.1	369	0.3	383	<.1	369	<.1	427	<.1	436	<.1	383	0.1	417	0.1	333	0.1	379
1985	ND		<.1	380	0.2	379	<.1	374	0.1	362	<.1	326	<.1	352	<.1	435	0.1	369	0.1	369
1986	<.1	340	0.1	359	0.1	297	0.1	336	0.1	329	0.1	304	0.1	359	<.1	407	0.1	351	0.1	336
1987	<.1	402	<.1	381	0.1	366	0.1	352	0.1	371	0.2	360	0.1	340	<.1	386	0.2	342	0.1	355
1988	0.0		<.1	368	0.1	340	0.1	358	0.1	346	0.1	304	<.1	354	0.1	398	0.2	382	0.1	359
1989	<.1	299	0.1	371	0.2	343	<.1	324	0.2	341	0.1	329	0.1	361	<.1	422	0.2	371	0.1	357
1990	<.1	303	<.1	418	0.3	354	<.1	332	0.1	417	<.1	360	<.1	367	0.1	422	0.1	403	0.1	385
1991	<.1	336	<.1	435	0.1	392	<.1	359	0.1	365	<.1	353	<.1	413	<.1	446	0.1	384	<.1	387
1992	<.1	367	<.1	362	0.1	392	0.2	368	<.1	320	0.1	307	<.1	379	<.1	445	0.1	398	0.1	363
1993	<.1	329	<.1	372	0.2	389	0.1	363	0.1	328	0.1	315	<.1	407	<.1	486	0.1	412	0.1	369
1994	<.1	310	0.1	426	0.2	390	0.1	367	0.2	371	0.1	365	<.1	406	<.1	453	0.1	377	0.1	383
1995	0.1	341	<.1	356	0.2	412	0.1	354	0.2	377	0.1	377	<.1	352	<.1	339	0.1	375	0.1	373
1996	<.1	371	0.1	347	0.2	398	0.1	386	0.3	363	0.1	373	0.1	365	<.1	469	0.1	360	0.1	369
1997	<.1	363	0.1	352	0.2	406	0.2	353	0.3	368	0.2	362	0.1	372	<.1	397	0.1	365	0.1	365

TABLE 2. (Cont.)

Species / Year	Sabine Lake		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
Southern flounder																				
1975	0.1	337	<.1	317	ND		0.1	323	0.1	250	0.1	309	0.2	380	0.1	448	0.1	338	0.1	342
1976	ND		<.1	365	0.5	321	0.1	296	0.2	363	0.1	304	0.3	351	0.1	347	0.1	389	0.1	348
1977	ND		0.2	331	0.3	342	<.1	322	0.2	312	0.2	368	0.1	383	<.1	491	0.1	353	0.1	342
1978	ND		0.1	359	0.1	354	<.1	310	0.1	310	0.1	377	0.2	372	0.1	354	0.1	335	0.1	352
1979	ND		<.1	348	0.1	331	0.1	338	0.2	388	0.1	336	0.1	347	0.1	396	0.2	366	0.2	363
1980	ND		0.2	345	0.3	369	0.2	330	0.1	325	0.1	359	0.2	367	0.1	363	0.2	400	0.2	354
1981	ND		0.1	326	0.1	351	0.1	335	0.1	311	0.1	356	0.1	348	0.1	387	0.1	358	0.1	346
1982	ND		0.2	345	0.3	354	0.1	350	0.2	311	0.1	360	0.1	353	0.1	349	0.2	354	0.2	346
1983	ND		0.1	348	0.2	350	0.1	324	0.2	342	0.1	335	0.1	367	0.1	345	0.1	389	0.1	351
1984	ND		0.1	341	0.3	364	0.1	328	0.1	322	0.1	323	0.1	328	0.2	326	0.1	293	0.1	326
1985	ND		0.1	340	0.2	370	0.1	333	0.1	330	0.1	336	0.1	337	0.2	347	0.2	331	0.1	339
1986	0.1	299	0.1	363	0.1	376	0.1	346	0.1	377	<.1	348	0.1	371	0.1	368	0.2	363	0.1	361
1987	0.1	335	0.1	336	0.1	350	0.1	308	0.1	345	0.1	394	0.1	337	<.1	381	0.1	402	0.1	351
1988	0.1	346	0.1	350	0.2	353	0.1	365	0.1	342	0.1	372	<.1	350	<.1	419	0.1	387	0.1	363
1989	0.1	324	0.1	349	0.2	362	0.1	328	0.1	353	0.1	342	<.1	336	<.1	392	0.1	382	0.1	352
1990	<.1	325	0.1	326	0.2	340	0.1	326	0.1	324	0.1	344	0.1	333	0.1	279	0.1	340	0.1	326
1991	<.1	313	0.1	354	0.1	371	0.1	332	0.1	352	0.1	366	0.1	354	0.1	384	0.1	365	0.1	360
1992	<.1	330	0.1	356	0.3	375	0.1	352	<.1	370	0.1	385	0.1	379	<.1	461	0.1	386	0.1	374
1993	<.1	350	0.1	379	0.2	426	0.1	364	0.1	395	0.1	411	0.1	377	<.1	352	0.1	387	0.1	388
1994	<.1	373	0.1	361	0.2	401	0.1	357	0.1	378	0.1	386	0.1	383	<.1	416	<.1	393	0.1	377
1995	0.1	349	<.1	360	0.1	407	0.1	357	0.1	351	0.1	390	0.1	382	<.1	360	<.1	420	0.1	372
1996	<.1	393	0.1	381	0.1	371	<.1	353	0.1	372	<.1	363	0.1	367	<.1	381	<.1	356	0.1	370
1997	<.1	334	0.1	352	0.2	387	<.1	342	0.1	359	<.1	386	0.1	381	<.1	407	0.1	388	0.1	368
Atlantic croaker																				
1975	0.0		<.1	245	ND		0.0		0.1	312	0.2	338	0.4	321	0.1	314	0.1	343	0.1	323
1976	ND		0.2	262	0.1	248	0.3	263	0.4	296	0.2	314	0.6	320	0.5	329	0.3	326	0.3	301
1977	ND		0.1	291	0.1	275	0.2	274	0.2	290	0.8	307	0.6	350	0.7	345	0.2	340	0.3	319
1978	ND		0.1	274	0.1	248	0.2	255	0.1	242	0.5	314	0.4	296	0.4	283	<.1	331	0.2	288
1979	ND		<.1	271	0.2	248	0.1	287	0.2	270	0.2	303	0.5	326	0.1	316	0.2	331	0.2	305
1980	ND		0.2	284	0.1	262	0.2	261	0.1	264	0.3	320	1.7	320	0.1	302	0.2	298	0.3	303
1981	ND		0.2	279	0.2	254	0.1	273	0.2	268	0.7	328	0.8	320	0.2	323	0.4	320	0.3	310
1982	ND		0.4	282	0.4	256	0.1	277	0.2	278	0.4	328	1.0	327	0.4	338	0.3	330	0.4	310
1983	ND		0.3	275	0.4	261	0.2	263	0.5	286	0.3	309	1.0	320	0.1	312	0.5	314	0.4	299

TABLE 2. (Cont.)

Species / Year	Sabine Lake		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
Atlantic croaker (cont.)																				
1984	ND		0.2	274	0.2	259	0.2	259	0.2	252	0.1	261	0.5	274	0.1	264	0.2	270	0.2	268
1985	ND		0.6	272	0.5	258	0.1	254	0.1	261	0.3	268	0.6	279	0.2	307	0.3	281	0.3	274
1986	0.2	296	0.4	281	0.1	261	0.2	253	0.2	256	0.3	280	1.4	305	0.1	322	0.3	299	0.4	289
1987	0.1	287	0.8	288	0.1	252	0.3	253	<.1	253	0.2	283	1.5	323	0.1	321	0.3	322	0.4	298
1988	0.2	276	0.6	291	0.1	267	0.3	255	0.2	255	0.3	301	0.8	317	0.1	357	0.3	318	0.3	295
1989	0.1	284	0.6	271	0.2	257	0.2	250	0.2	262	0.2	266	0.3	317	<.1	324	0.1	308	0.2	273
1990	0.2	283	0.4	286	0.2	270	0.1	261	<.1	260	0.1	261	0.3	290	<.1	298	0.1	264	0.2	280
1991	0.1	271	0.2	274	0.1	290	0.2	260	0.2	251	0.2	262	0.4	283	<.1	269	1.4	279	0.3	275
1992	0.2	293	0.4	269	0.1	278	0.1	258	0.1	268	0.3	278	1.0	299	0.1	328	0.7	291	0.3	286
1993	0.1	286	1.4	273	0.2	276	0.1	265	0.2	267	0.1	281	1.0	313	<.1	306	0.3	300	0.5	282
1994	0.1	277	0.3	283	0.1	295	0.1	270	0.2	265	0.1	293	1.0	310	0.1	336	0.1	324	0.2	294
1995	0.1	272	0.4	284	0.3	301	0.1	271	0.3	272	0.4	285	0.6	343	0.1	331	0.1	321	0.3	297
1996	0.1	278	0.5	268	0.1	286	0.3	260	0.5	279	0.3	281	0.5	311	<.1	296	0.1	332	0.3	279
1997	0.2	282	0.5	2766	0.1	287	0.2	260	0.3	266	0.2	282	0.4	306	0.1	319	0.2	300	0.3	280
Gafftopsail catfish																				
1975	<.1	530	0.0		ND		0.1	571	<.1	493	<.1	552	0.1	575	0.0		0.0		<.1	567
1976	ND		0.1	482	0.0		0.2	526	0.4	498	0.1	587	<.1	475	0.0		0.0		0.1	509
1977	ND		<.1	516	0.0		<.1	499	0.2	526	<.1	385	<.1	600	0.1	529	0.0		<.1	516
1978	ND		0.0		0.0		<.1	514	<.1	543	0.0		0.1	551	0.0		0.0		<.1	534
1979	ND		0.0		0.2	542	0.0		0.1	499	<.1	533	0.0		0.0		<.1	282	<.1	511
1980	ND		0.1	550	0.0		<.1	478	0.3	509	0.1	522	0.1	517	0.0		0.0		0.1	525
1981	ND		0.1	492	0.0		<.1	505	0.1	542	0.1	511	0.1	523	0.0		<.1	379	0.1	507
1982	ND		<.1	423	<.1	616	0.1	520	0.3	527	0.1	533	0.1	545	<.1	541	0.0		0.1	517
1983	ND		<.1	492	0.1	473	<.1	498	0.3	514	0.1	544	0.1	532	0.0		<.1	408	0.1	514
1984	ND		<.1	517	0.1	474	0.1	510	0.3	507	0.1	521	<.1	488	0.0		<.1	315	0.1	509
1985	ND		0.1	525	0.1	482	0.1	498	0.1	546	0.1	556	0.1	519	<.1	556	<.1	511	0.1	528
1986	0.1	462	<.1	521	0.1	473	<.1	474	0.2	485	0.1	532	0.1	514	0.0		<.1	356	0.1	495
1987	<.1	423	0.1	491	0.1	527	0.1	512	<.1	519	0.1	542	<.1	528	0.0		<.1	390	<.1	514
1988	<.1	370	<.1	515	<.1	534	0.2	521	0.1	544	0.1	538	0.1	521	<.1	495	<.1	325	0.1	525
1989	<.1	321	<.1	480	<.1	485	0.2	509	0.1	549	0.1	547	0.1	384	0.0		<.1	358	0.1	524
1990	<.1	465	0.1	504	0.1	499	0.2	499	0.2	509	0.1	583	0.1	549	<.1	598	<.1	429	0.1	513
1991	<.1	469	<.1	502	0.1	518	0.1	476	<.1	562	<.1	569	<.1	472	0.0		<.1	299	<.1	513
1992	<.1	464	0.1	444	0.1	556	0.1	519	0.1	565	<.1	541	<.1	496	<.1	495	<.1	406	0.1	508

TABLE 2. (Cont.)

Species / Year	Sabine Lake		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
Gafftopsail catfish (cont.)																				
1993	0.0		0.1	513	0.1	566	0.1	501	0.3	538	<.1	585	0.1	473	0.0		<.1	414	0.1	524
1994	<.1	409	0.1	441	0.1	501	0.2	516	0.2	541	0.1	561	0.1	511	0.0		<.1	419	0.1	509
1995	<.1	380	0.1	408	0.2	511	0.2	503	0.3	522	0.1	565	0.1	462	0.0		<.1	340	0.1	498
1996	<.1	490	0.1	422	<.1	504	0.1	483	0.2	517	<.1	494	0.1	551	0.0		<.1	322	0.1	490
1997	<.1	417	0.3	462	0.1	529	0.1	477	0.2	496	0.1	507	<.1	392	0.0		<.1	377	0.1	474
Gulf menhaden																				
1975	0.0		0.5	272	ND		1.7	302	0.4	221	0.2	307	0.5	284	0.3	280	0.1	312	0.5	286
1976	ND		2.7	240	<.1	270	0.3	246	0.3	275	0.1	267	0.5	275	0.2	304	0.1	275	0.8	255
1977	ND		3.0	246	<.1	248	0.2	244	0.1	240	<.1	237	2.0	254	1.4	258	0.1	211	1.1	249
1978	ND		0.6	249	0.5	249	0.1	241	0.1	239	0.6	242	1.4	250	0.2	254	0.0		0.4	248
1979	ND		0.1	249	0.1	231	0.4	250	<.1	235	0.1	251	0.3	251	0.1	261	0.1	294	0.2	252
1980	ND		0.3	253	0.0		<.1	260	0.1	255	0.1	245	<.1	243	0.6	249	0.1	325	0.2	254
1981	ND		0.7	259	<.1	260	0.1	246	0.1	242	0.1	238	0.3	255	0.7	262	0.1	273	0.3	258
1982	ND		0.6	251	<.1	310	<.1	246	0.1	243	<.1	238	0.8	255	0.1	264	<.1	239	0.2	252
1983	ND		1.7	257	0.1	248	0.1	249	0.2	239	0.2	246	0.2	258	<.1	290	<.1	250	0.5	255
1984	ND		1.0	256	0.2	255	0.4	248	0.4	246	0.6	251	0.5	284	0.2	273	0.2	295	0.5	259
1985	ND		1.5	249	<.1	233	0.1	254	0.1	249	0.1	263	0.5	260	0.2	281	0.1	279	0.5	253
1986	0.2	246	1.5	244	0.1	233	0.3	239	0.1	244	0.2	249	0.8	263	<.1	249	<.1	262	0.5	247
1987	0.1	244	1.8	250	0.0		0.1	244	<.1	278	<.1	250	0.2	259	<.1	256	<.1	278	0.4	250
1988	0.2	268	0.9	244	<.1	206	0.3	233	0.1	241	<.1	252	0.1	264	<.1	249	0.1	317	0.3	247
1989	0.2	253	0.8	245	<.1	236	0.2	231	<.1	240	<.1	276	0.1	252	0.0		<.1	253	0.2	244
1990	0.1	256	1.3	253	<.1	247	0.6	224	<.1	251	0.1	214	<.1	294	0.0		<.1	226	0.4	247
1991	0.3	255	1.4	257	0.0		<.1	217	0.1	239	<.1	229	0.2	256	<.1	287	<.1	240	0.3	256
1992	<.1	299	1.3	257	<.1	232	0.1	239	0.1	245	<.1	257	0.1	271	<.1	266	0.1	237	0.3	256
1993	0.4	283	1.0	254	<.1	255	0.2	269	<.1	300	0.0		0.1	239	<.1	281	0.3	301	0.3	262
1994	0.2	240	0.5	254	<.1	210	0.1	249	<.1	266	<.1	268	0.2	256	<.1	96	<.1	282	0.1	254
1995	0.2	250	2.5	254	<.1	237	0.1	245	0.3	256	<.1	268	0.1	230	<.1	271	<.1	316	0.6	254
1996	0.1	260	2.3	254	<.1	125	0.1	235	0.1	246	<.1	264	0.1	254	<.1	238	<.1	276	0.5	254
1997	0.1	254	1.9	255	0.0		0.1	254	<.1	259	<.1	245	0.3	278	<.1	237	<.1	295	0.4	256
Striped mullet																				
1975	<.1	390	0.3	331	ND		0.4	347	0.6	322	2.5	328	1.0	382	0.3	358	0.5	345	0.7	339
1976	ND		0.3	346	0.2	320	0.3	349	1.7	331	0.5	360	0.3	342	0.6	402	2.0	397	0.7	367

TABLE 2. (Cont.)

Species / Year	Sabine Lake		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
Striped mullet (cont.)																				
1977	ND		0.2	345	0.2	380	0.4	330	0.9	343	0.3	321	0.4	371	0.3	396	0.6	354	0.4	348
1978	ND		0.2	423	0.6	330	0.7	342	0.5	322	1.1	336	0.1	336	0.1	364	0.3	387	0.4	347
1979	ND		0.1	351	0.1	338	0.3	340	0.7	344	0.7	344	0.3	353	0.6	410	0.3	365	0.4	357
1980	ND		0.2	363	<.1	319	0.2	343	0.6	357	0.6	357	0.3	340	0.3	360	0.5	346	0.3	353
1981	ND		0.1	395	0.1	349	0.1	332	0.6	341	0.5	334	0.3	353	0.3	364	0.9	363	0.4	352
1982	ND		0.2	376	0.4	329	0.3	330	0.4	341	0.8	331	0.2	345	0.1	348	0.4	372	0.4	347
1983	ND		0.2	370	0.2	335	0.2	339	0.3	334	0.5	350	0.3	347	0.3	383	0.6	375	0.3	358
1984	ND		0.4	362	0.7	328	0.3	331	0.5	350	0.6	342	0.4	357	0.5	376	0.4	356	0.5	352
1985	ND		0.2	338	0.2	326	0.2	323	0.5	355	0.3	343	0.2	342	0.3	397	0.3	375	0.3	354
1986	<.1	328	0.1	377	0.3	328	0.1	337	0.4	369	0.2	356	0.2	358	0.1	370	0.7	359	0.2	359
1987	<.1	325	0.2	375	0.4	333	0.7	319	1.1	360	0.6	348	0.3	338	0.2	391	0.4	382	0.5	351
1988	0.1	331	0.2	362	0.4	344	0.4	326	0.4	347	0.4	365	0.3	370	0.4	409	0.4	396	0.3	366
1989	<.1	329	0.2	349	0.2	334	0.2	328	0.3	350	0.4	348	0.2	359	0.3	394	0.5	366	0.3	357
1990	0.1	334	0.4	341	0.3	368	0.2	344	0.8	369	0.7	358	0.2	353	0.2	387	0.4	383	0.4	361
1991	0.1	331	0.2	333	0.6	366	0.1	343	0.8	364	0.5	351	0.3	368	0.1	383	0.4	401	0.3	363
1992	<.1	328	0.3	376	0.3	387	0.4	330	0.2	350	0.7	364	0.4	360	0.2	389	0.3	383	0.4	362
1993	0.6	328	0.9	364	0.7	377	0.5	352	0.7	374	0.9	365	0.4	376	0.6	422	0.4	402	0.7	373
1994	0.1	353	0.6	372	0.4	384	0.6	347	0.3	358	0.7	365	0.2	379	0.1	398	0.2	400	0.4	367
1995	0.2	353	0.4	371	0.3	397	0.4	356	0.2	347	0.5	370	0.3	368	0.4	421	0.2	375	0.3	374
1996	0.1	358	0.3	358	0.2	401	0.4	355	0.4	368	0.4	360	0.3	393	0.8	432	0.3	403	0.4	385
1997	0.1	347	0.4	356	0.3	408	1.5	343	0.4	374	0.8	377	0.4	395	0.5	436	0.2	392	0.6	368
Total finfishes																				
1975	3.0	383	5.1	396	ND		6.6	355	4.9	339	7.9	345	5.7	343	4.3	374	4.8	394	5.5	365
1976	ND		7.2	334	4.0	385	4.9	388	9.1	365	5.0	363	5.0	349	5.1	383	11.1	400	6.8	369
1977	ND		6.2	334	3.2	362	5.4	389	6.2	348	3.6	344	5.8	326	5.2	343	6.5	381	5.5	353
1978	ND		4.0	342	4.0	325	5.0	359	5.1	383	5.2	341	3.8	322	3.6	358	3.1	395	4.3	355
1979	ND		3.5	367	2.0	372	4.3	350	5.6	368	3.8	372	3.5	327	2.6	367	3.5	393	3.7	365
1980	ND		4.0	371	2.9	375	3.3	346	6.1	342	4.8	350	5.0	336	2.5	354	4.2	390	4.3	357
1981	ND		4.2	357	3.3	355	3.0	384	4.8	358	4.4	375	4.8	364	3.1	357	5.5	388	4.2	369
1982	ND		6.2	346	6.2	354	3.7	372	5.1	360	4.5	366	5.1	338	3.5	363	5.9	381	5.0	360
1983	ND		6.0	350	6.2	341	4.0	378	5.3	352	3.9	396	5.8	356	3.0	362	5.5	399	4.9	367
1984	ND		6.5	364	5.7	379	4.4	369	3.9	362	3.8	399	4.2	347	3.1	373	4.2	406	4.6	373
1985	ND		7.1	335	4.5	366	3.7	380	4.2	376	3.3	396	4.0	358	3.4	362	4.6	390	4.6	364

TABLE 2. (Cont.)

Species / Year	Sabine Lake		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
Total finfishes (cont.)																				
1986	2.6	395	6.0	349	4.4	390	4.6	379	4.7	408	4.0	378	5.3	347	2.2	381	5.2	404	4.6	377
1987	2.2	430	5.8	334	4.7	390	5.0	323	5.2	428	3.3	391	4.9	353	1.6	406	4.6	444	4.4	374
1988	2.5	371	6.2	346	6.5	398	5.5	361	5.8	393	4.3	382	5.0	358	3.1	396	5.7	410	5.2	374
1989	2.2	394	6.8	363	5.2	387	4.3	361	5.6	402	4.7	374	5.4	388	2.9	417	5.2	408	5.0	382
1990	2.4	401	5.2	343	4.9	387	4.2	345	5.5	399	4.5	400	4.5	398	2.7	433	4.5	431	4.4	384
1991	3.1	389	5.4	341	5.4	376	4.9	362	6.5	389	4.9	373	6.3	371	4.0	397	7.6	389	5.5	372
1992	2.7	439	6.1	356	6.1	439	5.6	366	6.0	408	6.2	419	5.8	377	3.4	425	7.3	399	5.7	391
1993	2.7	379	6.9	347	7.1	457	5.8	380	7.5	430	6.4	455	7.3	394	6.3	443	7.9	425	6.7	407
1994	3.1	374	6.4	372	6.7	428	5.2	381	6.4	404	5.4	402	5.5	386	7.0	444	6.1	443	5.9	403
1995	3.9	391	7.1	333	7.2	417	6.0	361	5.9	374	6.4	383	5.8	403	6.5	443	5.7	435	6.2	383
1996	3.8	398	7.3	355	5.7	431	5.8	376	8.0	408	6.7	393	5.2	403	6.9	433	5.8	438	6.5	396
1997	4.0	400	7.4	357	4.9	452	6.0	363	5.6	391	5.7	416	4.0	401	5.9	432	5.1	433	5.8	393
Blue crab																				
1983	ND		0.1	136	0.3	153	0.1	151	0.1	138	0.2	146	0.2	146	0.3	146	0.3	146	0.2	144
1984	ND		0.1	151	0.1	140	0.1	147	0.1	147	0.2	145	0.2	141	0.2	138	0.2	148	0.1	145
1985	ND		0.1	149	0.1	154	<.1	142	0.1	139	0.1	141	0.1	143	0.2	147	0.1	148	0.1	145
1986	0.2	150	<.1	146	<.1	144	<.1	161	0.1	146	<.1	138	0.1	144	<.1	147	0.1	149	0.1	147
1987	0.2	154	0.1	140	0.1	158	0.2	154	0.3	153	0.1	158	0.1	157	0.3	157	0.1	152	0.2	153
1988	0.2	155	0.1	144	0.2	150	0.1	137	0.1	138	0.1	145	0.1	147	<.1	129	0.1	152	0.1	147
1989	0.1	157	<.1	136	<.1	144	<.1	139	<.1	133	<.1	148	<.1	159	0.0		0.1	152	<.1	143
1990	0.2	146	0.1	149	0.1	144	0.2	144	0.1	144	0.1	149	0.1	138	0.1	129	0.2	142	0.1	144
1991	0.1	152	<.1	151	0.1	152	0.1	131	0.2	150	<.1	136	0.1	153	0.1	139	0.2	148	0.1	146
1992	0.1	161	<.1	143	0.1	156	0.1	153	0.1	136	0.1	140	<.1	148	0.2	138	0.1	152	0.1	144
1993	0.1	169	<.1	145	0.1	150	<.1	156	<.1	146	<.1	160	0.1	155	<.1	157	<.1	142	<.1	153
1994	0.1	163	<.1	152	0.1	151	<.1	155	<.1	150	<.1	154	<.1	147	<.1	140	<.1	125	<.1	151
1995	0.1	158	<.1	146	0.1	151	<.1	127	0.1	154	<.1	144	<.1	150	<.1	124	0.1	136	<.1	142
1996	<.1	155	<.1	185	<.1	154	<.1	147	<.1	159	<.1	140	<.1	144	<.1	139	<.1	148	<.1	159
1997	0.1	160	<.1	142	0.1	156	<.1	152	<.1	161	<.1	159	0.1	149	0.2	149	0.1	139	0.1	149

TABLE 3. Annual mean catch rates (No./ha) and mean total lengths (mm) of selected fishes and shellfishes caught with 18.3-m bag seines by bay system during 1977-97. Blank indicates no measurement taken; ND = no data.

Species / Year	Sabine Lake		Galveston		East Matagorda		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	No./ha	Length	No./ha	Length
FINFISHES																				
Red drum																				
1977[a]	ND		20	35	ND		8	51	85	51	14	44	1	41	0		1	39	18	46
1978	ND		3	67	ND		4	43	13	51	4	94	3	67	11	58	17	52	7	58
1979	ND		17	62	ND		6	92	11	67	5	92	18	85	27	66	15	64	14	70
1980	ND		59	74	ND		8	68	28	50	5	88	16	75	4	82	15	72	23	70
1981	ND		26	52	ND		9	86	29	53	30	38	40	46	5	46	45	56	26	52
1982	ND		53	62	ND		9	76	19	102	26	103	21	62	1	55	16	89	24	76
1983	ND		47	67	11[b]	66	4	70	7	99	12	98	7	88	2	59	41	92	20[b]	78
1984	ND		13	66	6	70	2	105	12	56	4	100	4	80	2	52	4	73	6	69
1985	ND		3	131	10	106	7	96	7	114	19	82	9	67	1	61	17	69	9	86
1986	19	66	7	87	8	86	2	78	6	105	1	117	4	98	3	84	22	94	7	90
1987	6	99	45	58	47	61	16	88	15	89	9	59	7	71	2	117	32	63	21	66
1988	13	78	8	78	27	79	3	114	6	89	10	78	9	49	4	66	21	63	10	73
1989	61	44	3	59	24	47	4	92	10	82	8	65	4	83	1	54	18	69	9	63
1990	5	62	17	53	27	50	14	51	19	50	43	40	20	57	4	32	25	39	20	46
1991	6	97	14	73	30	53	30	81	36	79	25	61	28	72	5	88	43	61	24	71
1992	5	71	9	85	23	56	15	77	22	84	23	83	7	74	14	51	13	70	14	76
1993	11	73	28	58	40	48	11	66	17	58	13	60	12	73	9	53	23	62	18	60
1994	7	72	22	59	31	55	6	58	13	69	29	58	53	55	11	61	26	70	21	61
1995	20	69	12	48	18	54	7	69	15	76	15	62	26	62	7	86	29	62	15	63
1996	8	76	16	48	21	56	16	49	27	63	5	65	8	76	11	60	14	66	14	58
1997	11	74	12	76	39	63	17	68	16	62	9	76	13	82	6	113	15	85	13	75
Spotted seatrout																				
1977[a]	ND		34	87	ND		39	84	50	73	1	99	7	84	16	83	5	85	23	82
1978	ND		35	52	ND		6	86	11	69	8	50	4	59	14	93	2	52	14	61
1979	ND		37	79	ND		3	83	12	70	7	68	12	53	13	80	2	86	14	75
1980	ND		17	72	ND		3	84	21	71	11	74	11	79	3	56	<1	60	10	73
1981	ND		16	85	ND		7	110	9	68	13	70	12	65	4	73	6	84	10	80
1982	ND		37	82	ND		7	99	19	62	15	76	4	75	5	78	3	76	15	79
1983	ND		26	84	4[b]	101	7	73	8	72	14	81	4	79	5	101	4	80	11[b]	82
1984	ND		7	71	2	85	3	77	1	83	10	74	1	54	1	88	5	98	4	77
1985	ND		5	80	24	73	11	87	4	64	24	61	3	50	9	70	2	78	9	70
1986	2	67	2	85	17	66	5	71	5	78	12	60	4	68	1	72	2	58	5	68

TABLE 3. (Cont.)

Species / Year	Sabine Lake		Galveston		East Matagorda		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	No./ha	Length	No./ha	Length
Spotted seatrout (cont.)																				
1987	2	92	22	73	14	68	3	82	19	70	13	69	10	76	1	104	3	63	11	72
1988	7	88	6	88	14	75	5	96	7	67	28	68	7	65	5	65	3	87	9	74
1989	5	63	6	79	14	80	6	69	20	61	16	71	6	71	4	50	2	56	8	68
1990	3	69	5	56	10	74	8	66	8	61	14	61	13	65	2	54	<1	86	7	63
1991	1	67	16	63	13	71	15	70	34	59	20	65	8	72	6	63	2	59	14	64
1992	2	73	6	73	4	82	10	59	42	52	12	64	8	69	18	50	2	54	12	58
1993	5	84	6	61	19	71	6	62	15	54	12	68	7	69	14	59	7	49	9	61
1994	3	73	5	64	13	78	13	68	12	66	28	76	7	69	5	79	1	51	10	71
1995	17	70	5	77	23	76	17	63	16	77	33	68	5	89	19	73	3	75	14	71
1996	3	92	6	52	17	93	11	69	16	67	12	79	3	76	9	74	2	74	8	71
1997	3	96	15	61	17	76	13	64	16	66	29	73	9	67	8	74	2	60	13	68
Black drum																				
1977[a]	ND		0		ND		11	147	6	179	1	142	1	150	0		0		3	156
1978	ND		36	95	ND		9	112	22	110	2	165	1	122	4	106	0		13	102
1979	ND		40	83	ND		12	106	5	97	1	85	8	89	6	140	18	98	15	92
1980	ND		4	93	ND		4	102	0		2	100	2	75	3	95	1	142	2	97
1981	ND		12	122	ND		11	110	2	141	5	141	2	113	11	44	6	130	8	108
1982	ND		4	124	ND		5	138	9	90	7	94	1	109	<1	155	2	117	4	110
1983	ND		23	91	3[b]	123	3	118	1	132	2	145	2	108	2	107	<1	141	7[b]	98
1984	ND		8	108	1	103	3	156	0		1	140	0		1	82	<1	91	2	115
1985	ND		4	141	3	83	3	113	1	122	<1	124	1	68	6	86	0		2	112
1986	2	141	2	107	5	85	0		1	149	0		<1	96	2	68	1	145	1	110
1987	0		1	106	0		4	130	1	118	0		6	74	44	63	1	89	6	72
1988	2	146	5	107	5	94	6	126	2	132	2	128	2	112	8	90	2	158	4	114
1989	0		4	124	8	87	3	109	1	125	3	116	1	110	11	77	4	150	4	108
1990	3	128	4	99	41	75	14	117	6	123	2	127	15	64	833	45	7	126	102	49
1991	1	124	3	111	10	99	7	155	2	113	<1	174	<1	112	61	77	1	171	9	92
1992	<1	123	<1	142	3	114	1	146	3	23	0		3	70	6	59	4	118	2	80
1993	2	129	1	109	3	99	<1	122	<1	158	<1	99	1	67	1	39	<1	203	1	94
1994	2	119	5	78	31	84	13	71	8	96	6	74	4	78	4	38	1	101	6	76
1995	1	160	1	119	4	76	3	100	3	115	4	111	1	99	77	72	1	161	10	78
1996	1	149	5	77	2	104	1	95	1	86	1	77	<1	106	51	63	1	131	7	68
1997	2	108	8	95	5	96	1	115	3	88	11	75	2	99	192	65	1	115	26	69

TABLE 3. (Cont.)

Species / Year	Sabine Lake		Galveston		East Matagorda		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	No./ha	Length	No./ha	Length
Sheepshead																				
1977[a]	ND		0		ND		1	128	0		0		0		0		0		<1	128
1978	ND		0		ND		<1	86	<1	68	1	54	1	59	1	122	1	61	1	70
1979	ND		15	66	ND		1	94	6	63	3	56	13	41	0		1	50	6	61
1980	ND		1	114	ND		1	163	1	41	1	51	0		0		1	60	1	86
1981	ND		1	158	ND		2	68	0		1	95	1	41	0		1	92	1	101
1982	ND		1	174	ND		0		3	67	<1	62	<1	50	0		0		1	90
1983	ND		1	23	<1[b]	93	<1	50	1	102	<1	67	<1	99	0		3	52	1[b]	52
1984	ND		0		<1	178	<1	90	1	30	<1	36	<1	30	0		0		<1	43
1985	ND		2	20	1	58	1	157	3	39	1	35	0		0		2	57	1	43
1986	0		<1	114	<1	32	<1	203	1	48	1	50	0		0		1	73	<1	80
1987	0		0		1	91	<1	94	<1	53	0		0		0		1	47	<1	64
1988	0		<1	60	2	69	<1	124	2	58	1	55	3	35	0		<1	40	1	56
1989	1	91	<1	59	1	35	1	116	25	40	0		0		0		<1	89	3	44
1990	<1	153	<1	126	<1	36	<1	79	<1	85	<1	115	0		0		1	48	<1	86
1991	<1	146	1	55	0		<1	101	1	81	<1	29	0		0		<1	70	<1	69
1992	<1	97	0		1	33	1	36	5	39	<1	66	<1	40	0		4	63	1	49
1993	<1	50	<1	147	<1	47	0		1	98	<1	36	<1	19	<1	45	<1	51	<1	77
1994	<1	106	<1	76	<1	131	5	54	2	81	1	33	1	34	<1	24	0		1	54
1995	<1	74	1	86	0		2	71	1	150	2	69	<1	51	<1	32	2	59	1	76
1996	<1	55	<1	37	3	38	<1	167	3	42	1	54	<1	38	0		1	89	1	54
1997	<1	166	1	93	1	77	<1	108	2	67	1	66	1	43	<1	44	<1	82	1	75
Southern flounder																				
1977[a]	ND		0		ND		1	171	0		0		0		0		0		<1	171
1978	ND		9	40	ND		<1	43	3	37	<1	98	1	44	<1	128	1	46	3	42
1979	ND		1	85	ND		<1	135	2	85	0		1	122	2	46	1	38	1	71
1980	ND		10	54	ND		1	38	2	55	0		3	64	1	43	5	38	4	51
1981	ND		5	57	ND		7	79	2	53	2	90	1	67	1	66	11	55	4	64
1982	ND		9	67	ND		3	82	6	56	18	37	2	62	1	53	13	39	8	51
1983	ND		9	46	1[b]	75	2	54	3	58	6	39	1	34	0		2	45	4[b]	46
1984	ND		2	83	2	69	1	78	1	67	3	62	3	45	1	86	1	64	2	69
1985	ND		4	58	5	78	2	112	1	43	7	55	5	55	<1	71	2	67	3	64
1986	2	83	4	83	6	70	19	66	2	78	4	64	2	54	1	79	12	44	6	63
1987	2	47	21	51	9	54	1	62	3	44	1	103	1	37	<1	69	3	56	6	53
1988	15	66	14	61	3	76	3	85	3	69	5	48	1	65	<1	60	5	60	6	63
1989	10	74	3	62	10	60	3	67	10	51	24	38	8	53	<1	106	2	62	7	50
1990	12	68	22	59	12	55	15	48	11	50	3	55	12	47	4	67	9	51	12	54

TABLE 3. (Cont.)

Species / Year	Sabine Lake		Galveston		East Matagorda		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	No./ha	Length	No./ha	Length
Southern flounder (cont.)																				
1991	7	58	5	34	7	56	3	53	2	94	1	55	2	46	<1	27	2	60	3	49
1992	7	66	3	41	3	67	2	34	3	48	1	41	5	44	<1	22	<1	56	2	46
1993	4	95	6	56	5	45	6	46	3	47	2	57	3	69	<1	130	2	54	4	55
1994	2	94	4	62	3	31	3	58	3	46	5	54	6	42	<1	34	2	78	3	56
1995	4	65	4	59	5	63	3	55	1	42	6	41	5	47	1	58	<1	93	3	53
1996	5	85	9	45	5	88	8	55	9	50	3	53	8	48	1	72	4	54	6	52
1997	4	129	8	61	9	62	8	581	6	61	3	45	7	48	2	63	3	34	6	56
Atlantic croaker																				
1977[a]	ND		20	96	ND		0		0		1	36	11	50	1	181	4	83	6	88
1978	ND		320	61	ND		239	59	10	100	37	73	1	30	11	86	29	38	121	61
1979	ND		463	52	ND		109	74	52	49	7	76	25	65	3	92	221	44	162	53
1980	ND		1,085	55	ND		82	69	17	89	16	56	24	49	1	40	198	42	290	54
1981	ND		528	57	ND		24	94	26	73	26	42	20	55	1	112	32	46	136	58
1982	ND		1,812	61	ND		165	74	67	67	142	61	32	54	0		49	53	471	62
1983	ND		888	55	56[b]	79	236	66	67	80	63	62	6	61	2	86	49	51	254[b]	58
1984	ND		815	59	210	64	483	60	25	83	155	68	1,160	61	4	102	133	59	404	60
1985	ND		242	64	121	63	299	72	13	88	46	78	4	76	11	87	87	42	122	66
1986	126	74	148	77	198	68	2,138	52	17	99	12	72	12	78	<1	89	62	57	364	55
1987	79	70	335	54	110	56	207	78	33	47	9	81	4	40	<1	60	10	62	113	61
1988	154	68	485	53	160	51	60	80	13	66	3	50	8	50	0		15	63	125	56
1989	111	56	36	77	190	45	22	56	9	49	18	62	10	61	0		9	38	27	59
1990	97	67	316	51	117	46	82	68	24	32	58	65	14	59	2	78	46	62	103	55
1991	208	57	635	52	343	47	1,035	58	156	57	63	63	35	66	11	36	169	46	353	55
1992	225	56	505	47	450	47	626	48	430	47	215	44	95	50	13	54	157	44	326	47
1993	232	64	358	50	421	44	216	47	48	47	25	66	25	53	2	67	195	40	165	48
1994	255	52	229	49	186	58	302	43	59	46	74	39	25	37	6	44	123	46	143	46
1995	357	57	112	48	247	50	110	57	37	59	36	69	24	35	2	58	179	41	95	50
1996	765	59	453	47	290	50	147	63	37	54	35	60	6	44	3	65	112	44	179	51
1997	248	49	234	59	286	52	176	50	52	56	57	66	4	56	6	71	223	46	136	54
Sand seatrout																				
1977[a]	ND		0		ND		11	61	0		0		0		0		0		2	61
1978	ND		13	58	ND		3	59	0		0		<1	54	0		0		4	58
1979	ND		35	58	ND		14	70	2	75	<1	33	1	77	0		0		10	61
1980	ND		8	61	ND		7	82	<1	64	<1	89	0		0		0		3	69
1981	ND		21	60	ND		2	72	0		0		1	76	0		<1	78	5	61

TABLE 3. (Cont.)

Species / Year	Sabine Lake		Galveston		East Matagorda		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	No./ha	Length	No./ha	Length
Sand seatrout (cont.)																				
1982	ND		47	57	ND		12	67	<1	35	<1	76	<1	73	0		<1	65	13	58
1983	ND		47	53	10[b]	59	30	64	<1	47	1	70	2	53	0		0		15[b]	56
1984	ND		49	55	7	66	22	54	0		0		0		0		8	41	15	54
1985	ND		11	60	8	59	12	71	0		<1	67	1	82	0		<1	60	5	65
1986	6	71	9	50	4	60	9	64	0		0		<1	57	0		0		3	57
1987	4	63	16	58	11	61	14	65	1	61	0		0		0		0		6	61
1988	5	54	5	53	38	40	6	66	<1	69	0		0		0		0		3	52
1989	9	54	43	55	7	66	4	68	<1	31	0		<1	106	0		0		10	56
1990	24	52	75	46	10	59	13	56	1	36	0		0		0		0		19	47
1991	7	48	76	55	25	59	39	56	<1	76	3	50	2	42	0		<1	65	23	55
1992	7	54	30	53	10	52	36	54	0	0	<1	81	1	61	0		0		12	53
1993	7	58	53	48	19	53	88	53	4	64	<1	96	1	57	0		2	54	26	51
1994	4	61	34	48	16	70	29	56	<1	70	<1	64	0		0		<1	53	12	52
1995	14	50	59	44	53	38	37	59	<1	56	<1	64	0		0		1	57	20	48
1996	16	63	18	50	20	51	6	57	0		0		1	62	0		0		6	52
1997	11	48	27	54	12	49	36	52	2	55	2	64	<1	71	0		<1	38	12	53
Gulf menhaden																				
1977[a]	ND		21	76	ND		0		0		0		1	58	0		0		5	76
1978	ND		533	31	ND		3,963	47	169	64	3,310	44	1	41	44	42	71	29	1,249	44
1979	ND		122	53	ND		867	43	0		817	38	335	38	6	37	1	31	312	41
1980	ND		14,717	46	ND		115	50	24	52	48	30	7	49	4	40	54	31	3,343	46
1981	ND		196	45	ND		348	51	52	41	355	48	8	41	721	42	11	38	246	45
1982	ND		4,788	50	ND		820	48	1,008	37	137	33	1,068	36	9	31	130	32	1,466	47
1983	ND		4,971	66	1,324[b]	44	809	44	67	42	16	34	619	33	2	30	5	47	1,312[b]	62
1984	ND		1,839	44	470	48	1,260	45	1,084	42	866	39	553	52	128	49	69	56	928	44
1985	ND		486	42	243	43	3,819	50	868	45	48	39	122	37	62	44	20	49	819	48
1986	3,049	48	3,024	38	1,502	37	10,076	53	612	36	27	34	11	46	36	44	12	36	2,333	48
1987	633	47	264	50	755	49	3,550	60	35	40	68	36	11	34	32	63	18	27	637	57
1988	600	40	2,625	45	438	41	363	60	<1	43	80	30	<1	44	14	31	81	35	660	45
1989	526	48	781	42	386	51	187	45	53	37	43	37	11	43	2	45	71	39	245	43
1990	774	49	5,106	43	640	44	527	56	797	71	943	35	869	32	21	38	<1	38	1,487	44
1991	270	41	4,298	40	1,258	42	3,044	42	296	42	569	41	244	38	123	36	0		1,533	41
1992	593	45	6,025	37	291	36	1,919	38	1,810	35	259	33	43	46	4	30	21	40	1,815	37
1993	1,878	48	7,341	40	509	36	492	46	191	38	634	66	158	38	13	39	108	35	1,827	42
1994	72	51	5,203	48	222	41	418	57	138	39	263	33	15	45	32	33	<1	49	1,212	48
1995	399	46	6,155	39	2,382	50	718	36	140	48	373	37	83	40	133	34	4	48	1,570	39

TABLE 3. (Cont.)

Species / Year	Sabine Lake		Galveston		East Matagorda		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	No./ha	Length	No./ha	Length
Gulf menhaden (cont.)																				
1996	1,489	44	7,928	39	554	36	1,484	40	202	33	179	41	459	31	68	30	3	32	2,039	39
1997	371	45	1,733	54	551	43	2,297	36	473	46	142	40	472	51	56	51	224	31	875	45
Pinfish																				
1977[a]	ND		0		ND		32	114	24	105	22	105	66	93	167	102	13	101	39	103
1978	ND		116	55	ND		24	61	77	75	54	74	133	69	41	84	7	64	65	65
1979	ND		73	75	ND		43	79	60	79	47	85	81	61	13	122	1	107	47	77
1980	ND		151	38	ND		16	50	363	57	167	66	250	61	17	88	153	59	152	55
1981	ND		270	55	ND		68	69	131	70	107	85	267	67	40	84	132	75	151	66
1982	ND		144	67	ND		34	66	590	55	448	67	265	62	100	73	349	57	260	61
1983	ND		138	65	61[b]	79	115	80	510	49	642	68	533	66	25	82	211	68	279[b]	64
1984	ND		247	59	180	64	107	71	172	66	471	62	214	54	146	79	120	77	214	64
1985	ND		362	55	401	65	209	71	396	55	274	66	234	67	133	68	261	66	280	62
1986	64	74	183	61	676	64	117	58	161	66	696	59	304	58	245	62	329	63	287	61
1987	8	72	50	64	227	57	44	68	442	63	321	67	463	58	42	56	339	64	206	63
1988	7	84	128	61	373	62	43	77	246	63	589	62	983	54	312	59	660	60	357	60
1989	24	75	80	62	359	58	308	53	607	61	300	63	361	57	60	70	251	61	254	60
1990	37	75	182	58	499	61	251	65	552	52	609	55	566	57	392	62	660	60	415	58
1991	8	79	138	58	307	60	39	68	248	65	119	61	435	63	240	69	696	57	243	61
1992	12	73	96	46	371	56	67	49	431	53	545	59	475	50	174	59	531	58	293	55
1993	27	78	309	49	139	59	150	53	368	60	564	56	482	54	307	59	452	60	344	56
1994	9	71	164	50	285	66	125	57	174	58	463	58	411	58	102	56	358	56	237	57
1995	12	86	159	49	284	52	73	51	308	59	333	64	326	54	165	59	247	60	212	57
1996	77	74	88	51	71	53	35	53	243	50	248	59	420	51	755	59	471	54	272	55
1997	9	75	56	70	200	59	33	61	240	65	371	56	323	62	250	64	395	55	207	60
Spot																				
1977[a]	ND		56	100	ND		23	118	0		2	170	12	100	0		1	125	18	105
1978	ND		407	52	ND		182	49	361	48	80	55	310	47	227	59	149	52	253	51
1979	ND		352	42	ND		21	64	201	44	58	60	210	55	103	70	57	59	156	49
1980	ND		269	57	ND		76	56	256	51	101	61	95	58	86	59	165	48	160	55
1981	ND		331	52	ND		154	57	135	64	97	54	121	61	115	63	220	67	185	58
1982	ND		404	62	ND		143	58	467	52	623	54	225	60	180	58	340	66	350	58
1983	ND		459	57	50[b]	64	95	58	169	47	350	56	135	55	57	60	526	63	273[b]	58
1984	ND		238	53	96	61	146	58	247	46	659	56	564	58	493	66	948	67	433	60
1985	ND		179	62	158	59	216	59	274	44	254	64	227	55	80	77	169	54	197	58
1986	118	65	135	68	319	56	825	51	102	58	258	51	160	60	114	55	614	54	314	54

TABLE 3. (Cont.)

Species / Year	Sabine Lake		Galveston		East Matagorda		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	No./ha	Length	No./ha	Length
Spot (cont.)																				
1987	19	80	264	60	383	60	83	58	203	49	476	58	359	49	17	70	307	47	239	55
1988	44	82	229	69	210	66	116	64	132	54	361	59	158	65	212	54	270	59	209	62
1989	96	52	87	63	256	58	173	59	264	62	253	53	158	62	271	50	151	64	183	58
1990	16	70	222	62	525	54	330	57	691	51	566	52	831	49	684	57	854	55	525	54
1991	22	65	270	56	304	59	131	49	198	69	295	53	279	52	174	53	950	51	314	54
1992	27	70	211	55	89	61	63	53	194	59	164	53	387	45	219	58	347	54	204	54
1993	35	80	164	56	288	55	123	53	149	50	185	59	281	58	221	62	341	53	197	56
1994	55	78	369	49	161	61	99	61	127	56	310	62	250	59	66	60	369	54	231	55
1995	15	104	171	50	199	56	254	49	77	65	191	59	303	53	145	59	218	57	184	55
1996	185	69	827	43	394	44	340	48	321	50	245	55	524	46	223	54	272	56	417	48
1997	5	102	89	67	174	57	169	47	69	59	229	59	481	55	451	58	782	46	280	53
Striped mullet																				
1977[a]	ND		31	140	ND		129	106	129	117	27	132	179	156	15	158	62	103	74	126
1978	ND		56	120	ND		26	124	126	66	68	103	121	76	53	94	105	81	74	90
1979	ND		135	89	ND		93	99	273	66	152	103	202	135	16	102	383	53	174	81
1980	ND		90	117	ND		15	107	41	121	61	102	49	88	57	70	95	85	61	100
1981	ND		229	57	ND		41	92	249	84	205	81	79	85	31	63	161	98	152	76
1982	ND		128	66	ND		553	118	179	77	177	85	29	110	23	86	43	94	174	98
1983	ND		85	94	62[b]	104	26	136	57	64	110	106	37	61	15	99	44	84	57[b]	94
1984	ND		52	95	33	110	34	53	69	73	102	57	142	52	154	68	255	96	106	77
1985	ND		75	110	199	89	49	92	22	134	95	58	22	62	70	53	119	81	72	84
1986	84	103	34	134	20	144	23	86	37	93	22	91	62	67	23	57	41	66	35	92
1987	48	98	244	75	60	89	33	96	63	115	127	73	141	56	94	37	72	103	116	76
1988	42	80	115	115	69	90	44	64	16	116	84	50	189	49	64	62	27	125	74	80
1989	61	68	41	96	40	61	24	82	10	147	77	47	131	49	61	33	78	58	55	61
1990	43	88	194	71	151	81	21	71	47	100	156	41	322	44	226	59	114	89	144	63
1991	83	78	234	80	162	60	79	65	73	97	40	88	138	41	283	50	49	126	133	71
1992	23	94	149	79	97	78	52	78	72	81	132	80	141	50	70	53	44	99	95	75
1993	74	84	105	83	84	74	41	77	62	71	67	86	133	49	70	36	39	78	74	71
1994	56	75	102	66	29	70	59	75	35	92	53	66	137	48	62	47	221	42	91	57
1995	63	99	45	71	73	84	23	70	20	123	57	45	19	59	20	57	29	49	35	68
1996	92	70	166	43	217	44	30	67	7	135	17	73	131	55	24	75	36	58	71	52
1997	37	82	120	66	143	79	62	81	72	94	118	90	151	48	94	73	34	111	92	75

TABLE 3. (Cont.)

Species / Year	Sabine Lake		Galveston		East Matagorda		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	No./ha	Length	No./ha	Length
Total finfishes																				
1977[a]	ND		959	59	ND		489	88	3,106	52	1,383	64	2,788	60	1,780	67	830	59	1,464	61
1978	ND		4,103	53	ND		4,855	67	1,671	65	5,038	64	1,515	66	1,282	62	908	54	3,030	61
1979	ND		3,149	60	ND		1,635	71	3,375	57	3,096	60	2,191	70	1,354	69	2,368	72	2,518	64
1980	ND		18,543	86	ND		632	77	1,879	67	1,407	68	1,490	67	2,116	63	1,070	59	5,241	82
1981	ND		3,334	63	ND		1,093	83	1,781	61	2,020	66	2,213	64	1,792	54	1,267	70	2,028	65
1982	ND		9,007	68	ND		2,077	78	4,321	56	5,021	57	2,596	66	1,355	58	1,342	61	4,194	65
1983	ND		8,725	71	2,078[b]	63	1,857	80	2,147	55	4,059	63	2,160	59	734	61	1,378	68	3,528[b]	68
1984	ND		4,644	59	1,617	66	2,625	62	2,687	58	3,574	62	3,353	52	1,817	60	1,906	71	3,044	60
1985	ND		1,995	63	1,921	68	5,152	82	2,200	65	2,514	60	1,389	56	1,534	55	1,458	60	2,383	68
1986	3,776	69	3,916	71	3,329	63	14,493	73	1,849	60	2,294	57	841	62	1,554	51	1,672	61	4,146	69
1987	1,153	67	2,231	64	2,484	63	4,312	79	1,344	65	2,030	58	1,357	55	1,012	46	1,575	60	2,073	66
1988	1,153	62	4,347	71	2,024	63	913	83	1,391	58	3,150	54	2,344	56	2,271	50	2,144	65	2,464	63
1989	1,243	62	2,157	67	2,097	59	1,362	69	1,997	62	2,079	55	2,006	56	2,360	45	2,341	56	2,010	59
1990	1,319	67	7,186	58	2,951	59	2,106	68	3,470	57	3,968	55	3,913	52	5,385	48	2,993	59	4,209	57
1991	719	62	7,525	62	3,452	63	4,982	69	3,090	63	2,300	59	2,273	60	2,971	50	4,012	54	4,138	61
1992	1,143	56	7,886	54	1,924	57	3,414	57	4,687	53	2,622	57	2,373	52	4,251	47	2,893	55	4,188	54
1993	2,526	62	9,393	64	2,536	54	1,700	60	2,284	54	2,839	65	2,393	53	4,103	48	2,752	54	4,050	60
1994	617	62	6,845	54	1,538	63	1,985	63	1,183	60	2,496	57	1,972	58	2,941	44	2,846	50	3,126	54
1995	1,350	65	7,390	59	5,029	69	1,949	58	1,555	64	2,937	59	1,815	57	3,602	48	3,002	49	3,559	57
1996	3,242	61	10,257	54	2,586	52	2,693	62	1,606	55	1,352	60	2,171	50	3,320	46	2,214	49	3,949	54
1997	974	61	3,120	65	1,922	63	3,260	58	1,795	61	1,898	62	2,425	58	3,598	50	2,430	51	2,609	59
SHELLFISHES																				
Blue crab																				
1977[a]	ND		103	43	ND		31	46	51	46	95	56	56	38	16	58	8	63	56	47
1978	ND		66	52	ND		10	38	52	51	57	62	33	43	98	61	19	60	48	55
1979	ND		106	52	ND		27	51	76	49	84	62	152	43	90	48	61	54	83	51
1980	ND		122	54	ND		24	56	119	45	65	52	80	38	65	40	176	46	95	48
1981	ND		58	53	ND		43	44	51	54	85	45	86	40	42	58	167	35	74	44
1982	ND		101	48	ND		31	51	107	42	193	48	52	49	35	54	175	42	102	46
1983	ND		148	43	15	77	35	34	105	40	145	43	48	40	36	59	112	33	94	41
1984	ND		88	58	58	60	58	42	42	46	63	50	62	42	37	61	80	46	64	51
1985	ND		144	49	107	54	56	46	41	42	141	38	184	37	73	52	152	34	113	42
1986	37	79	90	55	86	55	57	53	62	46	30	48	77	40	23	45	91	41	63	49
1987	23	68	163	41	87	38	36	51	64	55	35	35	80	47	50	59	72	44	77	45
1988	44	64	160	46	138	31	29	36	48	42	54	35	89	44	38	43	78	37	78	42

TABLE 3. (Cont.)

Species / Year	Sabine Lake		Galveston		East Matagorda		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	No./ha	Length	No./ha	Length
Blue crab (cont.)																				
1989	50	45	85	48	121	30	45	25	74	31	56	34	72	43	22	41	31	35	59	38
1990	67	47	141	44	94	46	75	31	98	30	83	35	150	42	37	51	68	40	94	39
1991	46	56	165	47	92	44	58	37	198	38	107	35	158	40	49	45	107	43	117	42
1992	36	55	90	36	54	37	45	26	117	30	140	34	164	38	105	58	129	35	103	37
1993	36	59	116	35	89	27	51	23	89	35	652	41	176	42	67	55	78	36	166	39
1994	28	51	89	38	176	26	96	22	27	34	91	27	210	39	113	47	130	32	102	34
1995	43	46	59	32	194	27	64	22	32	30	56	34	122	37	62	40	97	31	71	32
1996	84	41	106	36	136	25	39	27	39	30	38	33	119	33	48	39	100	27	73	33
1997	76	43	90	42	117	33	63	23	63	35	64	39	122	44	61	47	67	32	76	38
Brown shrimp																				
1977*	ND		139	46	ND		64	52	200	49	229	54	99	58	9	63	200	53	137	51
1978	ND		540	50	ND		167	63	102	63	152	60	258	56	188	68	120	53	245	56
1979	ND		482	58	ND		194	66	69	63	438	63	499	61	53	59	155	59	285	61
1980	ND		495	52	ND		143	68	553	60	386	60	183	62	64	64	234	56	314	58
1981	ND		719	57	ND		157	74	310	64	355	60	679	53	102	76	1,008	58	490	59
1982	ND		915	64	ND		207	64	599	51	505	54	428	57	62	63	565	61	510	60
1983	ND		484	60	99	76	248	66	310	57	530	60	295	56	57	65	532	50	360	58
1984	ND		628	64	294	65	197	56	244	66	740	66	291	58	82	61	389	63	396	64
1985	ND		522	60	413	59	364	63	306	56	755	61	370	55	288	70	1,007	56	525	59
1986	605	74	166	58	558	63	524	67	137	65	231	63	204	58	193	66	627	54	318	62
1987	401	70	1,162	58	387	56	445	64	158	60	464	62	293	60	417	56	961	58	610	59
1988	248	61	516	62	570	57	208	61	206	53	357	58	394	64	756	73	461	62	416	63
1989	110	70	519	59	889	56	369	54	739	55	726	51	522	54	167	58	411	59	493	56
1990	127	69	356	56	723	61	477	61	482	56	1,005	60	592	62	77	74	2,128	59	694	59
1991	14	68	601	57	790	61	453	60	624	56	511	67	660	70	248	56	1,064	63	591	61
1992	245	71	708	57	455	55	270	52	726	52	455	62	629	58	328	62	926	55	565	57
1993	102	63	541	58	560	54	232	55	321	54	568	64	636	58	279	62	891	59	482	59
1994	302	62	515	60	480	56	403	61	165	57	513	62	713	63	239	58	841	59	477	60
1995	83	68	331	54	392	50	344	57	290	57	359	57	498	60	477	59	728	59	406	57
1996	1,164	65	363	58	419	52	277	55	382	55	387	60	266	58	273	56	518	56	390	58
1997	103	63	552	62	369	52	240	58	436	58	739	58	608	69	1,020	78	1,231	54	640	62
Pink shrimp																				
1977*	ND		0		ND		0		12	41	0		0		48	77	0		7	69
1978	ND		0		ND		0		<1	100	<1	63	0		26	77	0		3	77
1979	ND		0		ND		0		0		0		58	51	12	78	<1	106	7	57

TABLE 3. (Cont.)

Species / Year	Sabine Lake		Galveston		East Matagorda		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	No./ha	Length	No./ha	Length
Pink shrimp (cont.)																				
1980	ND		0		ND		0		6	51	13	50	58	55	10	60	2	75	10	55
1981	ND		0		ND		0		28	54	87	44	67	54	8	62	5	49	24	49
1982	ND		0		ND		0		0		124	47	67	46	7	61	3	52	25	48
1983	ND		0		0		0		9	51	50	56	31	47	12	54	0		12	53
1984	ND		0		0		<1	25	1	73	16	48	26	48	14	65	<1	79	6	53
1985	ND		0		0		0		0		17	59	7	49	8	76	0		4	61
1986	0		0		<1	73	0		<1	68	15	39	25	49	6	43	3	65	5	46
1987	0		0		0		<1	32	0		11	52	60	52	14	50	0		8	52
1988	0		0		0		0		<1	38	135	49	106	50	<1	55	6	54	28	50
1989	0		0		0		0		1	52	45	42	64	46	20	59	0		14	47
1990	0		0		<1	131	<1	72	<1	36	99	49	106	48	4	48	15	51	25	49
1991	0		0		<1	142	0		<1	110	61	52	25	46	31	42	1	52	14	49
1992	0		<1	59	0		0		1	40	32	53	77	54	38	55	176	59	38	57
1993	0		<1	34	0		0		<1	44	58	47	53	50	32	55	140	56	34	53
1994	0		2	40	52	56	5	38	<1	35	103	49	150	53	9	39	235	59	61	54
1995	0		1	37	16	41	3	33	4	46	88	50	53	50	7	45	179	57	42	53
1996	0		0		<1	32	<1	35	17	54	35	53	25	52	24	51	154	56	31	55
1997	0		1	38	31	44	1	30	12	35	52	57	88	59	13	46	59	53	26	54
White shrimp																				
1977*	ND		1,586	55	ND		1,054	102	115	47	26	63	84	57	36	85	23	57	553	69
1978	ND		858	66	ND		554	70	130	61	92	49	62	52	21	55	130	53	335	65
1979	ND		1,720	61	ND		543	70	212	56	99	64	817	52	5	53	143	47	608	61
1980	ND		571	64	ND		522	68	291	57	133	61	141	69	62	71	18	45	288	64
1981	ND		1,393	62	ND		805	59	66	64	183	50	173	51	19	56	264	61	527	60
1982	ND		3,560	58	ND		1,750	64	650	51	297	43	369	54	14	51	326	50	1,276	58
1983	ND		1,524	50	348	70	394	65	135	64	129	53	135	42	7	67	218	52	478	53
1984	ND		1,557	59	409	65	1,438	71	166	56	415	53	311	63	17	58	625	58	759	62
1985	ND		307	61	552	61	584	63	37	44	239	44	33	53	6	73	204	54	241	58
1986	308	73	1,389	62	173	65	675	66	140	66	287	44	101	58	2	48	175	49	491	61
1987	682	68	972	53	577	61	579	67	90	54	111	65	152	61	7	37	121	61	386	58
1988	796	63	482	66	429	66	341	68	168	52	425	47	155	61	73	51	534	73	361	63
1989	615	61	559	55	76	59	384	78	145	52	631	60	372	59	2	68	194	54	356	60
1990	425	65	1,698	54	690	57	451	63	335	58	821	50	537	67	35	40	368	49	704	55
1991	385	71	1,723	50	273	51	624	58	236	55	361	71	445	62	77	49	381	61	645	55
1992	463	68	924	54	264	62	643	60	115	68	211	71	167	66	32	58	85	52	383	58
1993	324	68	526	56	449	62	585	61	132	68	96	56	876	69	137	58	750	60	437	61

TABLE 3. (Cont.)

Species Year	Sabine Lake		Galveston		East Matagorda		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	No./ha	Length	No./ha	Length
White shrimp (cont.)																				
1994	510	73	985	53	618	55	512	62	327	63	447	64	395	71	55	55	200	59	483	59
1995	789	70	563	53	613	57	607	60	368	75	218	57	268	70	19	51	378	57	401	60
1996	824	61	746	55	439	63	455	62	248	54	94	60	216	71	13	51	356	55	374	58
1997	414	55	603	63	293	50	481	61	93	63	211	68	163	72	2	53	53	57	281	62

[a]Data for October-December only.
[b]East Matagorda Bay data are only for February-September 1983. Coastwide values do not include East Matagorda Bay data.

TABLE 4. Annual mean catch rates (No./h) and mean total lengths (mm) of select fishes and shellfishes caught with 6.1-m trawls in Texas bay systems during 1982-97. Blank indicates no measurement taken; ND = no data.

Species / Year	Sabine Lake		Galveston		East Matagorda		Matagorda		San Antonio		Aransas		Corpus Christi		Upper Laguna Madre		Lower Laguna Madre		Coastwide[b]	
	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
FINFISHES																				
Atlantic croaker																				
1982[a]	ND		43	ND	ND		102	ND	10	ND	87	75	110	ND	37	ND	28	ND	62	75
1983	ND		30	131	ND		31	117	18	110	44	106	43	149	15	157	32	154	30	127
1984	ND		15	126	ND		30	104	22	87	52	83	120	121	15	137	44	138	35	112
1985	ND		20	124	ND		41	110	17	105	33	101	42	138	13	151	24	148	27	119
1986	10	157	31	123	ND		52	114	44	105	57	96	83	125	14	139	28	153	43	117
1987	25	139	26	117	17[c]	133	126	103	146	96	87	100	50	129	7	152	44	122	70	106
1988	45	135	56	98	13	131	43	121	90	109	100	102	38	125	5	137	21	138	55	109
1989	45	145	36	116	4	98	75	120	88	102	71	99	40	127	2	158	19	131	52	115
1990	40	113	36	109	12	113	79	118	50	97	45	92	55	125	12	129	66	123	50	112
1991	31	115	41	106	8	120	135	106	175	93	223	93	74	125	14	127	34	132	94	103
1992	40	139	54	107	4	120	211	100	155	84	238	87	54	114	17	140	37	140	112	98
1993	70	131	90	104	15	128	120	104	48	104	123	98	36	131	2	141	27	141	79	106
1994	34	144	73	111	17	148	99	116	146	78	55	106	18	135	2	137	21	147	72	106
1995	22	117	47	100	24	123	108	103	88	99	87	117	42	124	2	162	51	146	64	106
1996	51	120	68	103	16	111	54	118	26	113	60	108	45	142	7	140	59	150	52	114
1997	87	133	97	102	24	126	136	109	32	112	90	109	60	129	13	145	30	138	85	110
Black drum																				
1982[a]	ND		<1	259	ND		0		<1	221	<1	166	2	235	<1	264	0		<1	238
1983	ND		<1	274	ND		<1	199	<1	192	<1	201	1	347	1	266	<1	440	<1	283
1984	ND		<1	168	ND		0		0		<1	251	<1	341	1	202	<1	544	<1	258
1985	ND		<1	242	ND		0		0		<1	403	<1	315	1	280	0		<1	268
1986	<1	226	<1	233	ND		0		0		0		<1	334	<1	236	<1	335	<1	250
1987	<1	278	<1	246	0[c]		0		<1	200	0		<1	186	1	247	<1	160	<1	231
1988	1	271	<1	271	<1	192	<1	170	<1	154	<1	204	<1	299	1	197	0		<1	256
1989	2	260	<1	274	<1	192	0		<1	267	<1	170	<1	356	2	212	<1	418	<1	258
1990	1	272	<1	254	<1	146	<1	930	<1	114	<1	173	<1	560	97	109	<1	169	5	115
1991	2	268	<1	313	1	218	0		<1	194	<1	247	<1	170	71	152	1	229	4	160
1992	2	320	<1	210	<1	235	0		<1	212	<1	183	<1	359	10	225	1	233	1	236
1993	3	283	<1	275	<1	309	0		<1	282	<1	223	<1	379	3	291	<1	357	<1	297
1994	2	324	<1	291	1	259	<1	280	<1	184	<1	259	<1	401	1	360	<1	408	<1	301

TABLE 4. (Cont.)

Species / Year	Sabine Lake		Galveston		East Matagorda		Matagorda		San Antonio		Aransas		Corpus Christi		Upper Laguna Madre		Lower Laguna Madre		Coastwide[b]	
	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
Black drum (cont.)																				
1995	1	306	<1	229	1	257	0		1	221	<1	346	1	325	3	235	0		1	256
1996	2	292	<1	359	1	314	0		2	271	<1	565	<1	326	5	250	<1	397	1	283
1997	3	258	<1	258	1	241	<1	223	2	241	1	249	<1	349	5	227	<1	386	1	244
Gafftopsail catfish																				
1982[a]	ND		<1	ND	ND		4	ND	3	ND	3	ND	1	138	1	193	0		2	141
1983	ND		<1	137	ND		1	132	2	123	2	135	<1	175	0		0		1	133
1984	ND		<1	139	ND		1	144	5	121	2	109	<1	218	<1	131	<1	196	1	126
1985	ND		<1	154	ND		2	137	2	128	3	128	1	150	0		<1	210	1	134
1986	0		1	126	ND		2	134	5	128	2	121	<1	92	<1	158	0		1	128
1987	<1	174	<1	145	1[c]	143	2	138	9	122	2	124	<1	132	<1	183	<1	175	2	127
1988	0		<1	149	1	135	3	14	3	131	3	127	<1	14	0		0		1	124
1989	<1	299	<1	126	<1	139	1	134	4	136	4	139	<1	156	0		0		1	137
1990	0		1	218	1	127	1	137	4	130	2	143	<1	173	0		0		1	159
1991	0		1	145	1	142	2	145	5	127	3	141	<1	206	0		0		2	137
1992	<1	144	<1	161	<1	128	2	125	5	132	10	117	1	126	0		<1	203	2	127
1993	0		1	139	<1	118	2	145	4	123	4	118	<1	183	0		<1	185	2	133
1994	0		2	127	<1	197	2	129	3	119	2	145	1	180	<1	181	0		2	131
1995	<1	275	2	139	<1	176	1	137	4	129	3	142	1	200	0		<1	207	2	141
1996	<1	289	<1	167	1	166	2	129	1	141	1	153	<1	225	0		<1	185	1	145
1997	0		1	138	1	162	4	128	1	142	3	139	1	155	<1	157	0		2	135
Gulf menhaden																				
1982[a]	ND		12	ND	ND		10	ND	11	ND	24	ND	2	ND	<1	ND	<1	ND	10	ND
1983	ND		7	103	ND		10	109	17	76	3	89	3	104	1	87	0		8	96
1984	ND		3	98	ND		3	93	23	58	45	44	4	82	6	76	<1	59	9	61
1985	ND		18	112	ND		10	109	27	79	12	92	2	119	4	106	0		14	101
1986	<1	121	17	95	ND		4	79	18	64	8	55	1	156	<1	49	0		9	84
1987	3	101	20	95	15[c]	84	12	101	34	77	22	62	1	128	<1	92	0		16	88
1988	3	94	22	80	1	96	16	96	11	99	4	106	1	124	1	58	<1	110	13	88
1989	3	79	14	107	7	97	3	111	21	103	3	65	7	115	<1	60	<1	78	9	105
1990	5	68	11	94	2	94	4	121	24	85	19	102	2	97	2	85	<1	111	10	95
1991	6	83	21	87	4	82	17	98	34	92	16	88	2	128	1	73	<1	98	17	91
1992	2	95	22	103	7	71	31	103	17	94	38	87	3	102	1	108	1	107	20	100
1993	2	79	39	84	5	44	10	104	12	68	16	75	4	98	<1	119	<1	136	18	85
1994	4	84	30	91	4	46	7	120	13	74	3	117	5	91	<1	187	<1	132	14	93

TABLE 4. (Cont.)

Species / Year	Sabine Lake		Galveston		East Matagorda		Matagorda		San Antonio		Aransas		Corpus Christi		Upper Laguna Madre		Lower Laguna Madre		Coastwide[b]	
	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
Gulf menhaden (cont.)																				
1995	2	68	23	103	2	48	3	105	19	45	7	71	2	131	<1	108	<1	126	11	90
1996	16	55	14	101	29	33	6	91	8	79	41	37	2	111	<1	74	<1	141	11	76
1997	3	76	28	102	7	82	5	123	9	86	20	106	3	123	<1	107	<1	120	13	103
Pinfish																				
1982[a]	ND		1	ND	ND		7	ND	5	ND	2	ND	85	ND	44	ND	39	ND	19	ND
1983	ND		1	121	ND		6	110	14	106	38	106	119	124	20	133	45	109	24	119
1984	ND		1	121	ND		6	107	7	96	39	96	25	113	67	108	73	111	15	107
1985	ND		1	120	ND		9	111	23	104	53	110	48	118	18	133	48	110	18	113
1986	4	117	2	118	ND		10	101	18	98	55	103	100	116	32	109	95	108	27	109
1987	<1	126	1	122	5[c]	113	13	103	32	91	83	106	130	121	12	131	56	113	32	112
1988	4	126	2	114	5	107	18	111	92	104	139	100	272	115	20	112	65	100	59	109
1989	1	117	2	121	9	98	16	113	53	103	82	103	463	117	16	110	81	104	75	114
1990	3	109	5	107	5	103	34	109	64	101	109	101	164	107	104	77	282	101	61	102
1991	1	111	4	120	8	100	6	116	26	102	32	109	247	111	81	105	278	107	52	109
1992	1	98	2	127	1	112	5	112	10	103	23	101	159	110	48	117	130	109	31	110
1993	3	119	4	114	3	110	5	103	34	102	91	106	136	117	46	105	139	103	37	110
1994	1	128	9	109	2	125	9	101	27	103	39	118	77	127	42	114	97	106	26	115
1995	<1	122	2	137	2	119	6	106	38	97	69	114	138	127	25	115	116	105	34	117
1996	17	131	3	107	4	114	4	106	19	106	52	106	164	120	55	83	108	105	35	112
1997	2	116	1	132	9	121	2	111	11	104	59	110	333	117	28	100	105	109	51	115
Red drum																				
1982[a]	ND		0		ND		<1	ND	<1	230	<1	102	<1	649	<1	619	0		<1	402
1983	ND		0		ND		0		<1	319	<1	224	0		0		<1	280	<1	242
1984	ND		<1	583	ND		<1	305	<1	344	<1	142	<1	81	<1	241	<1	401	<1	304
1985	ND		0		ND		<1	56	0		<1	54	<1	276	<1	475	<1	90	<1	292
1986	<1	212	0		ND		0		<1	35	<1	78	0		<1	630	<1	340	<1	289
1987	<1	405	<1	34	0[c]		0		0		0		<1	399	0		0		<1	154
1988	<1	272	<1	53	0		0		0		<1	23	0		0		<1	308	<1	72
1989	<1	254	<1	44	0		<1	42	0		0		<1	525	0		<1	68	<1	72
1990	0		<1	320	0		0		<1	53	0		0		<1	40	<1	342	<1	268
1991	0		<1	135	0		0		<1	75	0		<1	264	<1	383	<1	256	<1	211
1992	0		<1	197	0		<1	63	<1	349	<1	369	<1	117	0		<1	303	<1	207
1993	<1	575	0		<1	360	0		<1	250	<1	412	0		<1	415	<1	271	<1	306
1994	0		<1	433	<1	72	0		<1	170	<1	70	0		<1	125	<1	329	<1	277

TABLE 4. (Cont.)

Species / Year	Sabine Lake		Galveston		East Matagorda		Matagorda		San Antonio		Aransas		Corpus Christi		Upper Laguna Madre		Lower Laguna Madre		Coastwide[b]	
	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 (cont.)																				
1995	<1	246	0		0		0		<1	281	0		<1	188	<1	320	<1	382	<1	306
1996	0		0		<1	400	0		<1	93	<1	436	<1	224	<1	330	<1	266	<1	227
1997	<1	679	<1	491	0		<1	330	<1	350	<1	240	0		<1	306	1	252	<1	327
Sand seatrout																				
1982[a]	ND		4		ND		5	185	<1	141	3	126	14	147	1	201	6	164	5	161
1983	ND		3	134	ND		4	132	<1	108	3	111	9	158	<1	196	1	164	3	140
1984	ND		2	147	ND		1	121	<1	115	1	107	4	141	0		1	161	1	138
1985	ND		4	127	ND		3	126	<1	136	1	119	7	144	1	160	1	117	3	131
1986	1	152	3	141	ND		2	117	<1	112	<1	133	5	148	0		<1	154	2	137
1987	2	121	2	110	2	112	5	114	1	99	1	94	9	134	<1	156	<1	160	3	118
1988	1	140	3	107	1	117	2	126	<1	123	2	107	3	125	<1	109	<1	128	2	115
1989	2	102	10	96	<1	81	3	111	1	110	4	85	12	143	0		2	152	6	109
1990	1	110	5	109	1	96	3	119	<1	117	1	113	3	124	0		2	102	3	113
1991	1	118	7	130	1	103	2	123	1	119	4	113	5	143	0		2	140	4	130
1992	2	113	6	113	<1	150	6	113	2	104	4	128	2	142	<1	209	2	155	4	117
1993	6	108	6	110	3	107	4	119	1	109	5	103	5	125	1	146	1	126	4	113
1994	1	76	8	107	3	124	3	119	<1	123	2	130	3	143	<1	253	2	157	4	114
1995	1	101	8	121	2	104	8	111	1	105	4	126	3	148	0		2	160	5	120
1996	7	151	2	116	3	94	3	119	<1	139	3	106	2	172	0		<1	169	2	127
1997	10	115	8	119	2	87	5	130	<1	105	4	131	2	149	<1	166	<1	146	5	123
Sheepshead																				
1982[a]	ND		<1	295	ND		0		<1	119	<1	85	<1	345	1	366	1	241	<1	290
1983	ND		<1	344	ND		0		<1	113	<1	138	<1	365	1	358	<1	248	<1	323
1984	ND		<1	339	ND		<1	147	0		<1	157	<1	342	<1	402	<1	300	<1	314
1985	ND		<1	341	ND		<1	102	<1	112	<1	143	<1	259	<1	412	<1	80	<1	242
1986	1	215	<1	451	ND		0		0		<1	122	<1	288	<1	356	1	160	<1	228
1987	<1	279	<1	356	0[c]		<1	111	<1	124	<1	115	<1	299	<1	377	<1	156	<1	255
1988	<1	332	<1	423	0		<1	112	<1	80	<1	95	<1	155	<1	247	<1	152	<1	238
1989	1	252	<1	253	<1	104	<1	120	<1	120	<1	116	<1	251	<1	518	<1	366	<1	240
1990	3	248	<1	343	0		0		<1	89	<1	99	0		0		<1	234	<1	274
1991	2	300	<1	339	<1	192	0		<1	145	<1	145	<1	229	0		<1	136	<1	295
1992	3	267	<1	354	0		<1	65	1	121	<1	149	<1	164	<1	465	<1	187	<1	242
1993	5	257	<1	311	1	286	0		1	134	<1	101	<1	203	<1	473	1	156	<1	227
1994	2	281	<1	287	1	309	0		<1	187	<1	133	<1	165	<1	509	1	225	<1	256

TABLE 4. (Cont.)

Species / Year	Sabine Lake		Galveston		East Matagorda		Matagorda		San Antonio		Aransas		Corpus Christi		Upper Laguna Madre		Lower Laguna Madre		Coastwide[b]	
	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
Sheepshead (cont.)																				
1995	3	244	<1	322	<1	301	<1	123	1	177	<1	139	<1	158	<1	181	1	161	<1	221
1996	2	300	<1	403	1	328	0		1	181	<1	116	<1	253	<1	464	1	115	<1	274
1997	2	303	1	312	2	314	<1	119	<1	152	<1	172	<1	288	<1	364	1	252	1	280
Southern flounder																				
1982[a]	ND		<1	158	ND		<1	169	1	155	1	186	1	181	2	203	<1	296	1	176
1983	ND		<1	175	ND		<1	196	<1	120	1	180	<1	242	<1	203	<1	161	<1	180
1984	ND		<1	193	ND		<1	194	<1	153	2	148	<1	175	1	145	<1	168	<1	160
1985	ND		<1	234	ND		<1	202	1	147	1	152	1	221	1	197	<1	261	<1	191
1986	<1	141	1	161	ND		<1	165	1	141	1	144	1	184	1	262	<1	212	1	166
1987	<1	168	<1	231	<1[c]	154	<1	191	<1	160	<1	167	<1	171	0		<1	183	<1	181
1988	<1	144	<1	195	<1	132	<1	148	<1	118	<1	168	<1	214	<1	226	<1	205	<1	157
1989	<1	173	<1	166	<1	181	<1	194	<1	130	<1	169	<1	193	<1	348	<1	211	<1	168
1990	<1	119	<1	174	<1	161	<1	166	<1	121	<1	136	<1	167	1	190	<1	170	<1	145
1991	<1	152	<1	160	<1	147	<1	242	<1	148	<1	190	<1	228	<1	266	<1	229	<1	180
1992	<1	185	<1	184	<1	186	<1	210	<1	191	<1	135	0		0		<1	205	<1	188
1993	<1	198	<1	155	<1	177	<1	142	<1	126	<1	140	<1	232	<1	416	<1	391	<1	154
1994	1	214	1	160	<1	230	<1	162	<1	226	<1	189	<1	323	<1	236	<1	223	<1	186
1995	1	138	<1	192	0		<1	225	1	170	<1	220	<1	111	<1	332	0		<1	186
1996	1	214	<1	197	<1	162	1	151	<1	156	<1	181	<1	210	<1	163	1	221	<1	173
1997	1	218	1	219	1	159	1	202	1	178	1	216	<1	188	<1	240	<1	236	1	207
Spot																				
1982[a]	ND		9	ND	ND		26	ND	5	ND	68	ND	33	ND	10	ND	4	ND	19	ND
1983	ND		6	120	ND		17	122	5	112	18	118	36	140	2	163	6	135	12	127
1984	ND		8	115	ND		34	107	35	84	131	91	74	112	82	118	10	108	39	103
1985	ND		13	121	ND		20	118	13	110	60	116	215	132	24	137	19	129	41	126
1986	6	120	14	120	ND		29	121	21	99	92	106	115	129	6	118	5	135	35	119
1987	9	134	11	127	12	119	38	115	34	97	86	117	122	125	4	158	13	112	37	119
1988	24	113	14	117	5	107	42	127	116	108	151	116	235	127	4	140	18	118	66	120
1989	19	130	11	123	6	111	85	118	73	105	97	127	240	136	6	129	18	119	68	125
1990	6	130	8	117	12	95	94	119	117	96	165	101	164	113	71	110	104	104	78	109
1991	6	124	9	120	6	108	44	124	39	105	52	108	206	116	24	130	82	117	50	116
1992	10	137	19	125	2	125	71	128	25	119	78	100	66	130	9	149	25	133	40	123
1993	32	119	16	135	4	131	86	112	30	101	63	102	167	118	4	134	11	134	54	115
1994	25	129	24	116	4	128	23	122	39	103	61	119	56	135	1	161	9	137	30	120

TABLE 4. (Cont.)

Species Year	Sabine Lake		Galveston		East Matagorda		Matagorda		San Antonio		Aransas		Corpus Christi		Upper Laguna Madre		Lower Laguna Madre		Coastwide[b]	
	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
Spot (cont.)																				
1995	6	127	17	127	4	119	38	119	53	110	75	124	41	146	1	141	15	139	32	124
1996	39	121	8	125	6	129	39	112	23	119	90	107	147	136	4	129	12	130	40	123
1997	5	149	13	134	25	125	51	125	12	120	86	119	201	123	7	137	10	133	48	124
Spotted seatrout																				
1982[a]	ND		<1	173	ND		0		<1	232	<1	163	<1	187	1	166	<1	142	<1	171
1983	ND		<1	288	ND		<1	155	<1	168	2	207	<1	327	2	188	<1	200	<1	212
1984	ND		<1	418	ND		<1	174	<1	252	<1	237	<1	385	<1	351	<1	236	<1	329
1985	ND		<1	286	ND		<1	171	<1	156	1	156	<1	171	1	146	<1	218	<1	188
1986	<1	187	<1	259	ND		<1	193	<1	170	<1	162	1	176	<1	151	1	196	<1	201
1987	<1	147	<1	134	<1[c]	162	<1	143	1	166	1	164	<1	163	1	206	<1	198	<1	167
1988	<1	189	<1	172	<1	166	<1	249	<1	159	2	166	<1	175	<1	176	<1	95	<1	172
1989	<1	227	<1	142	<1	128	<1	174	<1	190	1	168	<1	214	1	186	1	139	<1	173
1990	<1	334	<1	118	0		0		<1	119	<1	176	<1	123	<1	114	0		<1	150
1991	<1	251	<1	165	<1	184	<1	134	<1	136	1	154	<1	161	1	124	1	177	<1	155
1992	<1	194	<1	155	<1	150	<1	155	1	149	2	182	<1	219	2	175	1	185	1	167
1993	<1	196	<1	161	<1	130	<1	133	<1	149	1	181	<1	239	2	174	<1	216	<1	170
1994	<1	142	<1	145	<1	220	0		1	127	<1	199	<1	235	1	175	<1	247	<1	159
1995	<1	172	<1	145	<1	190	<1	182	1	156	1	193	<1	218	1	167	1	157	<1	168
1996	<1	180	<1	152	<1	174	<1	140	1	167	1	192	<1	235	1	180	<1	184	<1	178
1997	<1	183	<1	170	<1	140	<1	239	1	175	1	165	<1	165	1	157	<1	126	<1	175
Striped mullet																				
1982[a]	ND		<1		ND		<1		1		2		2	212	1	311	<1		1	232
1983	ND		1	204	ND		<1	131	2	137	3	209	1	211	2	323	1	331	1	210
1984	ND		1	244	ND		<1	204	<1	174	1	192	1	209	6	287	1	307	1	250
1985	ND		2	195	ND		<1	163	<1	136	7	158	<1	168	1	243	<1	254	2	181
1986	<1	187	4	255	ND		<1	116	<1	157	<1	158	1	226	<1	278	<1	266	1	250
1987	1	168	2	292	<1[c]	158	<1	200	4	145	1	171	1	192	0		0		1	210
1988	2	239	2	294	<1	167	<1	138	1	130	<1	156	3	185	<1	334	0		1	243
1989	5	183	5	249	1	164	<1	237	1	188	<1	187	2	206	0		<1	365	2	234
1990	<1	234	1	192	<1	133	<1	141	<1	136	1	155	<1	239	<1	292	0		<1	180
1991	4	174	3	213	<1	114	<1	178	7	141	2	141	<1	216	2	279	<1	276	2	181
1992	6	232	5	232	0		<1	129	3	145	4	143	1	213	<1	215	<1	178	3	206
1993	1	209	1	260	<1	172	<1	157	1	148	1	168	1	219	<1	334	<1	244	1	214
1994	4	261	1	189	<1	207	<1	141	1	144	3	184	1	260	<1	354	<1	240	1	204

TABLE 4. (Cont.)

Species / Year	Sabine Lake		Galveston		East Matagorda		Matagorda		San Antonio		Aransas		Corpus Christi		Upper Laguna Madre		Lower Laguna Madre		Coastwide[b]	
	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
Striped mullet (cont.)																				
1995	1	190	3	261	<1	333	0		<1	134	2	191	3	196	0		<1	220	2	234
1996	2	209	13	274	1	181	<1	151	1	220	3	243	1	176	<1	350	0		5	268
1997	1	241	5	248	1	222	<1	138	3	195	3	176	<1	215	4	213	<1	172	3	225
Total finfish																				
1982[a]	ND		88	199	ND		193	139	48	179	270	119	371	166	313	232	152	183	171	167
1983	ND		63	126	ND		162	99	107	93	174	108	308	139	170	115	143	139	139	116
1984	ND		46	123	ND		111	104	104	82	312	86	294	124	197	123	169	130	134	108
1985	ND		82	117	ND		115	114	96	101	236	99	380	129	96	127	149	128	143	117
1986	28	151	96	122	ND		127	112	118	97	261	104	378	132	86	109	188	132	151	117
1987	53	136	83	121	64[c]	117	242	107	302	100	354	101	370	131	64	117	157	126	200	112
1988	101	131	138	101	49	122	186	118	363	107	512	108	630	127	76	104	167	119	259	113
1989	98	137	111	119	44	105	265	122	295	106	347	109	857	133	53	103	197	121	272	122
1990	85	122	94	116	41	108	282	118	304	102	381	106	464	123	368	88	564	119	259	113
1991	72	127	176	106	41	109	359	104	347	97	423	102	614	122	208	125	524	123	318	109
1992	94	152	166	121	23	102	455	105	268	98	443	97	335	121	106	130	305	129	281	111
1993	156	142	201	107	55	132	297	108	166	103	365	110	433	131	87	113	269	128	252	114
1994	82	152	194	111	54	150	229	110	295	92	266	104	268	123	85	106	203	130	218	110
1995	59	128	216	103	69	130	371	99	329	101	338	120	331	134	53	122	278	132	273	109
1996	166	123	150	118	85	104	177	106	137	117	320	109	432	136	90	107	257	135	201	120
1997	143	133	216	110	85	135	272	117	102	122	344	116	653	129	69	134	191	130	262	120
SHELLFISHES																				
Blue crab																				
1982[a]	ND		28	91	ND		5	99	17	81	29	66	7	97	9	148	10	100	17	89
1983	ND		24	88	ND		10	86	21	80	40	81	2	96	7	113	12	97	18	86
1984	ND		19	92	ND		4	88	8	82	31	81	8	88	24	106	50	86	15	90
1985	ND		30	79	ND		10	85	19	76	23	72	5	115	21	103	36	86	21	81
1986	6	132	28	79	ND		13	85	19	85	25	78	14	88	8	100	15	85	19	83
1987	5	135	19	78	28[c]	87	10	77	40	93	18	84	6	95	8	108	19	88	17	86
1988	5	137	9	71	13	91	3	77	89	75	57	63	7	88	7	98	18	84	22	74
1989	9	135	25	66	51	63	6	80	50	74	24	68	2	94	2	107	9	77	19	72
1990	6	98	31	72	15	79	4	90	39	69	17	71	14	96	5	93	33	91	21	76
1991	7	117	10	64	26	76	6	75	68	58	51	58	7	102	5	105	35	89	20	65
1992	7	139	8	77	2	102	6	65	105	54	38	56	10	81	26	110	27	98	24	65

TABLE 4. (Cont.)

Species / Year	Sabine Lake		Galveston		East Matagorda		Matagorda		San Antonio		Aransas		Corpus Christi		Upper Laguna Madre		Lower Laguna Madre		Coastwide[b]	
	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
Blue crab (cont.)																				
1993	5	131	16	70	6	93	14	82	50	80	35	78	10	96	16	114	22	88	20	81
1994	4	146	16	74	3	90	23	85	71	47	26	72	3	66	20	83	25	93	24	67
1995	2	133	8	58	3	111	8	74	25	55	11	67	4	69	11	76	17	84	10	64
1996	9	107	14	60	6	107	16	82	14	75	10	72	5	78	4	86	12	87	12	73
1997	4	131	16	52	5	138	18	73	21	70	12	68	4	82	7	99	15	88	14	67
Brown shrimp																				
1982[a]	ND		23	90	ND		25	94	17	101	54	80	40	90	40	101	6	61	27	91
1983	ND		12	99	ND		26	100	31	99	56	91	8	99	8	102	9	66	21	97
1984	ND		13	102	ND		7	102	58	96	107	80	50	103	25	108	6	74	30	94
1985	ND		33	75	ND		24	89	27	90	67	81	24	96	16	108	11	63	30	83
1986	<1	99	15	94	ND		29	99	69	98	111	96	42	95	7	108	15	64	34	96
1987	4	92	24	88	7[c]	76	47	91	93	85	101	88	66	94	8	100	5	70	46	89
1988	3	85	24	84	10	91	32	100	124	91	139	86	17	89	6	93	3	73	44	90
1989	8	84	29	84	47	97	39	91	156	90	105	90	17	88	5	92	9	63	49	89
1990	1	113	11	98	40	100	26	96	104	92	78	90	28	88	12	91	27	79	34	92
1991	1	93	13	87	63	96	21	86	51	89	158	91	29	91	19	97	8	80	32	90
1992	3	83	38	82	9	90	23	82	65	82	64	81	30	92	40	110	7	73	37	84
1993	9	79	18	85	14	69	43	94	45	82	95	88	22	87	13	103	5	67	32	88
1994	9	83	29	99	3	69	51	95	101	88	37	85	10	88	18	103	54	58	41	91
1995	1	91	12	83	9	65	54	84	100	75	108	84	23	90	15	91	14	70	41	81
1996	8	89	14	95	25	63	23	101	36	89	69	80	19	94	13	82	7	86	23	91
1997	7	80	12	92	4	62	29	89	23	80	71	78	16	91	24	107	12	68	23	86
Pink shrimp																				
1982[a]	ND		<1	94	ND		<1	113	<1	96	7	89	2	100	1	96	0		1	94
1983	ND		<1	95	ND		1	112	5	95	9	94	2	103	1	113	1	88	2	99
1984	ND		0		ND		<1	76	<1	72	3	86	3	109	<1	94	<1	71	1	98
1985	ND		<1	88	ND		<1	104	3	98	4	100	5	96	4	107	1	98	2	99
1986	0		<1	118	ND		2	114	4	103	11	101	12	103	1	109	<1	70	3	104
1987	0		<1	111	2[c]	102	5	95	2	92	6	84	12	101	1	107	2	72	3	95
1988	0		1	79	<1	110	2	89	6	86	20	82	8	93	<1	76	2	77	4	85
1989	0		<1	90	<1	94	1	102	8	93	14	91	8	95	<1	85	1	80	3	93
1990	0		<1	84	0		<1	106	1	97	23	88	4	97	3	71	3	85	3	90
1991	0		<1	101	1	115	2	102	8	84	27	88	8	97	4	103	4	79	5	90
1992	0		<1	58	<1	101	<1	87	<1	70	7	77	10	95	9	103	20	82	3	89

TABLE 4. (Cont.)

Species / Year	Sabine Lake		Galveston		East Matagorda		Matagorda		San Antonio		Aransas		Corpus Christi		Upper Laguna Madre		Lower Laguna Madre		Coastwide[b]	
	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
Pink shrimp (cont.)																				
1993	0		<1	87	0		<1	100	1	86	5	76	4	91	1	98	4	79	1	85
1994	0		<1	92	<1	89	3	104	5	78	6	85	5	89	4	93	15	63	3	84
1995	0		<1	89	2	80	10	97	6	82	4	90	13	100	4	95	7	70	5	94
1996	0		1	101	2	90	1	113	7	92	4	91	5	100	3	88	5	63	3	94
1997	0		<1	92	1	76	3	98	4	96	13	94	14	104	2	99	5	78	4	98
White shrimp																				
1982[a]	ND		88	93	ND		39	86	14	99	16	95	26	101	17	110	4	61	46	92
1983	ND		78	93	ND		20	102	13	96	18	100	14	111	6	112	2	86	36	95
1984	ND		60	98	ND		15	99	8	99	38	106	24	106	11	126	10	109	32	101
1985	ND		62	99	ND		21	110	23	91	17	106	22	104	6	120	1	105	33	101
1986	14	105	45	95	ND		60	98	15	96	13	101	19	98	3	108	5	57	34	97
1987	23	101	37	97	22[c]	92	16	97	42	87	10	94	15	99	2	105	2	76	24	95
1988	39	107	21	91	8	95	16	98	41	93	16	91	12	95	3	102	<1	79	20	94
1989	29	87	29	89	11	98	9	98	43	99	7	98	9	100	3	97	<1	114	20	93
1990	50	90	14	98	14	103	16	115	47	97	13	108	22	98	21	100	1	113	21	100
1991	17	91	76	97	7	99	11	95	27	94	30	89	24	121	14	113	1	107	37	98
1992	37	88	59	93	5	99	31	96	24	95	53	93	5	111	6	114	1	104	35	94
1993	11	81	38	91	31	83	17	97	18	88	21	95	10	90	14	96	2	97	23	92
1994	45	96	95	80	15	97	9	107	44	87	6	101	34	91	10	109	2	94	45	84
1995	4	93	55	90	34	87	11	101	28	86	9	98	6	103	7	104	8	93	26	92
1996	31	97	18	98	87	89	14	109	18	95	5	105	3	109	3	105	1	99	14	100
1997	48	78	51	95	25	95	27	101	37	96	28	91	4	111	2	112	2	72	32	95

[a]Values include May-Dec. only.
[b]1986 values include Sabine Lake; 1987 values include East Matagorda Bay.
[c]Values include Apr.-Dec. only.

TABLE 5. Annual mean catch rates (No./h) and mean total lengths (mm) of select fishes and shellfishes caught with 6.1-m trawls in the Texas Territorial Sea during 1985-97. Blank indicates no measurement taken; ND = no data.

Species	Year	Sabine		Galveston		Port O'Connor		Port Aransas		Port Isabel		Coastwide	
		No./h	Length	No./h	Length	No./h	Length	No./h	Length	No./h	Length	No./h	Length
FINFISHES													
Atlantic croaker													
	1985[a]	ND		22	145	42	139	17	145	9	149	23	142
	1986	44[b]	134	45	126	98	136	43	130	9	132	49	132
	1987	9	114	110	119	65	131	28	134	<1	157	44	124
	1988	79	122	78	118	89	132	23	130	2	128	55	125
	1989	64	115	117	117	75	128	28	128	6	137	60	121
	1990	175	117	139	111	69	135	65	131	4	119	91	119
	1991	272	111	153	114	201	121	87	129	4	162	145	117
	1992	229	110	228	116	153	116	81	106	6	126	142	113
	1993	437	111	200	110	74	123	91	121	10	144	162	113
	1994	140	115	109	126	75	141	2	114	14	143	69	126
	1995	80	116	33	123	112	119	20	133	1	121	50	119
	1996	253	118	88	128	29	117	7	117	8	143	77	121
	1997	150	118	94	118	195	134	51	133	18	136	104	126
Black drum													
	1985[a]	ND		0		0		<1	825	0		<1	825
	1986	0[b]		0		<1	900	0		0		<1	900
	1987	<1	851	<1	760	<1	680	<1	680	0		<1	741
	1988	0		<1	752	0		0		0		<1	752
	1989	<1	698	0		<1	506	0		0		<1	631
	1990	0		<1	528	0		0		0		<1	538
	1991	0		<1	970	0		0		0		<1	970
	1992	0		0		<1	889	0		0		<1	889
	1993	<1	146	<1	825	0		0		<1	780	<1	632
	1994	0		<1	843	0		0		0		<1	843
	1995	<1	871	<1	142	0		0		0		<1	496
	1996	0		0		0		0		0		0	
	1997	0		0		0		0		0		0	

TABLE 5. (Cont.)

Species	Year	Sabine No./h	Sabine Length	Galveston No./h	Galveston Length	Port O'Connor No./h	Port O'Connor Length	Port Aransas No./h	Port Aransas Length	Port Isabel No./h	Port Isabel Length	Coastwide No./h	Coastwide Length
Gafftopsail catfish													
	1985[a]	ND		<1	165	<1	156	<1	136	0		<1	160
	1986	13[b]	121	<1	118	<1	115	<1	176	0		3	121
	1987	3	116	0		<1	158	<1	134	0		1	118
	1988	2	118	<1	169	<1	168	0		<1	180	<1	126
	1989	2	144	1	123	<1	546	<1	187	0		<1	143
	1990	3	119	<1	123	0		0		0		1	119
	1991	1	145	<1	170	<1	181	<1	178	0		<1	150
	1992	12	125	1	148	<1	148	<1	209	0		3	127
	1993	6	123	<1	129	<1	182	<1	145	0		1	127
	1994	6	131	2	152	<1	239	1	204	0		2	143
	1995	5	131	1	141	0		1	155	0		1	135
	1996	5	122	1	137	<1	238	1	190	0		1	138
	1997	5	118	1	241	0		<1	287	0		1	134
Gulf menhaden													
	1985[a]	ND		2	150	1	159	1	151	0		1	152
	1986	4[b]	125	2	147	<1	180	<1	197	0		1	135
	1987	3	132	5	135	1	146	<1	159	0		2	136
	1988	5	124	10	57	6	107	<1	122	0		4	87
	1989	1	137	1	144	<1	131	<1	177	<1	51	1	138
	1990	2	133	4	136	1	122	<1	162	0		1	134
	1991	7	134	1	144	1	130	<1	148	0		2	135
	1992	4	141	14	116	1	139	1	145	0		4	123
	1993	5	142	1	129	<1	159	0		0		1	141
	1994	6	131	3	132	3	117	<1	116	<1	157	2	129
	1995	5	137	4	137	1	159	<1	163	<1	131	2	141
	1996	9	141	1	136	1	155	1	146	<1	205	2	142
	1997	9	124	5	107	3	160	2	150	<1	144	4	128

TABLE 5. (Cont.)

Species	Year	Sabine		Galveston		Port O'Connor		Port Aransas		Port Isabel		Coastwide	
		No./h	Length	No./h	Length	No./h	Length	No./h	Length	No./h	Length	No./h	Length
King mackerel													
	1985[a]	ND		<1	173	0		<1	124	0		<1	142
	1986	0[b]		<1	159	0		0		0		<1	159
	1987	0		0		<1	120	<1	200	0		<1	131
	1988	0		0		0		0		0		0	
	1989	0		0		<1	161	<1	164	0		<1	162
	1990	0		<1	201	<1	223	0		0		<1	210
	1991	0		<1	172	<1	157	<1	99	0		<1	132
	1992	0		<1	149	<1	152	1	136	<1	192	<1	144
	1993	0		0		0		<1	169	0		<1	169
	1994	0		0		0		<1	167	0		<1	167
	1995	0		<1	173	<1	108	<1	177	0		<1	170
	1996	0		0		0		<1	195	0		<1	195
	1997	<1	158	<1	159	1	157	<1	163	0		<1	158
Pinfish													
	1985[a]	ND		<1	124	3	109	4	110	1	135	2	112
	1986	<1[b]	98	2	104	2	105	4	107	2	103	2	105
	1987	0		<1	100	3	111	3	115	<1	112	1	113
	1988	<1	93	<1	112	8	105	8	110	3	105	4	107
	1989	<1	100	1	108	3	116	7	110	6	105	3	109
	1990	<1	86	1	111	4	110	18	105	2	98	5	105
	1991	<1	121	1	132	2	116	18	113	2	118	4	114
	1992	<1	115	2	121	3	110	6	103	3	107	3	108
	1993	<1	72	<1	102	3	105	6	110	2	111	3	108
	1994	<1	131	1	111	5	107	4	107	6	107	3	107
	1995	0		1	117	3	101	4	121	7	115	3	114
	1996	1	120	<1	126	1	121	4	116	7	110	3	114
	1997	<1	120	<1	122	4	118	13	114	12	107	6	112

TABLE 5. (Cont.)

Species	Year	Sabine		Galveston		Port O'Connor		Port Aransas		Port Isabel		Coastwide	
		No./h	Length	No./h	Length	No./h	Length	No./h	Length	No./h	Length	No./h	Length
Red drum													
	1985[a]	ND		0		0		<1	84	0		<1	84
	1986	0[b]		0		0		0		0		0	
	1987	0		0		<1	948	0		<1	42	<1	520
	1988	0		0		0		0		0		0	
	1989	0		<1	1,110	0		0		0		<1	1,110
	1990	0		<1	61	0		0		0		<1	61
	1991	0		0		0		0		0		0	
	1992	0		0		0		0		<1	95	<1	95
	1993	0		<1	1,013	0		0		0		<1	1,013
	1994	0		0		0		0		0		0	
	1995	0		0		<1	811	<1	1,037	0		<1	922
	1996	0		<1	964	0		<1	930	<1	124	<1	467
	1997	0		0		0		0		0		0	
Red snapper													
	1985[a]	ND		0		0		2	85	7	89	2	88
	1986	0[b]		0		<1	152	1	95	<1	103	<1	100
	1987	0		0	68	<1	88	1	122	<1	83	<1	107
	1988	0		0		0		1	111	1	106	<1	109
	1989	0		<1	74	2	87	4	87	3	90	2	88
	1990	0		0		<1	94	3	105	2	113	1	106
	1991	0		0		0		9	80	2	106	2	84
	1992	0		0		2	79	6	77	2	99	2	81
	1993	0		<1	126	1	76	2	77	3	98	1	88
	1994	0		0		3	89	3	103	5	97	2	96
	1995	0		0		5	70	6	89	8	89	3	84
	1996	0		0		<1	95	2	90	1	101	1	93
	1997	<1	64	0		2	80	2	89	2	99	1	88

TABLE 5. (Cont.)

Species	Year	Sabine No./h	Sabine Length	Galveston No./h	Galveston Length	Port O'Connor No./h	Port O'Connor Length	Port Aransas No./h	Port Aransas Length	Port Isabel No./h	Port Isabel Length	Coastwide No./h	Coastwide Length
Sand seatrout													
	1985[a]	ND		10	141	6	168	3	140	<1	221	5	150
	1986	5[b]	164	4	141	3	151	1	174	0		3	154
	1987	7	131	6	133	5	134	2	162	<1	108	4	135
	1988	3	148	5	114	11	129	1	184	<1	137	4	130
	1989	22	133	41	110	16	127	7	155	2	123	18	122
	1990	50	136	8	126	7	139	2	130	1	118	14	135
	1991	28	130	12	143	7	146	12	129	1	153	12	135
	1992	41	132	11	138	6	148	5	131	<1	161	13	135
	1993	45	129	7	131	15	116	10	112	2	121	16	124
	1994	82	132	3	149	5	148	2	125	1	130	18	134
	1995	23	126	18	129	111	106	16	125	6	88	36	112
	1996	11	138	5	141	8	163	2	130	9	102	7	136
	1997	15	134	7	141	15	134	2	151	6	106	9	133
Southern flounder													
	1985[a]	ND		0		<1	280	<1	137	0		<1	199
	1986	1[b]	162	<1	255	<1	184	<1	311	0		<1	173
	1987	<1	256	<1	197	0		<1	179	<1	168	<1	191
	1988	<1	204	0		<1	214	<1	225	0		<1	214
	1989	0		0		<1	210	<1	298	0		<1	239
	1990	<1	187	0		<1	212	<1	164	<1	250	<1	197
	1991	<1	286	<1	260	<1	194	<1	188	0		<1	220
	1992	<1	143	<1	240	0		<1	284	<1	418	<1	270
	1993	<1	124	0		0		<1	279	0		<1	201
	1994	<1	171	<1	180	<1	215	0		<1	286	<1	205
	1995	0		0		<1	262	0		0		<1	262
	1996	<1	196	0		<1	437	0		0		<1	280
	1997	<1	275	0		0		0		0		<1	275

TABLE 5. (Cont.)

Species	Year	Sabine		Galveston		Port O'Connor		Port Aransas		Port Isabel		Coastwide	
		No./h	Length	No./h	Length	No./h	Length	No./h	Length	No./h	Length	No./h	Length
Spanish mackerel													
	1985[a]	ND		0		0		0		0		0	
	1986	<1[b]	200	0		0		0		0		<1	200
	1987	<1	93	<1	183	0		<1	258	0		<1	203
	1988	<1	166	<1	178	<1	182	<1	110	<1	200	<1	180
	1989	<1	206	<1	172	<1	175	<1	175	0		<1	182
	1990	<1	174	1	176	<1	225	<1	192	0		<1	180
	1991	1	184	1	163	<1	144	<1	134	0		<1	168
	1992	<1	158	<1	175	<1	181	<1	164	0		<1	168
	1993	1	167	<1	188	0		<1	237	0		<1	190
	1994	0		0		<1	170	<1	170	0		<1	170
	1995	<1	194	<1	186	<1	135	<1	242	0		<1	192
	1996	<1	289	<1	460	0		0		0		<1	348
	1997	<1	154	<1	135	<1	205	<1	190	0		<1	160
Spot													
	1985[a]	ND		3	132	20	130	21	141	1	142	11	136
	1986	3[b]	124	8	128	7	124	25	123	2	125	9	124
	1987	5	140	9	126	4	125	22	129	<1	170	8	129
	1988	4	115	7	116	23	128	23	122	3	110	12	123
	1989	6	120	27	108	18	124	48	121	4	121	21	118
	1990	9	123	25	121	102	125	93	117	4	112	47	125
	1991	18	117	4	125	67	122	37	127	1	129	26	123
	1992	5	127	12	126	6	122	10	126	2	117	7	125
	1993	4	122	14	119	4	126	19	125	4	138	9	124
	1994	13	125	4	131	13	125	4	131	4	129	8	127
	1995	7	115	3	135	30	132	7	150	4	125	10	132
	1996	9	116	4	130	18	137	13	124	5	120	10	128
	1997	4	139	8	134	11	140	32	125	21	124	15	129

TABLE 5. (Cont.)

Species	Year	Sabine No./h	Sabine Length	Galveston No./h	Galveston Length	Port O'Connor No./h	Port O'Connor Length	Port Aransas No./h	Port Aransas Length	Port Isabel No./h	Port Isabel Length	Coastwide No./h	Coastwide Length
Spotted seatrout													
	1985[a]	ND		0		0		<1	140	0		<1	140
	1986	<1[b]	163	<1	172	<1	165	0		0		<1	165
	1987	<1	178	0		0		0		0		<1	178
	1988	0		<1	65	<1	110	0		0		<1	88
	1989	<1	98	0		<1	173	0		0		<1	137
	1990	<1	110	<1	160	<1	122	<1	144	0		<1	132
	1991	0		0		<1	148	0		0		<1	148
	1992	<1	112	0		0		0		0		<1	112
	1993	0		0		<1	160	0		0		<1	160
	1994	<1	187	<1	54	0		0		0		<1	67
	1995	<1	276	0		0		0		0		<1	276
	1996	<1	139	0		0		0		0		<1	139
	1997	<1	280	0		0		<1	144	<1	214	<1	183
Total finfish													
	1985[a]	ND		148	119	188	118	227	114	130	101	174	114
	1986	159[b]	122	207	118	215	123	292	119	72	110	190	120
	1987	158	98	289	111	229	118	226	114	80	96	199	110
	1988	153	120	273	104	379	114	291	106	52	103	234	110
	1989	178	114	301	111	350	118	354	113	106	108	261	114
	1990	477	121	355	113	464	138	337	115	80	103	346	122
	1991	427	117	322	125	666	115	458	108	124	102	404	115
	1992	524	115	499	116	523	111	332	103	128	96	406	111
	1993	651	117	324	116	376	102	381	104	135	106	377	110
	1994	408	121	253	121	560	110	447	99	151	105	367	111
	1995	231	119	165	109	900	98	394	109	174	97	380	104
	1996	618	116	279	115	430	108	458	99	196	98	397	109
	1997	472	114	252	111	683	124	325	113	253	108	401	116

TABLE 5. (Cont.)

Species	Year	Sabine		Galveston		Port O'Connor		Port Aransas		Port Isabel		Coastwide	
		No./h	Length	No./h	Length	No./h	Length	No./h	Length	No./h	Length	No./h	Length
SHELLFISHES													
Blue crab													
	1985[a]	ND		<1	105	1	134	1	127	<1	144	<1	127
	1986	4[b]	96	6	105	1	141	1	145	1	123	3	110
	1987	3	96	1	112	2	105	<1	142	<1	140	1	106
	1988	2	85	<1	104	1	113	1	128	<1	160	1	105
	1989	4	61	2	72	1	130	<1	134	<1	146	1	78
	1990	15	80	4	63	1	118	1	126	1	127	4	84
	1991	19	72	6	58	1	102	2	114	<1	121	6	73
	1992	7	58	1	104	<1	85	1	95	<1	123	2	69
	1993	5	78	1	83	2	116	1	130	1	102	2	95
	1994	9	77	2	123	1	115	2	66	1	128	3	87
	1995	8	65	1	61	<1	120	1	122	<1	122	2	70
	1996	5	58	<1	59	<1	115	<1	120	1	107	1	67
	1997	15	67	3	65	<1	83	1	107	1	124	4	71
Brown shrimp													
	1985[a]	ND		7	103	7	125	47	109	18	106	19	109
	1986	10[b]	107	13	99	6	114	10	105	6	110	9	105
	1987	7	104	24	104	9	108	14	106	1	118	11	106
	1988	15	102	5	109	24	103	28	106	<1	116	15	104
	1989	33	103	50	96	56	105	140	95	12	94	59	98
	1990	34	101	10	108	55	107	58	114	20	106	36	108
	1991	12	90	2	102	12	93	9	101	17	123	10	104
	1992	9	91	20	103	4	96	19	92	2	115	11	97
	1993	23	100	21	97	13	105	9	97	4	109	14	100
	1994	6	100	10	101	5	99	16	94	7	106	9	99
	1995	49	102	5	97	49	101	31	94	2	112	28	100
	1996	10	92	3	103	3	104	4	105	2	107	4	99
	1997	23	94	4	100	7	100	8	104	8	108	10	99

TABLE 5. (Cont.)

Species	Year	Sabine No./h	Sabine Length	Galveston No./h	Galveston Length	Port O'Connor No./h	Port O'Connor Length	Port Aransas No./h	Port Aransas Length	Port Isabel No./h	Port Isabel Length	Coastwide No./h	Coastwide Length
Pink shrimp													
	1985[a]	ND		<1	120	<1	130	1	119	1	108	1	116
	1986	0[b]		<1	124	2	110	4	105	3	118	2	111
	1987	0		0		1	114	5	102	1	124	1	108
	1988	<1	87	0		1	108	7	103	1	125	2	106
	1989	0		<1	105	1	103	7	100	4	117	2	105
	1990	0		<1	104	1	101	3	118	3	117	1	114
	1991	<1	101	<1	99	1	109	6	112	2	118	2	112
	1992	<1	88	<1	79	<1	114	4	102	<1	122	1	104
	1993	0		<1	104	4	99	5	104	9	112	4	107
	1994	<1	90	<1	116	1	109	10	98	8	116	4	106
	1995	<1	78	0		6	102	6	109	3	112	3	106
	1996	<1	94	0		1	112	1	109	5	116	1	114
	1997	0		<1	93	3	103	4	111	4	118	2	111
White shrimp													
	1985[a]	ND		53	110	26	124	11	126	1	105	24	115
	1986	41[b]	101	53	101	15	120	8	124	2	137	24	105
	1987	26	105	14	109	16	112	8	119	1	121	13	110
	1988	14	105	17	100	19	110	9	116	<1	133	12	107
	1989	21	102	25	106	22	108	14	113	1	122	17	107
	1990	18	104	11	115	15	118	6	136	2	136	10	115
	1991	28	105	10	117	30	106	6	127	1	122	15	109
	1992	51	98	31	108	11	112	10	118	1	145	21	105
	1993	61	101	10	108	11	121	5	134	1	133	17	106
	1994	17	109	8	109	15	114	9	116	1	128	10	112
	1995	10	110	20	113	14	117	12	125	3	134	12	117
	1996	49	96	22	105	18	118	9	125	5	116	21	105
	1997	59	100	18	104	14	118	9	124	1	122	20	106

[a]Values include Feb-Dec only off Port Aransas and Aug-Dec only off all other areas.
[b]Values include Jun-Dec only.

TABLE 6. Annual mean catch rates (No./h) and mean total lengths (mm) by size class* of Eastern oyster caught with 46.0-cm wide dredges on "reef" stations in Texas bay systems during 1984-97. Blank indicates no measurement taken; ND = no data.

Size		Galveston		Matagorda		San Antonio		Aransas		Coastwide	
class	Year	No./h	Length	No./h	Length	No./h	Length	No./h	Length	No./h	Length
Spat	1984	491		ND		ND		ND		491	
	1985	891		ND		ND		ND		891	
	1986	1,010		764		499		551		770	
	1987	1,054		654		66		4,269		1,382	
	1988	1,440		938		439		1,772		1,202	
	1989	1,322		2,019		1,864		3,071		1,880	
	1990	2,147		1,289		1,117		1,611		1,685	
	1991	1,458		718		894		410		1,022	
	1992	3,083		454		268		82		1,487	
	1993	3,194		139		122		0		1,440	
	1994	1,263		329		546		719		860	
	1995	718		1,311		1,493		1,836		1,194	
	1996	7,458		1,497		4,521		1,251		4,740	
	1997	940		816		756		654		830	
Small	1984	1,705	47	ND		ND		ND		1,705	47
	1985	2,096	54	ND		ND		ND		2,095	54
	1986	1,316	54	382	51	565	58	1,273	51	1,001	54
	1987	1,070	51	555	51	240	55	2,499	50	1,077	51
	1988	1,500	53	580	52	235	42	2,187	52	1,208	52
	1989	1,086	47	706	48	1,985	50	2,278	49	1,463	48
	1990	2,996	45	417	48	1,401	53	1,495	45	1,971	46
	1991	4,927	48	1,040	51	538	54	1,016	48	2,615	49
	1992	4,601	51	622	52	92	48	263	54	2,168	51
	1993	3,895	54	396	54	500	51	296	59	1,926	54
	1994	3,002	52	805	48	573	47	1,010	46	1,749	50
	1995	2,656	53	1,193	49	987	52	4,192	52	2,354	52
	1996	3,023	47	1,748	50	1,740	47	3,912	52	2,714	49
	1997	5,846	50	1,517	51	689	51	3,160	57	3,468	51

TABLE 6. (Cont.)

Size Class	Year	Galveston		Matagorda		San Antonio		Aransas		Coastwide	
		No./h	Length	No./h	Length	No./h	Length	No./h	Length	No./h	Length
Market	1984	447	91	ND	ND	ND		ND		447	91
	1985	674	88	ND	ND	ND		ND		674	88
	1986	617	88	212	92	444	92	191	86	438	89
	1987	370	91	167	91	258	93	411	86	323	90
	1988	397	89	201	91	23	89	402	87	284	88
	1989	232	90	177	90	414	90	282	85	275	89
	1990	179	88	114	89	445	88	99	83	215	88
	1991	502	87	216	89	377	91	65	84	349	88
	1992	796	87	164	88	24	93	40	83	384	87
	1993	1,346	88	204	92	74	87	161	87	652	87
	1994	1,214	90	313	95	287	93	355	93	691	91
	1995	760	89	433	92	415	93	1,056	92	673	91
	1996	683	89	698	90	604	94	1,442	91	803	88
	1997	837	89	562	91	167	94	1,244	88	729	89

* Spat (5-25 mm), small (26-75 mm), market (≥76 mm). Mean total length not calculated for spat.

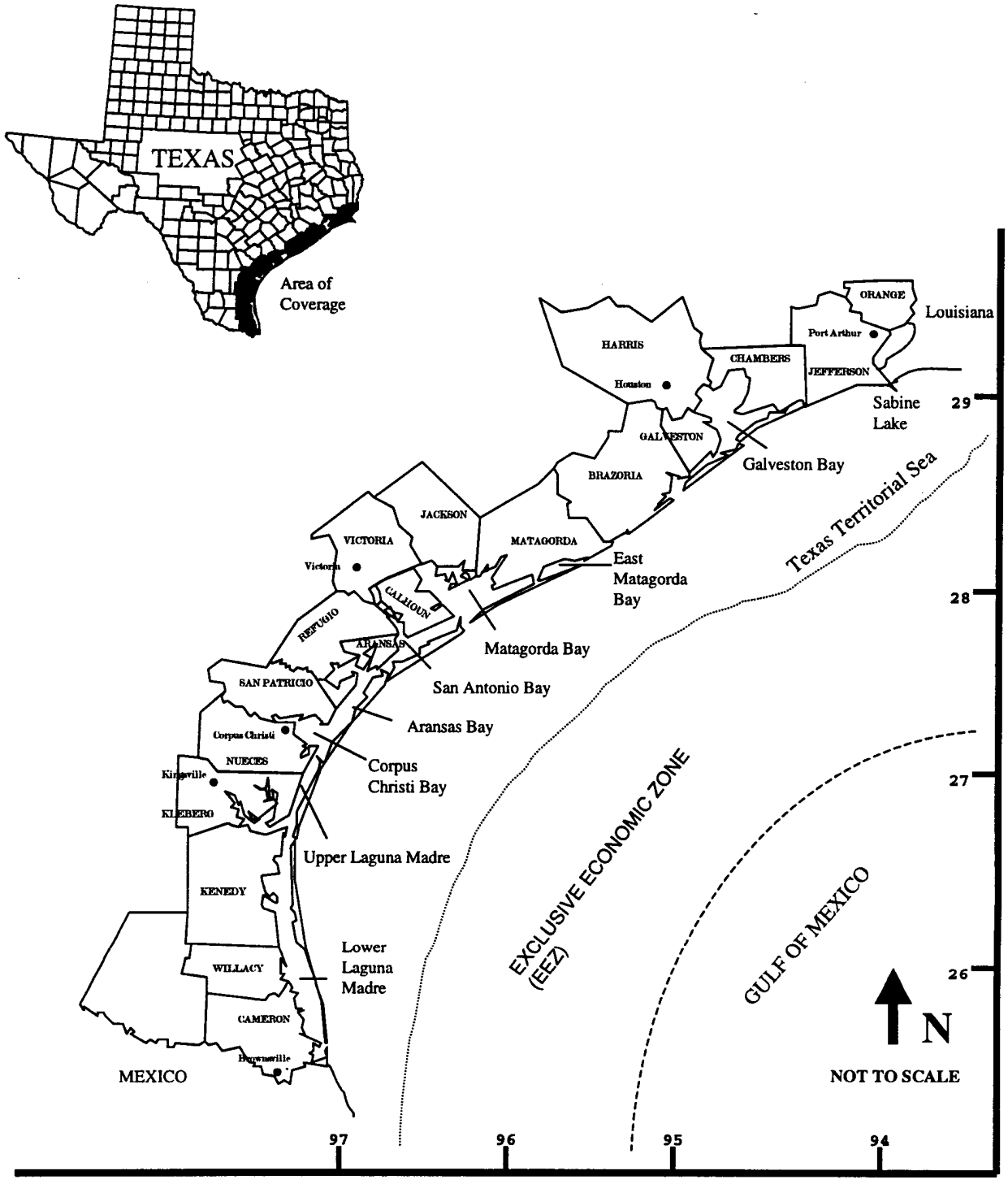

Figure 1. Texas gulf shoreline and Texas Territorial Sea (TTS).

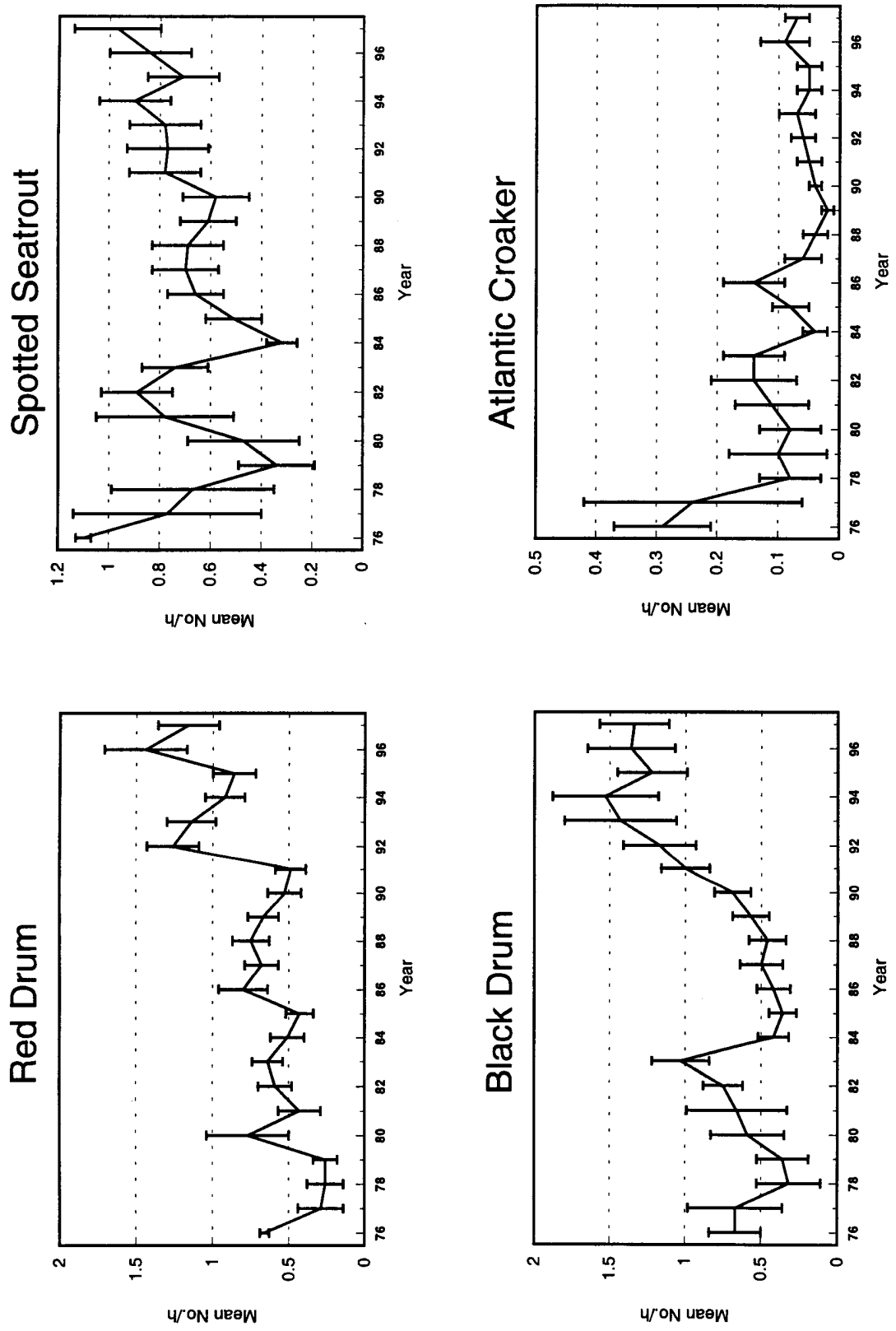

Figure 2. Spring gill net mean catch rates (No./h ± 1 SE) for red drum, black drum, spotted seatrout and Atlantic croaker during 1976-97.

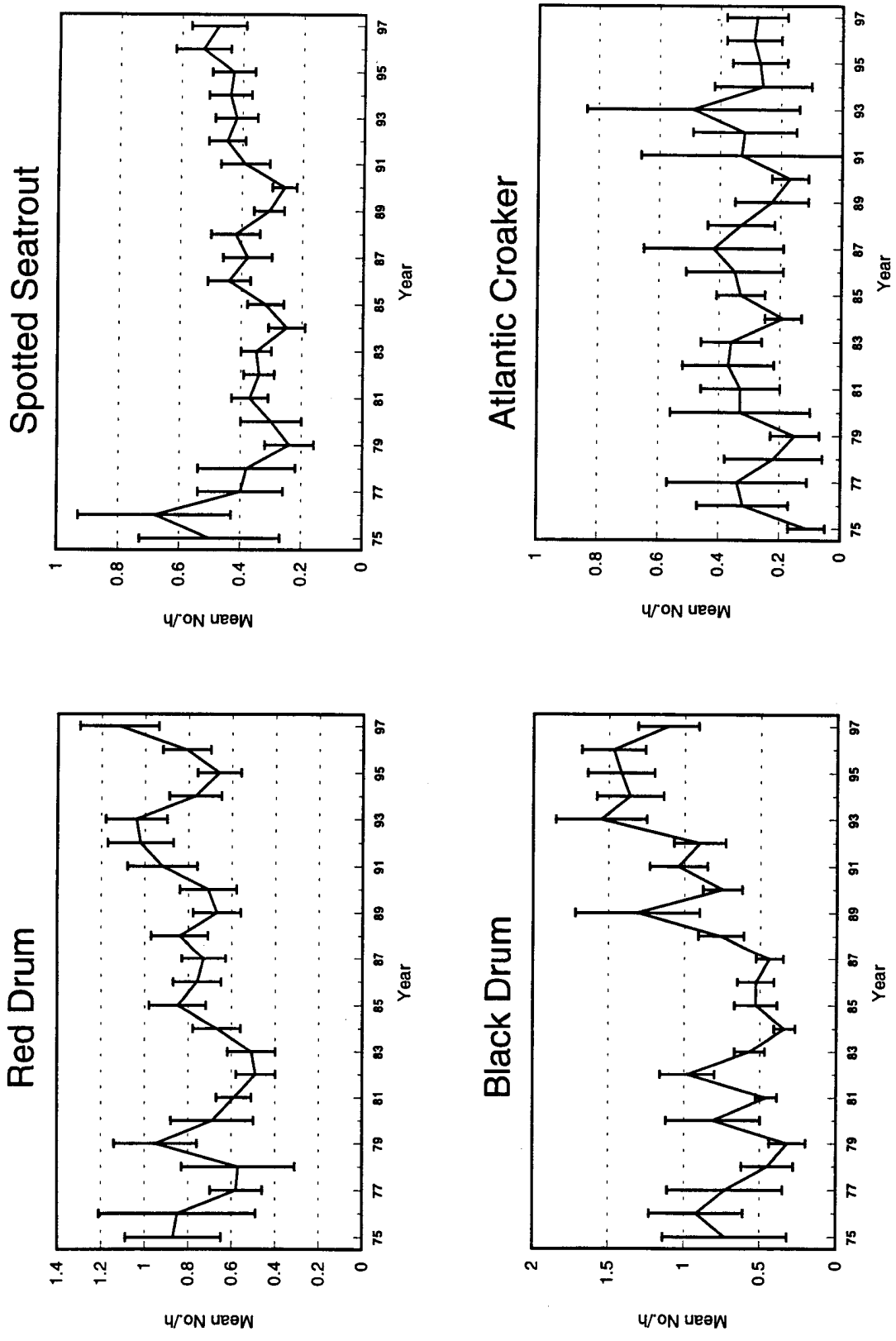

Figure 3. Fall gill net mean catch rates (No./h ± 1 SE) for red drum, black drum, spotted seatrout and Atlantic croaker during 1975-97.

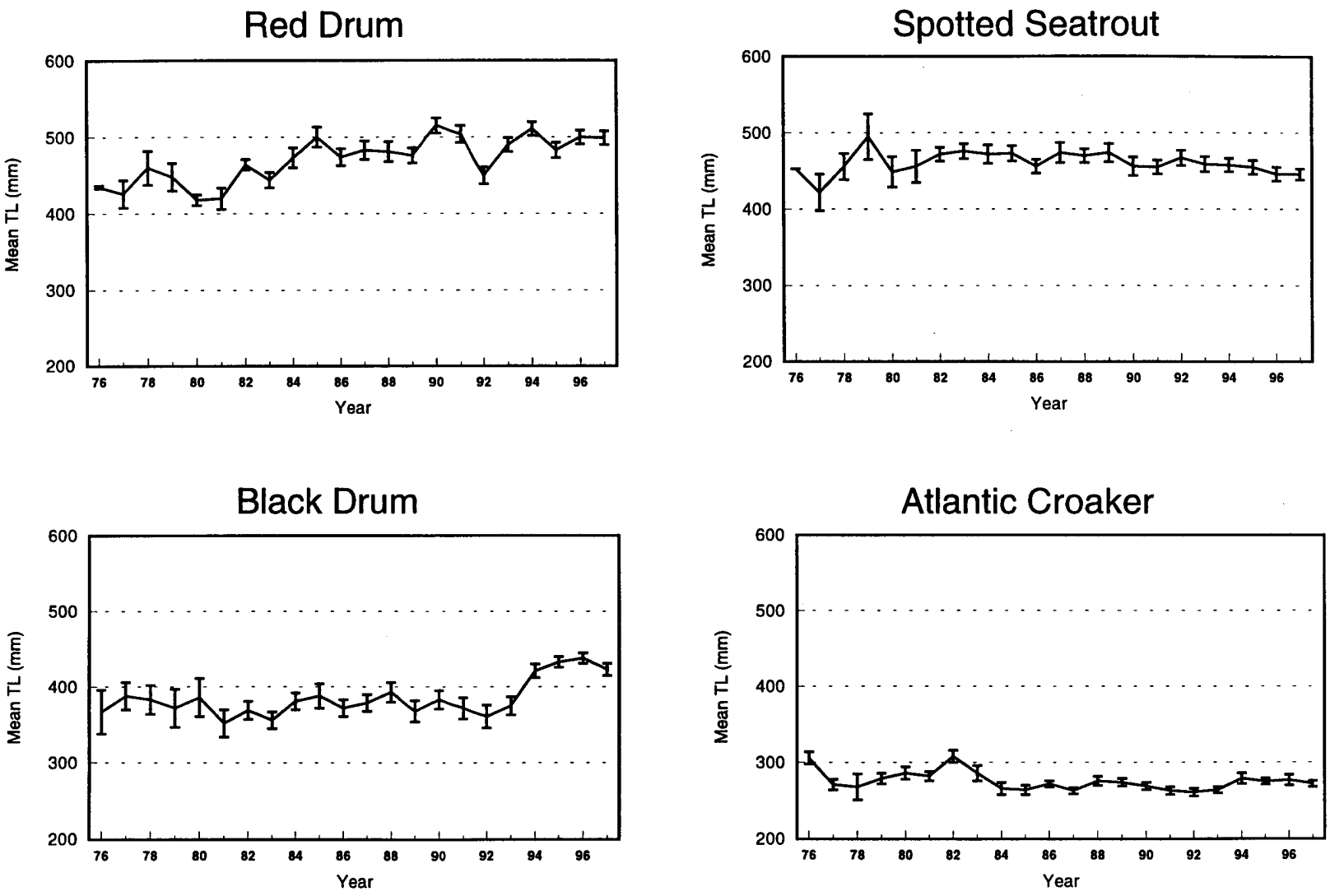

Figure 4. Spring gill net mean total lengths (mm ± 1 SE) for red drum, black drum, spotted seatrout and Atlantic croaker during 1976-97.

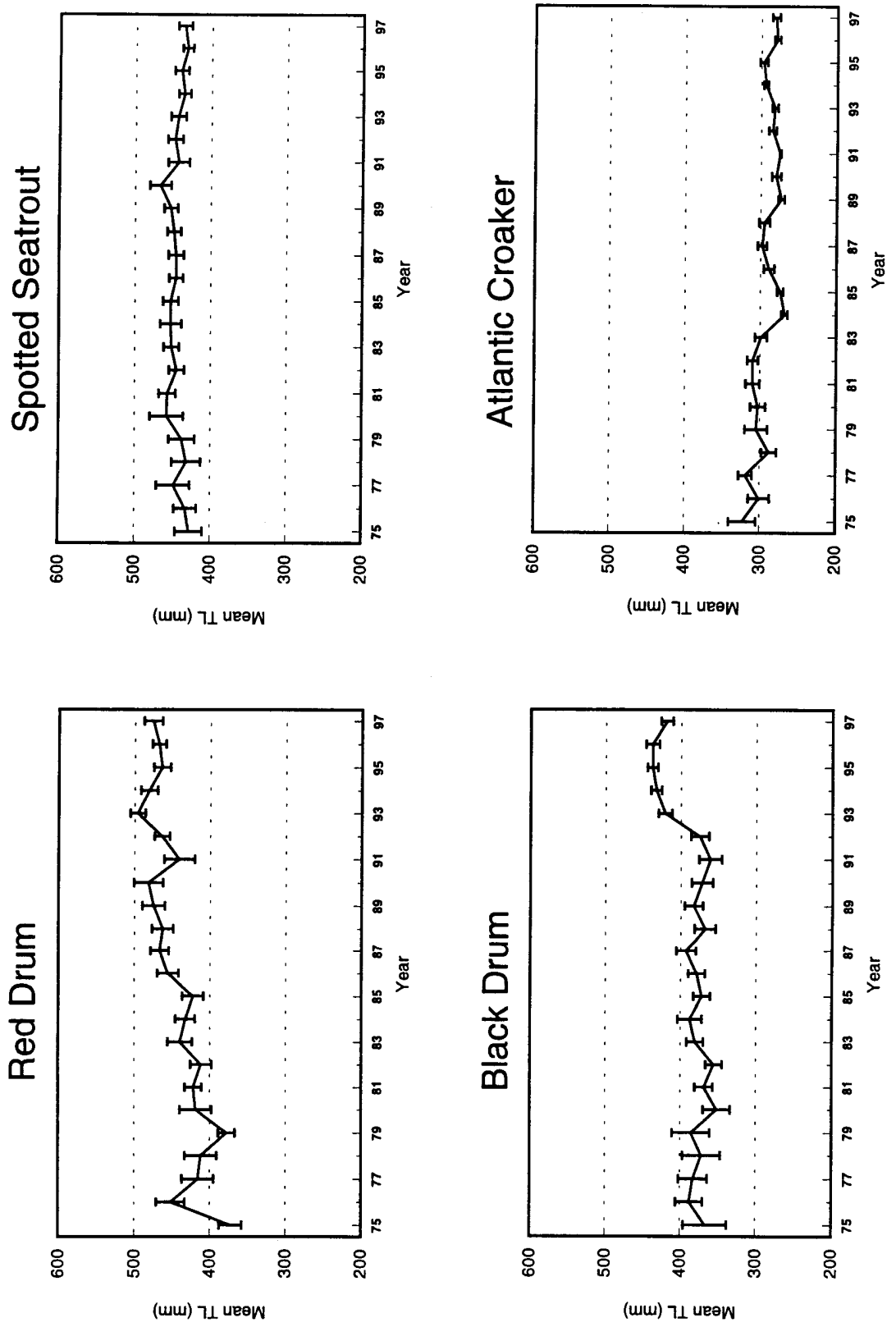

Figure 5. Fall gill net mean total lengths (mm ± 1 SE) for red drum, black drum, spotted seatrout and Atlantic croaker during 1975-97.

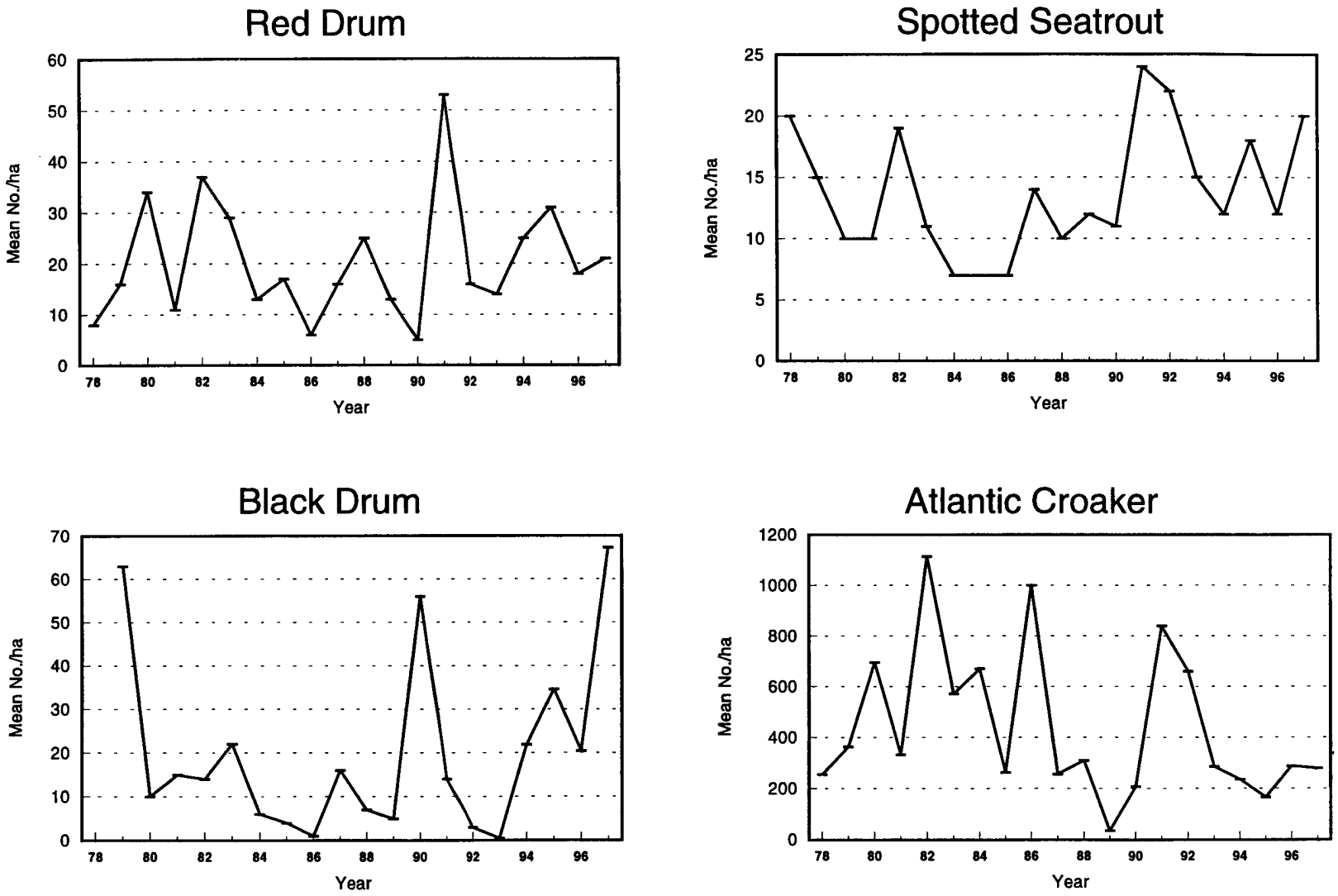

Figure 6. Seasonal bag seine mean catch rates (No./ha) for juvenile red drum (Nov-Mar), black drum (Jun-Jul), spotted seatrout (Jul-Nov) and Atlantic croaker (Feb-May) during 1978-97. Red drum 35-75 mm, spotted seatrout 20-75 mm, black drum 35-110 mm and Atlantic croaker 30-85 mm are considered young-of-the-year.

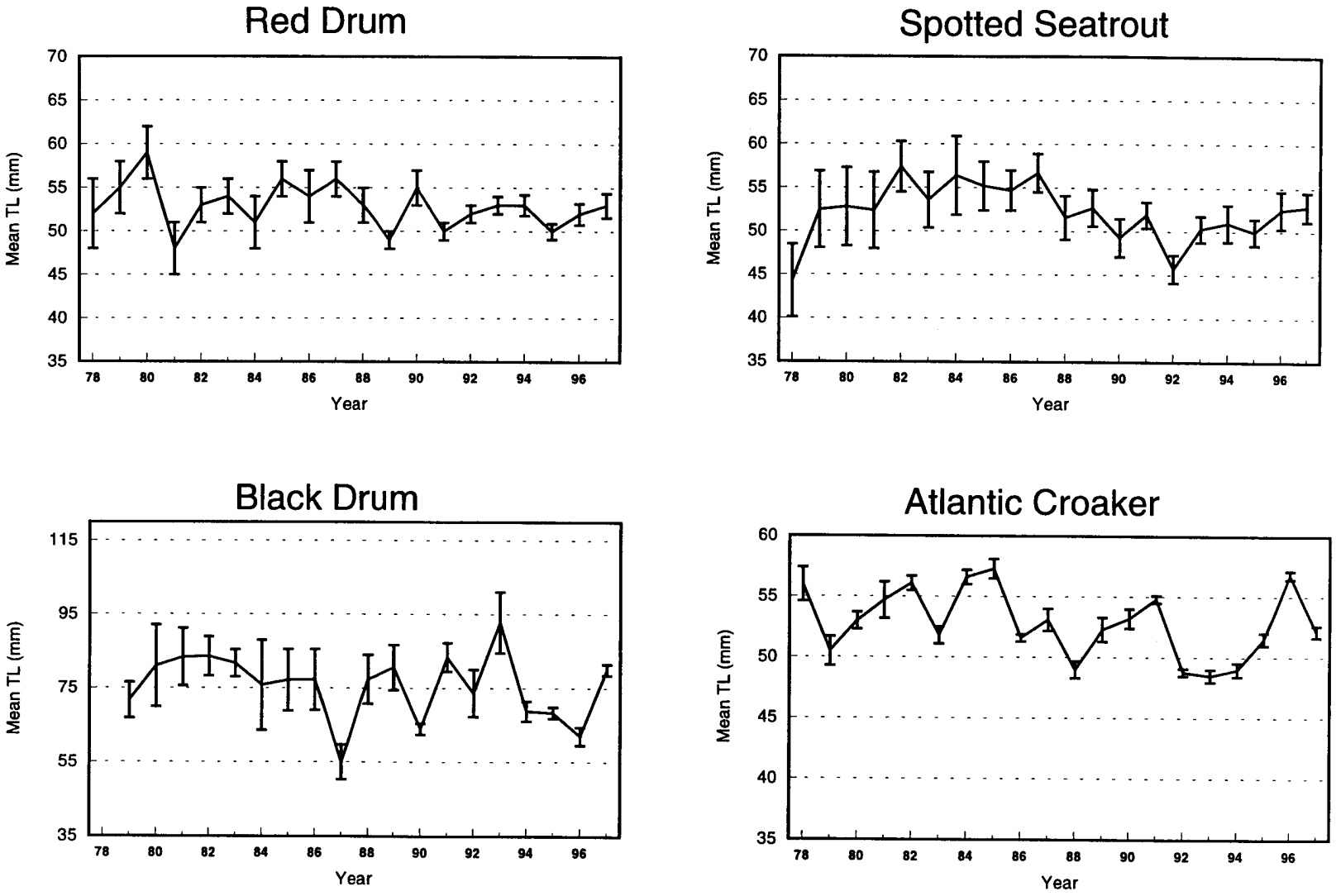

Figure 7. Seasonal bag seine mean total lengths (mm ± 1 SE) for juvenile red drum (Nov-Mar), black drum (Jun-Jul), spotted seatrout (Jul-Nov) and Atlantic croaker (Feb-May) during 1978-97. Red drum 35-75 mm, spotted seatrout 20-75 mm, black drum 35-110 mm and Atlantic croaker 30-85 mm are considered young-of-the-year.

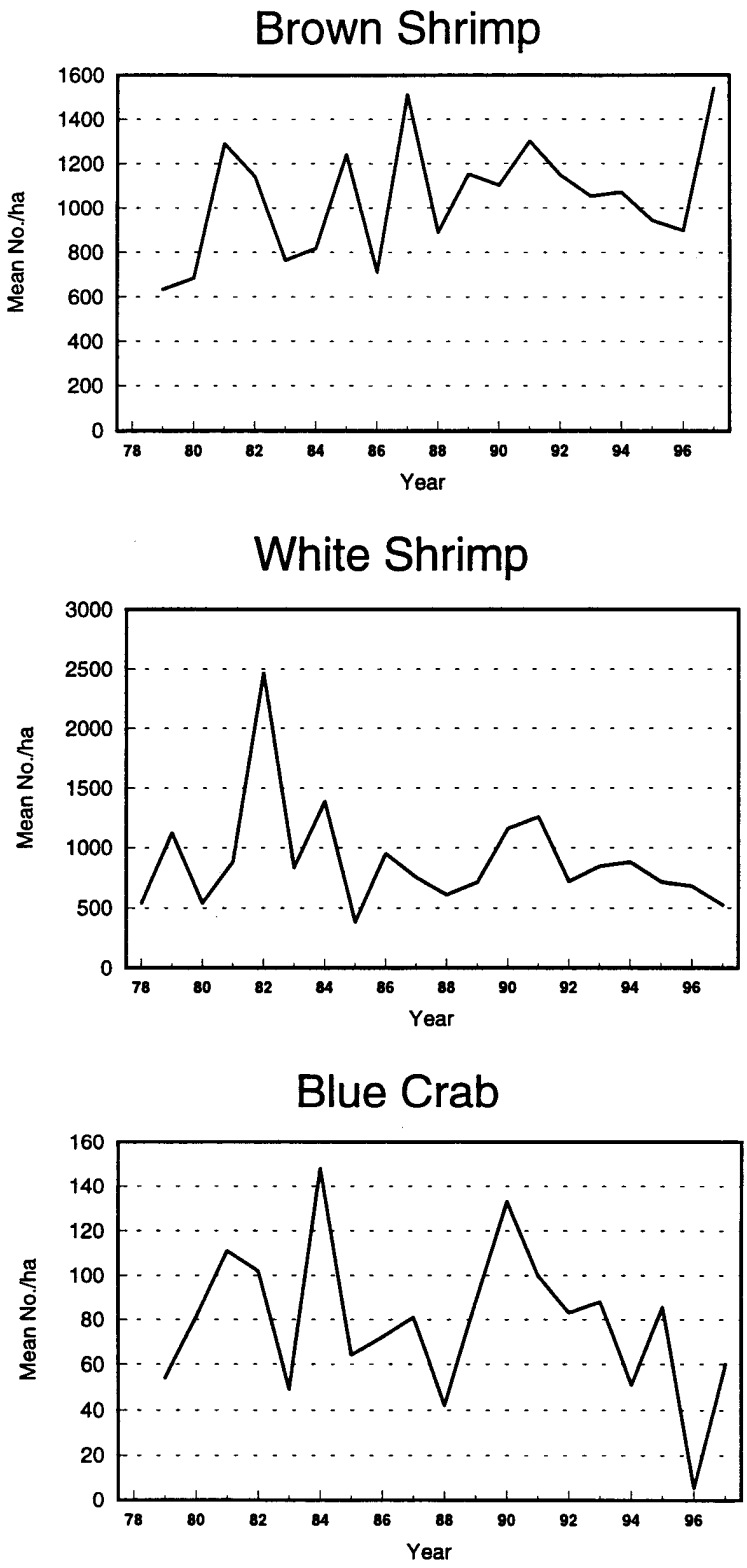

Figure 8. Seasonal bag seine mean catch rates (No./ha) for juvenile brown shrimp (Apr-Jul), white shrimp (Jul-Nov) and blue crab (Mar-Jun) during 1978-97. Brown and white shrimp 33-82 mm and blue crab 13-42 mm are considered young-of-the-year.

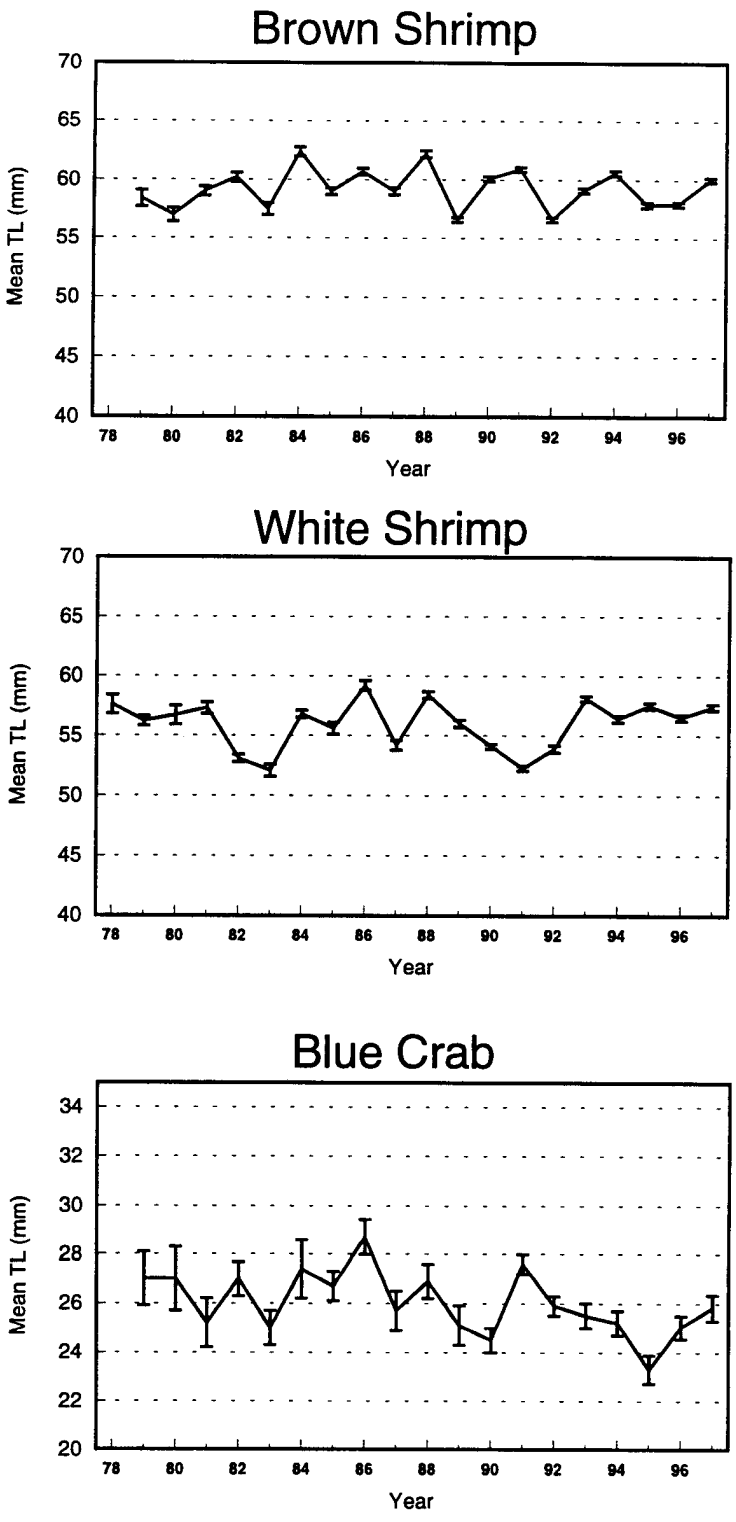

Figure 9. Seasonal bag seine mean total lengths (mm ± 1 SE) for juvenile brown shrimp (Apr-Jul), white shrimp (Jul-Nov) and blue crab (Mar-Jun) during 1978-97. Brown and white shrimp 33-82 mm and blue crab 13-42 mm are considered young-of-the-year.

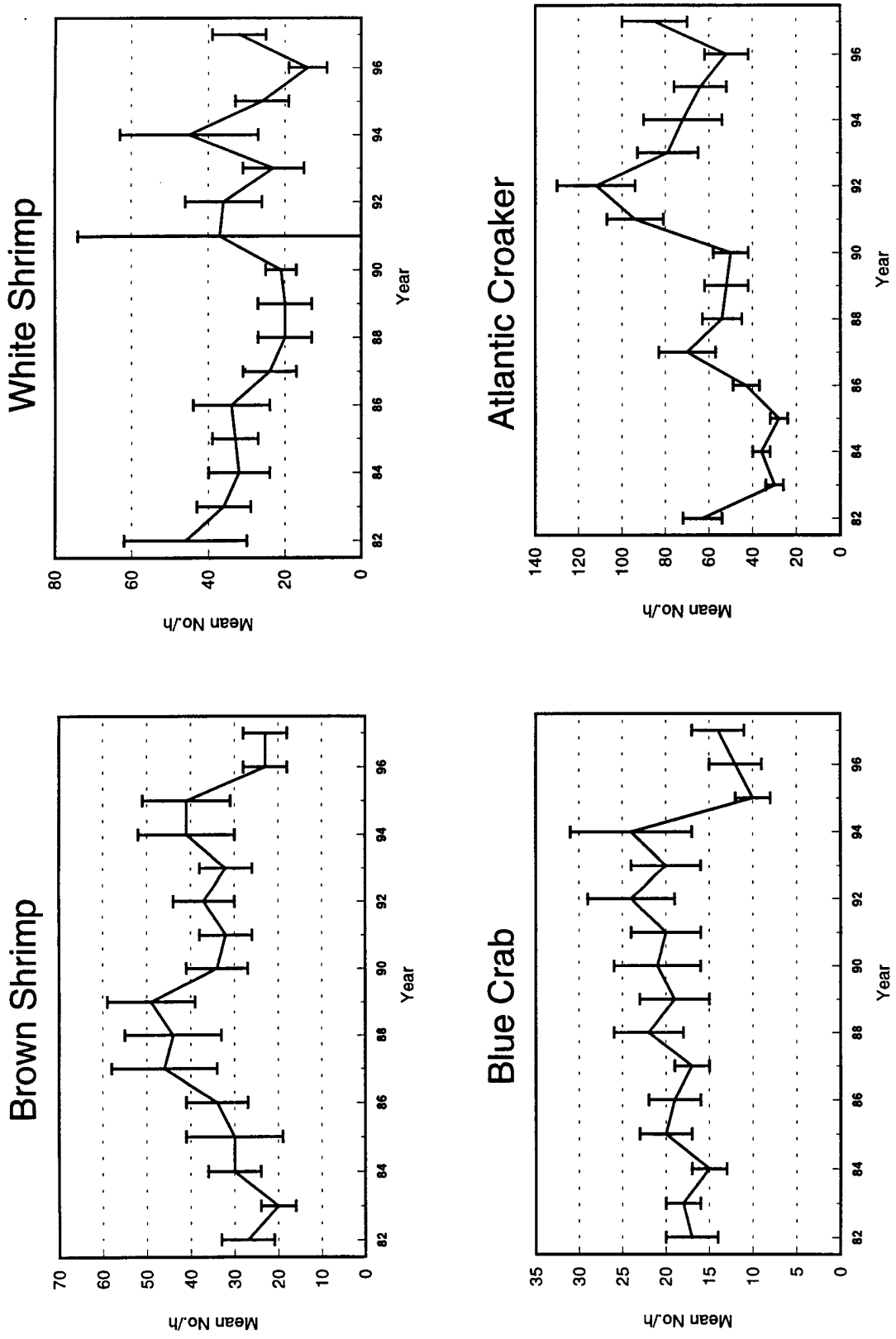

Figure 10. Annual bay trawl catch rates (No./h $\pm$ 1 SE) for brown shrimp, white shrimp, blue crab and Atlantic croaker during 1982-97.

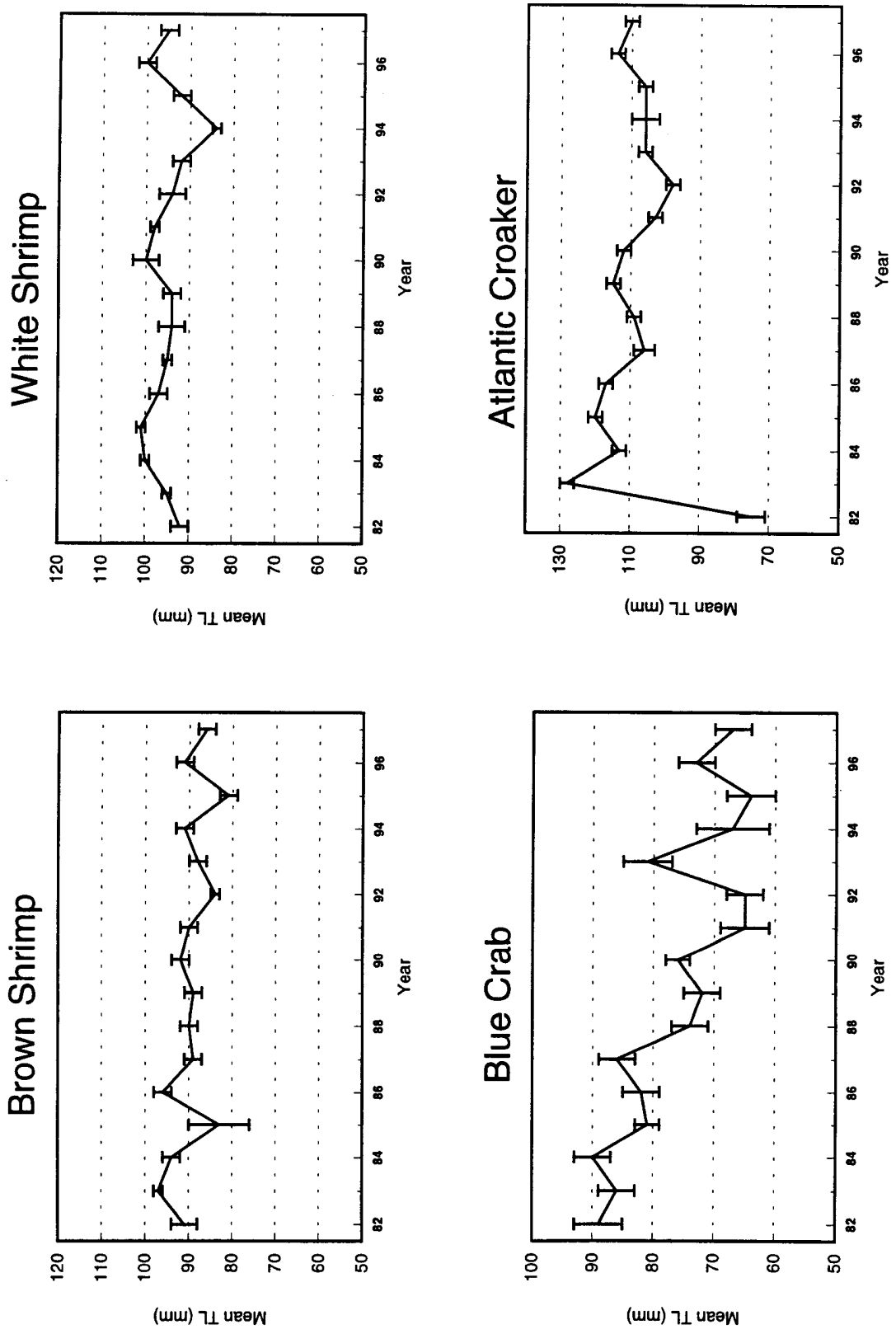

Figure 11. Annual bay trawl mean total lengths (mm ± 1 SE) for brown shrimp, white shrimp, blue crab and Atlantic croaker during 1982-97.

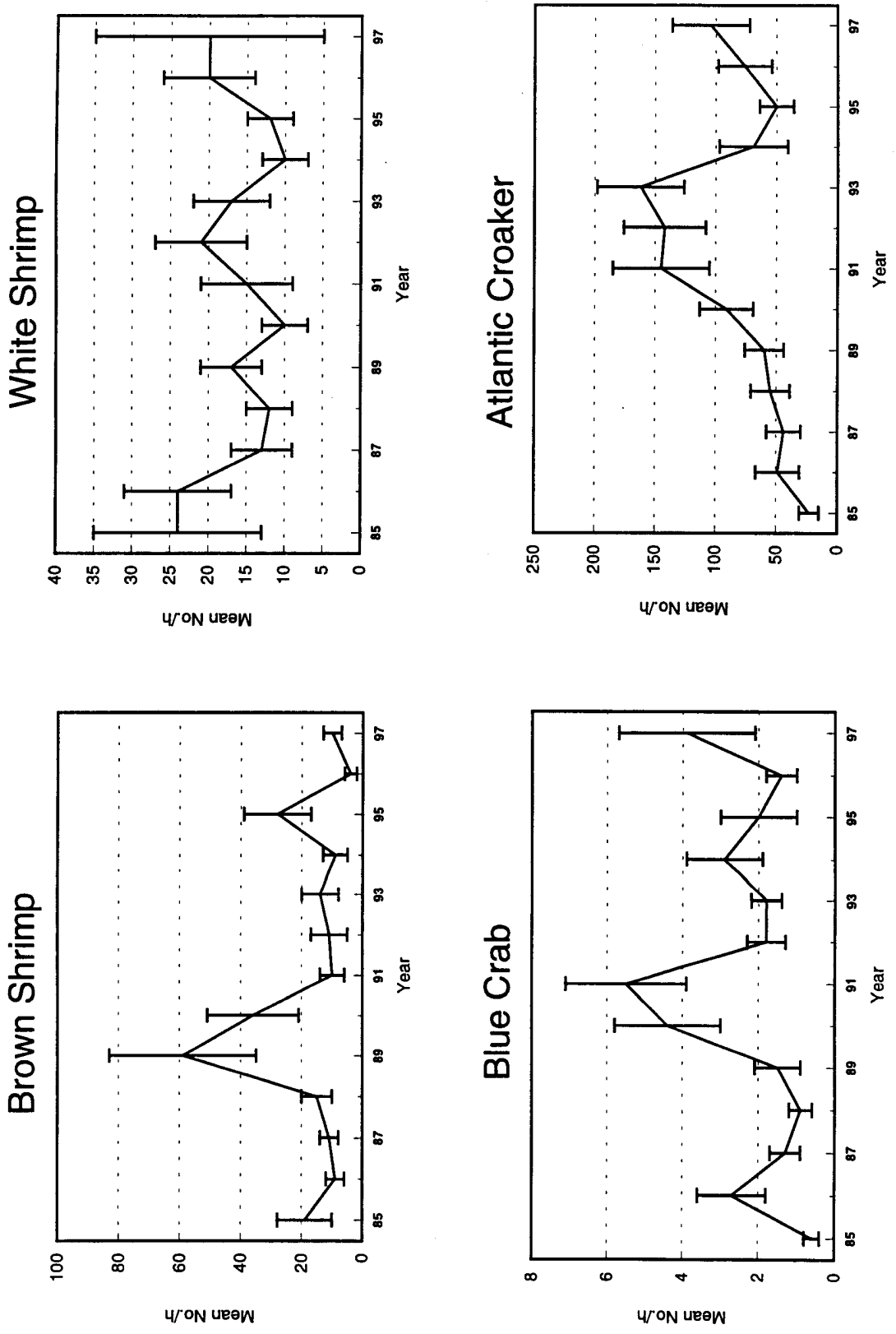

Figure 12. Annual gulf trawl catch rates (No./h ± 1 SE) for brown shrimp, white shrimp, blue crab and Atlantic croaker during 1985-97.

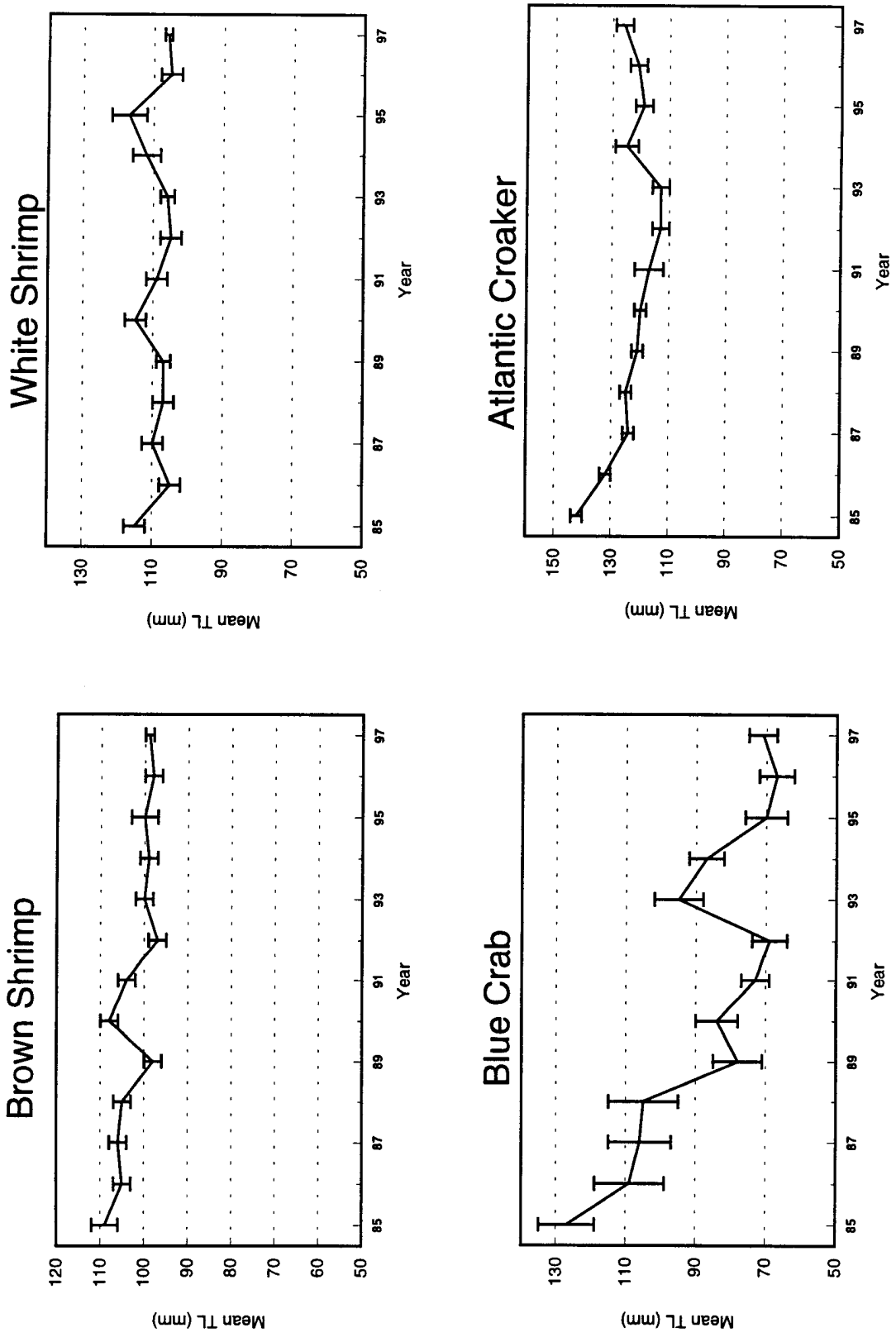

Figure 13. Annual gulf trawl mean total lengths (mm $\pm$ 1 SE) for brown shrimp, white shrimp, blue crab and Atlantic croaker during 1985-97.

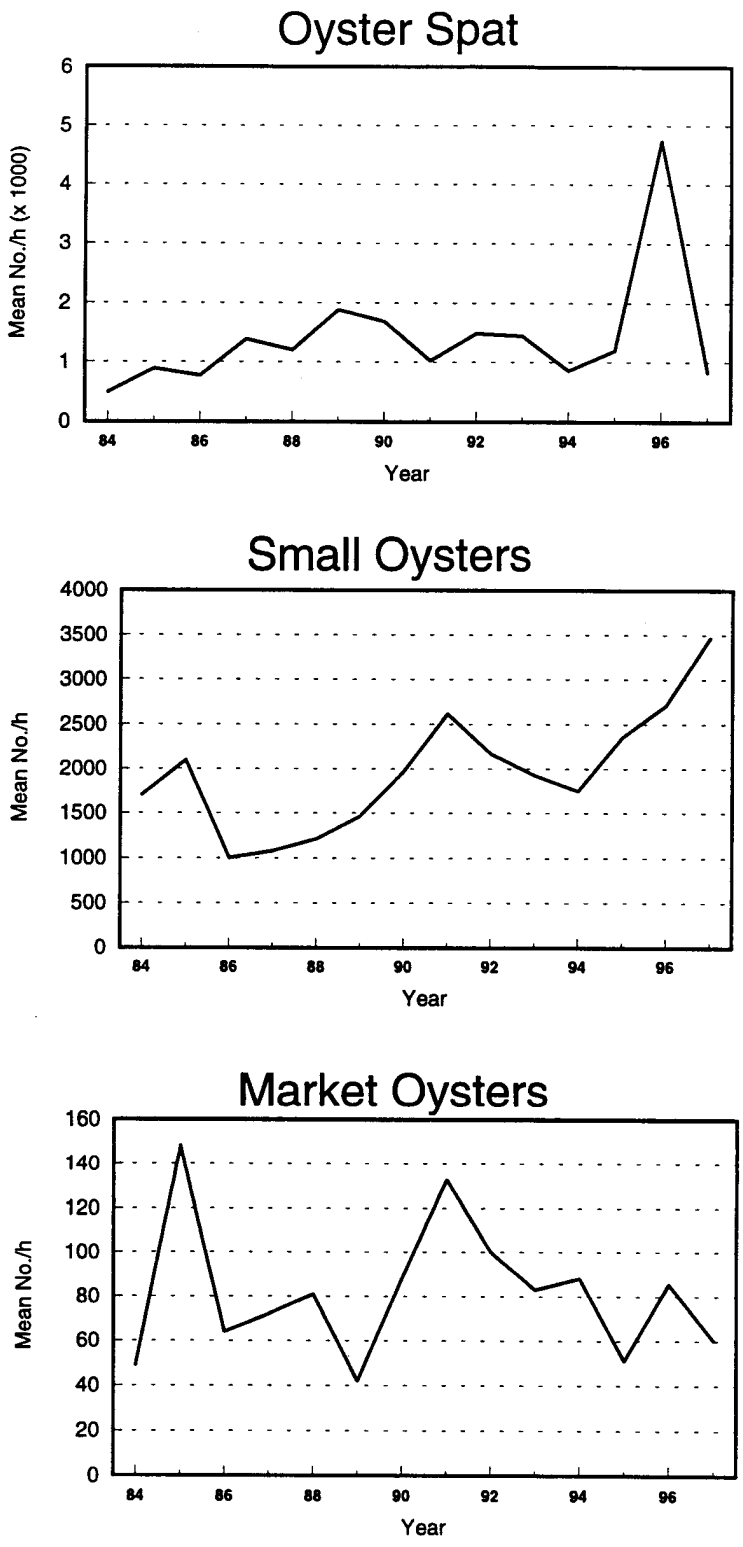

Figure 14. Annual mean oyster dredge catch rates (No./h) for Eastern oyster spat (≤25 mm), small oysters (26-75 mm) and market oysters (≥76 mm) during 1984-97.

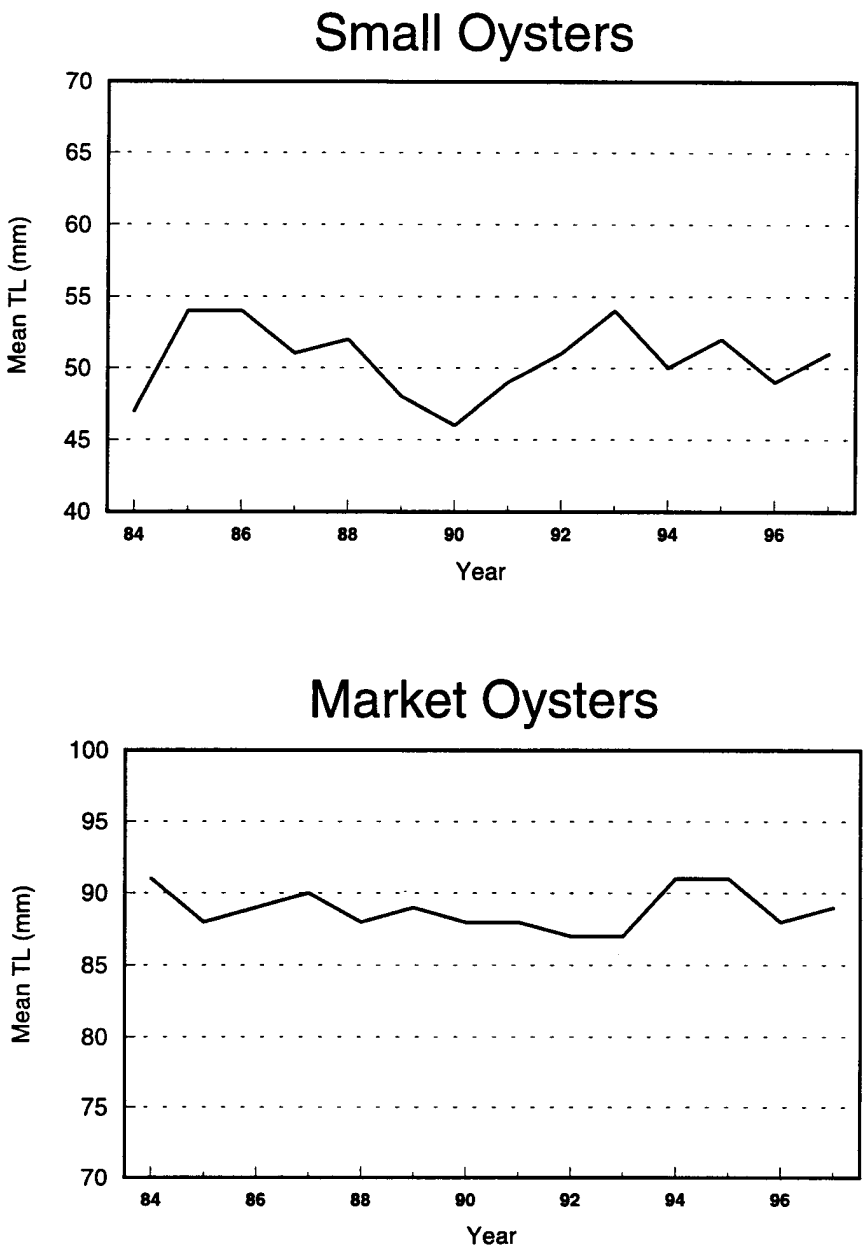

Figure 15. Annual mean oyster dredge total lengths (mm) for small and market Eastern oysters during 1984-97.

Appendix A. Summary of historical sampling dates, gear description, procedures, dates, number of samples collected, weighting factors, and list of species collected.

Table A.1. Historical sampling dates (month/year) by bay system and gear.

GEAR	SABINE	GALVESTON	EAST MATAGORDA	MATAGORDA	SAN ANTONIO	ARANSAS	CORPUS CHRISTI	UPPER LAGUNA	LOWER LAGUNA
GILL NET	April 1986-Present	Nov. 1975-Present	Oct. 1976-Present	Nov. 1975-Present	Nov. 1975-Present	Nov. 1975-Present	Nov. 1975-Present	Nov. 1975-Present	Nov. 1975-Present
GULF TRAWL	Jul. 1986-Present	Aug. 1985-Present	Not used.	Not used.	Aug. 1985-Present	Not used.	Feb. 1985-Present	Not used.	Aug. 1985-Present
BAY TRAWL	Jan. 1986-Present	Jan. 1982-Present	April 1987-Present	May 1982-Present	Jan. 1982-Present	Jan. 1982-Present	May 1982-Present	May 1982-Present	May 1982-Present
ICWW TRAWL	Jan. Dec. 1992-1995	Jan. Dec. 1992-1995	Jan. Dec. 1992-1995	Jan. Dec. 1992-1995	Jan. Dec. 1992-1995	Jan. Dec. 1992-1995	Jan. Dec. 1992-1995	Jan. Dec. 1992-1995	Jan. Dec. 1992-1995
BEACH SEINE	Oct. Nov. 1987-1995	Oct. Nov. 1987-1995	Oct. Nov. 1987-1995	Not used.	Oct. Nov. 1987-1995	Oct. Nov. 1987-1991	Not used.	Oct. Nov. 1987-1995	Oct. Nov. 1987-1995
BEACH BAG SEINE	Oct. Nov. 1987-1995	Oct. Nov. 1987-1995	Oct. Nov. 1987-1995	Not used.	Oct. Nov. 1987-1995	Oct. Nov. 1987-1991	Not used.	Oct. Nov. 1987-1995	Oct. Nov. 1987-1995
BAY BAG SEINE	Jan. 1986-Present	Oct. 1977-Present	Feb. 1983-Present	Oct. 1977-Present	Oct. 1977-Present	Oct. 1977-Present	Oct. 1977-Present	Oct. 1977-Present	Oct. 1977-Present
OYSTER REEF DREDGE	Jan. 1986-1991	Oct. 1984-Present	Jan. 1986-1991	Jan. 1986-Present	Jan. 1986-Present	Jan. 1986-Present	Jan. 1986-1991	Not used.	Jan. 1986-1991
NON-REEF DREDGE	1986-1989	1985-1989	1986-1989	1986-1989	1986-1989	1986-1989	1986-1989	1986-1988	1986-1988

Table A.2. Gear descriptions.

GEAR	GEAR DESCRIPTION
Gill Net	Monofilament, 183 m long; 1.2 m deep with separate 45.7 m sections of 7.6, 10.2 (#12 monofilament), 12.7 and 15.2 cm (#18 monofilament) stretched mesh tied together in ascending mesh size.
Trawl	6.1 m wide at mouth with 3.8 cm stretched nylon multifilament mesh throughout and doors 1.2 m long and 0.5 m tall.
Beach Seine	60.9 m long; 1.8 m deep with 7.6 cm stretched #12 monofilament mesh.
Bag Seine	18.3 m long; 1.8 m deep with 1.3 cm stretched nylon multifilament mesh in the 1.8 m wide central bag with remaining webbing 1.9 cm stretched mesh.
Oyster Dredge	Louisiana style 9-tooth: 46 cm wide, 25 cm tall with a 36 cm deep bag. Four bottom rows and one top row of linked metal rings 5 cm in diameter; top and bottom rows of 7.6 cm mesh webbing made of 0.8 cm nylon rope.

Table A.3. Historical sampling procedures by gear.

GEAR	HISTORICAL SAMPLING PROCEDURES
GILL NET	Monofilament gill nets have been systematically used in 7 Texas bay systems since November 1975; East Matagorda Bay was added in fall 1976 and Sabine Lake in spring 1986 (Figure 1). Prior to September 1984, sites for setting gill nets during spring (ten week period, generally, 15 April-15 June) and fall (Ten week period, generally, 15 September-15 November) were randomly selected from about 100 stations in each bay system (McEachron and Green 1985). Beginning September 1984, current site selection methods were adopted. Prior to fall 1981, no less than one nor more than 18 overnight gill net sets occurred in each season in each bay system. Since fall 1981, 45 gill nets were set overnight during each season in each bay system except East Matagorda Bay. In East Matagorda Bay, from fall 1981 to spring 1984, not less than six nor more than 12 gill nets were set during each season; since fall 1984, 20 sets were set in each season.
GULF TRAWLS	Trawls have been systematically used in 4 Gulf areas of Texas Territorial Seas since August 1985 and a total of 5 areas since July 1986.
ICWW TRAWLS	From January 1992 through December 1995, 6 monthly samples were collected in each of the 9 bay systems along the Texas coast.
BEACH SEINE	Beach seines were systematically used on Texas Gulf beaches from October 1987 through November 1995. Six beach seine samples were collected each month (from October 1987-November 1989; from May-November 1990-1995) along Gulf beach shoreline areas. (Dailey et al. 1991)

Table A.3. (Cont.)

BEACH BAG SEINE	Beach bag seine samples were systematically used on Texas Gulf beaches from October 1987 through November 1995. Six beach bag seine samples were collected each month (from October 1987-November 1989; from May-November 1990-1995) along Gulf beach shoreline areas. (Dailey et al. 1991)
BAY BAG SEINE	Bay bag seine samples have been systematically collected in 7 Texas bay systems since October 1977; sample collection began in the East Matagorda Bay system February 1983 and Sabine Lake in January 1986. Bay bag seine samples were collected by pulling the seine 15.2-30.5 m parallel to shore prior to September 1984; since then it has been pulled 15.2 m. Prior to September 1984, sites for sampling with bag seines (monthly) were randomly selected from about 100 stations in each bay system (McEachron and Green 1985). Prior to October 1981, six bag seine samples were collected each month in each bay system (except during June 1978 when no samples were collected). From October 1981 through August 1984, 10 bag seine samples were collected each month in each bay system; half of the samples were collected during each of the first and last two fullest weeks of each month (McEachron and Green 1985). Beginning September 1984, half of the monthly samples were collected during the 1st-15th and half during the 16th-31st of each month. From April 1988 through December 1989, 12 bag seine samples were collected each month in each bay system. Beginning January 1990, 16 bag seine samples were collected each month in each bay system. Beginning January 1992, 20 samples were collected in each bay system each month, except in East Matagorda Bay where only 10 samples were collected per month.
OYSTER REEF DREDGE	Oyster dredges have been systematically used in Texas bays since January 1986. The number of monthly samples collected in the Galveston Bay system were: 20 in 1984; 80 in 1985; and 56 in 1986-1991. Monthly samples collected in the Aransas Bay system were: 56 in 1986-1989; and 26

Table A.3. (Cont.)

OYSTER REEF DREDGE (Cont.)	in 1990-1991. From 1986 to 1991, 10 samples per month were collected in Sabine Lake and the Lower Laguna Madre and 26 monthly samples were collected in the Matagorda, San Antonio, Corpus Christi and East Matagorda Bay systems. Beginning January 1992, 30 samples were collected each month in the Galveston Bay system, and 20 samples in the Matagorda, San Antonio and Aransas Bay systems. Sampling in other systems were discontinued in January 1992.
NON-REEF DREDGE	Non-reef dredge samples were systematically collected in Texas bays from 1985-1989. In 1985, 10 monthly samples were collected in the Galveston Bay system. From 1986-1989, 10 monthly samples were collected in all bay systems.

Table A.4. Number of samples collected during routine monitoring by bay, gear, and year.

Gear	Year	Sabine Lake	Galveston	East Matagorda	Matagorda	San Antonio	Aransas	Corpus Christi	Upper Laguna Madre	Lower Laguna Madre	Coast-wide
Bay Bag Seine	1977	0	22	0	22	22	22	22	22	22	154
	1978	0	66	0	66	66	66	66	66	66	462
	1979	0	72	0	72	72	72	72	72	72	504
	1980	0	72	0	72	72	72	72	72	72	504
	1981	0	84	0	84	84	84	84	84	84	588
	1982	0	120	0	120	120	120	120	120	120	840
	1983	0	120	110	120	120	120	120	120	120	950
	1984	0	120	120	120	120	120	120	120	120	960
	1985	0	120	120	120	120	120	120	120	120	960
	1986	120	120	120	120	120	120	120	120	120	1,080
	1987	120	120	120	120	120	120	120	120	120	1,080
	1988	138	138	138	138	138	138	138	138	138	1,242
	1989	144	144	144	144	144	144	144	144	144	1,296
	1990	192	192	192	192	192	192	192	192	192	1,728
	1991	192	192	192	192	192	192	192	192	192	1,728
	1992	240	240	120	240	240	240	240	240	240	2,040
	1993	240	240	120	240	240	240	240	240	240	2,040
	1994	240	240	120	240	240	240	240	240	240	2,040
	1995	240	240	120	240	240	240	240	240	240	2,040
	1996	240	240	120	240	240	240	240	240	240	2,040
	1997	240	240	120	240	240	240	240	240	240	2,040
Bay Trawl	1977	0	9	0	10	10	0	0	0	10	39
	1978	0	55	0	52	45	0	0	0	55	207
	1979	0	55	0	47	0	0	0	0	55	157
	1980	0	1	0	0	0	0	0	0	0	1
	1981	0	0	0	0	0	0	0	0	0	0
	1982	0	240	0	240	240	160	80	80	160	1,200
	1983	0	240	0	240	240	240	240	120	120	1,440
	1984	0	240	0	240	240	240	240	120	120	1,440
	1985	0	240	0	240	240	240	240	120	120	1,440
	1986	240	240	0	240	240	240	240	120	120	1,440
	1987	240	240	90	240	240	240	240	120	120	1,770
	1988	240	240	120	240	240	240	240	120	120	1,800
	1989	240	240	120	240	240	240	240	120	120	1,800
	1990	120	240	120	240	240	240	240	120	120	1,680

Table A.4. (Cont.)

Gear	Year	Sabine Lake	Galveston	East Matagorda	Matagorda	San Antonio	Aransas	Corpus Christi	Upper Laguna Madre	Lower Laguna Madre	Coast-wide
Bay Trawl (cont.)	1991	120	240	120	240	240	240	240	120	120	1,680
	1992	120	240	120	240	240	240	240	120	120	1,680
	1993	120	240	120	240	240	240	240	120	120	1,680
	1994	120	240	120	240	240	240	240	120	120	1,680
	1995	120	240	120	240	240	240	240	120	120	1,680
	1996	120	240	120	240	240	240	240	120	120	1,680
	1997	120	240	120	240	240	240	240	120	120	1,680
Gill Net (Spring)	1976	0	2	0	1	1	1	2	1	1	9
	1977	0	8	4	4	4	4	6	6	4	40
	1978	0	6	6	8	6	6	6	6	6	50
	1979	0	10	10	11	10	10	8	10	10	79
	1980	0	8	9	9	10	10	10	9	10	75
	1981	0	7	6	7	8	8	7	7	7	57
	1982	0	45	6	45	45	45	45	45	45	321
	1983	0	45	8	45	45	45	45	45	45	323
	1984	0	45	7	45	45	45	45	45	45	322
	1985	0	45	20	45	45	45	45	45	45	335
	1986	45	45	20	45	45	45	45	45	45	380
	1987	45	45	20	45	45	45	45	45	45	380
	1988	45	45	20	45	45	45	45	45	45	380
	1989	45	45	20	45	45	45	45	45	45	380
	1990	45	45	20	45	45	45	45	45	45	380
	1991	45	45	20	45	45	45	45	45	45	380
	1992	45	45	20	45	45	45	45	45	45	380
	1993	45	45	20	45	45	45	45	45	45	380
	1994	45	45	20	45	45	45	45	45	45	380
	1995	45	45	20	45	45	45	45	45	45	380
	1996	45	45	20	45	45	45	45	45	45	380
	1997	45	45	20	45	45	45	45	45	45	380
Gill Net (Fall)	1975	2	8	0	5	5	5	5	5	5	40
	1976	0	12	4	8	8	8	8	8	8	64
	1977	0	8	8	8	8	8	8	8	8	64
	1978	0	7	7	7	7	8	8	8	7	59
	1979	0	18	9	17	17	16	15	17	16	125
	1980	0	11	10	9	9	10	10	10	10	79
	1981	0	45	8	45	45	45	45	45	45	323

Table A.4. (Cont.)

Gear	Year	Sabine Lake	Galveston	East Matagorda	Matagorda	San Antonio	Aransas	Corpus Christi	Upper Laguna Madre	Lower Laguna Madre	Coast-wide
Gill Net	1982	0	45	11	45	45	45	45	45	45	326
(Fall)	1983	0	45	12	45	45	45	45	45	45	327
(cont.)	1984	0	45	20	45	45	45	45	45	45	335
	1985	0	45	20	45	45	45	45	45	45	335
	1986	45	45	20	45	45	45	45	45	45	380
	1987	45	45	20	45	45	45	45	45	45	380
	1988	45	45	20	45	45	45	45	45	45	380
	1989	45	45	20	45	45	45	45	45	45	380
	1990	45	45	20	45	45	45	45	45	45	380
	1991	45	45	20	45	45	45	45	45	45	380
	1992	45	45	20	45	45	45	45	45	45	380
	1993	45	45	20	45	45	45	45	45	45	380
	1994	45	45	20	45	45	45	45	45	45	380
	1995	45	45	20	45	45	45	45	45	45	380
	1996	45	45	20	45	45	45	45	45	45	380
	1997	45	45	20	45	45	45	45	45	45	380

Table A.5. Number of samples collected by oyster reef dredge during routine monitoring by bay and year.

Gear	Year	Galveston	Matagorda	San Antonio	Aransas	Coastwide
Oyster Dredge	1984	240	0	0	0	240
	1985	959	0	0	0	959
	1986	672	312	312	672	1,968
	1987	672	312	312	672	1,968
	1988	672	312	312	672	1,968
	1989	672	312	312	672	1,968
	1990	672	312	312	672	1,968
	1991	672	312	312	312	1,604
	1992	360	240	240	240	1,080
	1993	360	240	240	240	1,080
	1994	360	240	240	240	1,080
	1995	360	240	240	240	1,080
	1996	360	240	240	240	1,080
	1997	360	240	240	240	1,080

Table A.6. Number of Gulf trawl samples collected during routine monitoring in 5 Gulf zones by Gulf area and year.

Year	Sabine Lake	Galveston	Port O'Connor	Port Aransas	Port Isabel	Coastwide
1985	0	80	80	176	80	416
1986	112	192	192	192	192	880
1987	192	192	192	192	192	960
1988	192	192	192	192	184	952
1989	192	192	192	184	189	949
1990	192	192	192	192	192	960
1991	192	192	192	184	192	952
1992	192	192	192	184	192	952
1993	192	192	192	192	192	960
1994	192	192	187	192	192	955
1995	192	192	192	184	192	952
1996	192	192	192	192	192	960
1997	192	192	188	192	192	956

Table A.7. Weighting factors used in calculating coastwide average catch rates.

Area	Gill net and bay bag seine[a]	Bay trawl[b]	ICWW trawl[c]	Oyster dredge[d]	Gulf trawl[e]
BAY SYSTEM					
Sabine	75.6	1.220	57.6		
Galveston	411.2	9.408	61.8	126	
East Matagorda	64.4	0.101	23.4		
Matagorda	284.8	6.288	27.4	42	
San Antonio	225.2	3.680	27.0	66	
Aransas	263.5	2.251	25.2	55	
Corpus Christi	171.3	3.357[f]	13.8		
Upper Laguna Madre	222.3	1.534	55.1		
Lower Laguna Madre	252.1	1.153	46.6		
Total	1,970.4	28.992	337.9	289	
GULF AREA					
Sabine					266
Galveston					273
Port O'Connor					277
Port Aransas					257
Port Isabel					248
Total					1,317

[a] Equals miles of shoreline (Matlock and Osborn 1982).

Table A.7. (Cont.)

[b] Equals total bay surface area (divided by 10,000) minus 1977 estimate of shallow water area (<=1.2 m)(for the upper and lower Laguna Madre) or minus the mean of 1972 and 1977 estimates (for other bays)(Matlock and Osborn 1982).

[c] Equals nautical miles of ICWW, trawls not done after 1995.

[d] Equals total number of grids containing oyster reef.

[e] Equals total number of Gulf trawlable grids.

[f] No estimate was available for 1977 shallow water area, so 1977 area was estimated as proportion of sampling grid zones that are designated as trawls grids, times the total surface area of the bay.

Table A.8. Species caught (alphabetical by scientific name; Robins et al. 1991) in Texas marine waters by TPW sampling gear during 1975-1997. Common names are assigned by TPW for identification purposes.

Scientific Name	Common Name
Finfish	
Abudefduf saxatilis	Sergeant major
Achirus lineatus	Lined sole
Adinia xenica	Diamond killifish
Aetobatis narinari	Spotted eagle ray
Agonostomus monticola	Mountain mullet
Albula vulpas	Bonefish
Alectis ciliaris	African pompano
Alosa chrysochloris	Skipjack herring
Aluterus heudeloti	Dotterel filefish
Aluterus schoepfi	Orange filefish
Aluterus scriptus	Scrawled filefish
Ambloplites rupestris	Rock bass
Ameiurus melas	Black bullhead
Ameiurus natalis	Yellow bullhead
Amia calva	Bowfin
Anchoa hepsetus	Striped anchovy
Anchoa lyolepis	Dusky anchovy
Anchoa mitchilli	Bay anchovy
Anchoa nasuta	Longnose anchovy
Ancylopsetta dilecta	Three-eye flounder
Ancylopsetta quadrocellata	Ocellated flounder
Anguilla rostrata	American eel
Antennarius radiosus	Singlespot frogfish
Antennarius striatus	Striated frogfish
Aplodinotus grunniens	Freshwater drum
Archosargus probatocephalus	Sheepshead
Arius felis	Hardhead catfish
Astroscopus y-graecum	Southern stargazer
Bagre marinus	Gafftopsail catfish
Bairdiella chrysoura	Silver perch
Balistes capriscus	Gray triggerfish
Bascanichthys bascanium	Sooty eel
Bascanichthy scuticaris	Whip eel
Bathygobius soporator	Frillfin goby
Bellator militaris	Horned searobin
Bodianus pulchellus	Spotfin hogfish
Bollmannia communis	Ragged goby
Bothus robinsi	Twospot flounder
Brevoortia patronus	Gulf menhaden
Brevoortia gunteri	Finescale menhaden
Brotula barbata	Bearded brotula
Calamus leucosteus	Whitebone porgy
Cantherhines pullus	Orangespotted filefish
Canthidermis maculata	Rough triggerfish
Caranx bartholomaei	Yellow jack
Caranx crysos	Blue runner
Caranx hippos	Crevalle jack
Caranx latus	Horse-eye jack
Caranx ruber	Bar jack
Carassius auratus	Goldfish
Carcharhinus acronotus	Blacknose shark
Carcharhinus brevipinna	Spinner shark

Table A.8. (Cont.)

Scientific Name	Common Name
Carcharhinus falciformis	Silky shark
Carcharhinus isodon	Finetooth shark
Carcharhinus leucas	Bull shark
Carcharhinus limbatus	Blacktip shark
Carcharhinus obscurus	Dusky shark
Carcharhinus plumbeus	Sandbar shark
Carcharhinus porosus	Smalltail shark
Centropomus mexicanus	Largescale fat snook
Centropomus parallelus	Fat snook
Centropomus undecimalis	Common snook
Centropristis ocyurus	Bank sea bass
Centropristis philadelphica	Rock sea bass
Chaetodipterus faber	Atlantic spadefish
Chaetodon ocellatus	Spotfin butterflyfish
Chasmodes bosquianus	Striped blenny
Chilomycterus schoepfi	Striped burrfish
Chloroscombrus chrysurus	Atlantic bumper
Citharichthys macrops	Spotted whiff
Citharichthys spilopterus	Bay whiff
Conodon nobilis	Barred grunt
Ctenopharyngodon idella	Grass carp
Cyclopsetta chittendeni	Mexican flounder
Cyclopsetta fimbriata	Spotfin flounder
Cynoscion arenarius	Sand seatrout
Cynoscion nebulosus	Spotted seatrout
Cynoscion nothus	Silver seatrout
Cyprinodon variegatus	Sheepshead minnow
Cyprinus carpio	Common carp
Dasyatis americana	Southern stingray
Dasyatis sabina	Atlantic stingray
Dasyatis say	Bluntnose stingray
Decapterus punctatus	Round scad
Diapterus auratus	Irish pompano
Dibranchus atlanticus	Atlantic batfish
Diodon hystrix	Porcupinefish
Diplectrum bivittatum	Dwarf sand perch
Diplectrum formosum	Sand perch
Diplodus holbrooki	Spottail pinfish
Dormitator maculatus	Fat sleeper
Dorosoma cepedianum	Gizzard shad
Dorosoma petenense	Threadfin shad
Echeneis naucrates	Sharksucker
Echiophis intertinctus	Spotted spoon-nose eel
Elagatis bipinnulata	Rainbow runner
Elops saurus	Ladyfish
Epinephelus nigritus	Warsaw grouper
Epinephelus niveatus	Snowy grouper
Equetus umbrosus	Cubbyu
Erotelis smaragdus	Emerald sleeper
Etropus crossotus	Fringed flounder
Etrumeus teres	Round herring
Eucinostomus argenteus	Spotfin mojarra
Eucinostomus gula	Silver jenny
Eucinostomus lefroyi	Mottled mojarra
Eucinostomus melanopterus	Flagfin mojarra
Evorthodus lyricus	Lyre goby

Table A.8. (Cont.)

Scientific Name	Common Name
Fundulus chrysotus	Golden topminnow
Fundulus grandis	Gulf killifish
Fundulus pulvereus	Bayou killifish
Fundulus similis	Longnose killifish
Gadella maraldi	(Barbelless codlet)
Gambusia affinis	Western mosquitofish
Gerres cinereus	Yellowfin mojarra
Gnathagnus egregius	Freckled stargazer
Gobiesox punctulatus	Stippled clingfish
Gobiesox strumosus	Skilletfish
Gobioides broussoneti	Violet goby
Gobiomorus dormitor	Bigmouth sleeper
Gobionellus boleosoma	Darter goby
Gobionellus hastatus	Sharptail goby
Gobionellus shufeldti	Freshwater goby
Gobiosoma bosc	Naked goby
Gobiosoma robustum	Code goby
Gonioplectrus hispanus	Spanish flag
Gunterichthys longipenis	Gold brotula
Gymnachirus texae	Fringed sole
Gymnothorax nigromarginatus	Blackedge moray
Gymnura micrura	Smooth butterfly ray
Haemulon aurolineatum	Tomtate
Halieutichthys aculeatus	Pancake batfish
Harengula jaguana	Scaled sardine
Hemicaranx amblyrhynchus	Bluntnose jack
Hemipteronotus novacula	Pearly razorfish
Hemiramphus balao	Balao
Hemiramphus brasiliensis	Ballyhoo
Hildebrandia flava	Yellow conger
Hippocampus erectus	Lined seahorse
Hippocampus zosterae	Dwarf seahorse
Histrio histrio	Sargassumfish
Holacanthus bermudensis	Blue angelfish
Hoplostethus mediterraneus	Armorhead
Hypleurochilus geminatus	Crested blenny
Hyporhamphus unifasciatus	Silverstripe halfbeak
Hypsoblennius hentz	Feather blenny
Hypsoblennius ionthas	Freckled blenny
Ictalurus furcatus	Blue catfish
Ictalurus punctatus	Channel catfish
Ictiobus bubalus	Smallmouth buffalo
Ictiobus cyprinellus	Bigmouth buffalo
Isurus oxyrinchus	Shortfin mako
Jenkinsia lamprotaenia	Dwarf herring
Kyphosus incisor	Yellow chub
Kyphosus sectatrix	Bermuda chub
Labrisomus nuchipinnis	Hairy blenny
Lactophrys quadricornis	Scrawled cowfish
Lagocephalus laevigatus	Smooth puffer
Lagodon rhomboides	Pinfish
Larimus fasciatus	Banded drum
Leiostomus xanthurus	Spot
Lepisosteus oculatus	Spotted gar
Lepisosteus osseus	Longnose gar
Lepisosteus platostomus	Shortnose gar

Table A.8. (Cont.)

Scientific Name	Common Name
Lepisosteus spatula	Alligator gar
Lepomis cyanellus	Green sunfish
Lepomis gulosus	Warmouth
Lepomis macrochirus	Bluegill
Lepomis megalotis	Longear sunfish
Lepomis microlophus	Redear sunfish
Lepophidium brevibarbe	Blackedge cusk-eel
Lobotes surinamensis	Tripletail
Lucania parva	Rainwater killifish
Lutjanus apodus	Schoolmaster
Lutjanus campechanus	Red snapper
Lutjanus griseus	Gray snapper
Lutjanus jocu	Dog snapper
Lutjanus synagris	Lane snapper
Lutjanus vivanus	Silk snapper
Megalops atlanticus	Tarpon
Membras martinica	Rough silverside
Menidia beryllina	Inland silverside
Menidia clarkhubbsi	Texas silverside
Menidia peninsulae	Tidewater silverside
Menticirrhus americanus	Southern kingfish
Menticirrhus littoralis	Gulf kingfish
Menticirrhus saxatilis	Northern kingfish
Microgobius gulosus	Clown goby
Microgobius thalassinus	Green goby
Micropogonias undulatus	Atlantic croaker
Monocanthus ciliatus	Fringed tilefish
Morone chrysops	White bass
Morone mississippiensis	Yellow bass
Morone saxatilis	Striped bass
Morone X	Hybrid bass (stripedxwhite)
Mugil cephalus	Striped mullet
Mugil curema	White mullet
Mullus auratus	Red goatfish
Mustelus canis	Smooth dogfish
Mycteroperca bonaci	Black grouper
Mycteroperca microlepis	Gag
Mycteroperca phenax	Scamp
Mycteroperca rubra	Comb grouper
Myrophis punctatus	Speckled worm eel
Narcine brasiliensis	Lesser electric ray
Negaprion brevirostris	Lemon shark
Neomerinthe hemingwayi	Spinycheek scorpionfish
Ogcocephalus nasutus	Shortnose batfish
Ogcocephalus pantostictus	Spotted batfish
Ogcocephalus parvus	Roughback batfish
Ogcocephalus radiatus	Polka-dot batfish
Ogcocephalus sp.	(Batfish-unidentified)
Oligoplites saurus	Leatherjacket
Ophichthus gomesi	Shrimp eel
Ophichthus ophis	Spotted snake eel
Ophichthus puncticeps	Palespotted eel
Ophidion grayi	Blotched cusk-eel
Ophidion holbrooki	Bank cusk-eel
Ophidion marginatum	Striped cusk-eel
Ophidion welshi	Crested cusk-eel

Table A.8. (Cont.)

Scientific Name	Common Name
Opisthonema oglinum	Atlantic thread herring
Opsanus beta	Gulf toadfish
Opsanus pardus	Leopard toadfish
Orthopristis chrysoptera	Pigfish
Parablennius marmoreus	Seaweed blenny
Paraconger caudilimbatus	Margintail conger
Paralichthys albigutta	Gulf flounder
Paralichthys lethostigma	Southern flounder
Paralichthys sp.	(Flounder-unidentified)
Paralichthys squamilentus	Broad flounder
Parasudis truculenta	Longnose greeneye
Peprilus alepidotus	Harvestfish
Peprilus burti	Gulf butterfish
Phaeoptyx conklini	Freckled cardinalfish
Physiculus fulvus	Metallic codling
Platybelone argalus	Keeltail needlefish
Poecilia formosa	Amazon molly
Poecilia latipinna	Sailfin molly
Pogonias cromis	Black drum
Polydactylus octonemus	Atlantic threadfin
Pomacentrus fuscus	Dusky damselfish
Pomacentrus variabilis	Cocoa damselfish
Pomadasys crocro	Burro grunt
Pomatomus saltatrix	Bluefish
Pomoxis annularis	White crappie
Pomoxis nigromaculatus	Black crappie
Pontinus longispinis	Longspine scorpionfish
Porichthys plectrodon	Atlantic midshipman
Priacanthus arenatus	Bigeye
Prionotus longispinosus	Bigeye searobin
Prionotus martis	Barred searobin
Prionotus ophryas	Bandtail searobin
Prionotus paralatus	Mexican searobin
Prionotus roseus	Bluespotted searobin
Prionotus rubio	Blackwing searobin
Prionotus scitulus	Leopard searobin
Prionotus stearnsi	Shortwing searobin
Prionotus tribulus	Bighead searobin
Pristigenys alta	Short bigeye
Pristipomoides aquilonaris	Wenchman
Pristis pectinata	Smalltooth sawfish
Pylodictis olivaris	Flathead catfish
Rachycentron canadum	Cobia
Raja eglanteria	Clearnose skate
Raja texana	Roundel skate
Remora remora	Remora
Rhinobatos lentiginosus	Atlantic guitarfish
Rhinoptera bonasus	Cownose ray
Rhizoprionodon terraenovae	Atlantic sharpnose shark
Rhomboplites aurorubens	Vermilion snapper
Ruvettus pretiosus	Oilfish
Rypticus saponaceus	Greater soapfish
Sardinella aurita	Spanish sardine
Saurida brasiliensis	Largescale lizardfish
Saurida caribbaea	Smallscale lizardfish
Scartella cristata	Molly miller

Table A.8. (Cont.)

Scientific Name	Common Name
Sciaenops ocellatus	Red drum
Scomber japonicus	Chub mackerel
Scomberomorus cavalla	King mackerel
Scomberomorus maculatus	Spanish mackerel
Scomberomorus sp.	(Mackerel-unidentified)
Scorpaena brasiliensis	Barbfish
Scorpaena calcarata	Smoothhead scorpionfish
Scorpaena plumieri	Spotted scorpionfish
Scyliorhinus retifer	Chain dogfish
Selar crumenophthalmus	Bigeye scad
Selene setapinnis	Atlantic moonfish
Selene vomer	Lookdown
Seriola dumerili	Greater amberjack
Seriola fasciata	Lesser amberjack
Seriola zonata	Banded rudderfish
Serraniculus pumilio	Pygmy sea bass
Serranus atrobranchus	Blackear bass
Serranus phoebe	Tattler
Serranus subligarius	Belted sandfish
Sparisoma radians	Bucktooth parrotfish
Sphoeroides parvus	Least puffer
Sphoeroides spengleri	Bandtail puffer
Sphyraena barracuda	Great barracuda
Sphyraena guachancho	Guaguanche
Sphyrna lewini	Scalloped hammerhead
Sphyrna mokarran	Great hammerhead
Sphyrna tiburo	Bonnethead
Sphyrna tudes	Smalleye hammerhead
Stellifer lanceolatus	Star drum
Stenotomus caprinus	Longspine porgy
Strongylura marina	Atlantic needlefish
Strongylura timucu	Timucu
Syacium gunteri	Shoal flounder
Syacium papillosum	Dusky flounder
Symphurus civitatus	Offshore tonguefish
Symphurus diomedianus	Spottedfin tonguefish
Symphurus parvus	Pygmy tonguefish
Symphurus plagiusa	Blackcheek tonguefish
Symphurus urospilus	Spottail tonguefish
Syngnathus floridae	Dusky pipefish
Syngnathus louisianae	Chain pipefish
Syngnathus pelagicus	Sargassum pipefish
Syngnathus scovelli	Gulf pipefish
Synodus foetens	Inshore lizardfish
Synodus poeyi	Offshore lizardfish
Thunnus thynnus	Bluefin tuna
Tilapia aurea	Blue tilapia
Trachinocephalus myops	Snakefish
Trachinotus carolinus	Florida pompano
Trachinotus falcatus	Permit
Trachinotus goodei	Palometa
Trachurus lathami	Rough scad
Trichiurus lepturus	Atlantic cutlassfish
Trinectes maculatus	Hogchoker
Umbrina coroides	Sand drum
Upeneus parvus	Dwarf goatfish

Table A.8. (Cont.)

Scientific Name	Common Name
Urophycis cirrata	Gulf hake
Urophycis floridana	Southern hake
Xanthichthys ringens	Sargassum triggerfish
Invertebrates	
Acetes americanus	(Sergestid shrimp)
Agriopoma texasianum	Texas venus
Albunea gibbesii	Surf mole crab
Albunea paretii	Beach mole crab
Alpheua formosus	Striped snapping shrimp
Alpheus estuariensis	Estuarine snapping shrimp
Alpheus armillatus	Banded river shrimp
Amaea mitchelli	Mitchell's wentletrap
Anachis avara	Greedy dovesnail
Anadara brasiliana	Incongruous ark
Anadara floridana	Cut-ribbed ark
Anadara ovalis	Blood ark
Anadara transversa	Transverse ark
Anatina anatina	Smooth duckclam
Anasimus latus	Stilt spider crab
Anomalocardia auberiana	Pointed-venus
Anomia simplex	Common jingle
Aplysia brasiliana	Sooty seahare
Arbacia punctulata	Red sea urchin
Arca imbricata	Mossy ark
Architectonica nobilis	Common sundial
Arcinella cornuta	Florida spiny jewelbox
Arenaeus cribrarius	Speckled swimming crab
Argopecten gibbus	Atlantic calico scallop
Argopecten irradians	Bay scallop
Armina tigrina	Tiger armina
Astropecten duplicatus	Two-spined starfish
Atrina serrata	Sawtooth pen shell
Aurelia aurita	Moon jellyfish
Barbatia candida	White-beard ark
Beroe ovata	Sea walnut
Brachidontes exustus	Scorched mussel
Brissopsis alta	Heart urchin
Bulla striata	Striate bubble
Bursatella leachii pleii	Ragged seahare
Busycon sinistrum	Lightning whelk
Busycotypus spiratus	Pearwhelk
Calappa flammea	Flame box crab
Calappa ocellata	Ocellate box crab
Calappa sulcata	Yellow box crab
Callianassa louisianensis	Gulf estuarine ghost shrimp
Callinectes marginatus	(Sargassum crab)
Callinectes sapidus	Blue crab
Callinectes similis	Lesser blue crab
Cancellaria reticulata	Common nutmeg
Cantharus cancellarius	Cancellate cantharus
Cerithidea pliculosa	Plicate hornsnail
Cerithium lutosum	Variable cerith
Chasmocarcinus mississippiensis	Roughwrist soft crab
Chione cancellata	Cross-barred venus

Table A.8. (Cont.)

Scientific Name	Common Name
Chione clenchi	Clench venus
Chione intapurpurea	Lady-in-waiting venus
Chiropsalmus quadrumanus	Sea wasp
Chrysaora quinquecirrha	Sea nettle
Claassenia sp.	Stonefly (nymph)
Class Malacostraca	(Malacostracan crustacean)
Clibanarius vittatus	Thinstripe hermit
Conus stimpsoni	Yellow cone
Crassostrea virginica	Eastern oyster
Crepidula convexa	Convex slippersnail
Crepidula fornicata	Common Atlantic slippersnail
Crepidula plana	Eastern white slippersnail
Cyphoma gibbosum	Flamingo tongue
Cyclinella tenuis	Thin cyclinella
Cyrtopleura costata	Angelwing
Dardanus fucosus	Bareye hermit
Dinocardium robustum	Atlantic giant-cockle
Distorsio clathrata	Atlantic distorsio
Donax variabilis	Variable coquina
Dosinia discus	Disk dosinia
Dromidia antillensis	Hairy sponge crab
Dyspanopeus texana	Gulf grassflat crab
Echinometra lucunter	Rock-boring urchin
Emerita portoricensis	Puerto Rican sand crab
Ensis minor	Minor jacknife
Euceramus praelongus	Olivepit porcelain crab
Eurypanopeus abbreviatus	Lobate mud crab
Eurypanopeus depressus	Flatback mud crab
Exhippolysmata oplophoroides	Redleg humpback shrimp
Family Amphinomidae	Family bristle worms
Family Ogyrididae	Family longeye shrimps
Fasciolaria lilium lilium	Banded tulip
Glypturus acanthochirus	Ghost shrimp
Haminoea antillarum	Antilles glassy-bubble
Haminoea succinea	Amber glassy-bubble
Hepatus epheliticus	Calico box crab
Hepatus pudibundus	Flecked box crab
Heterocrypta granulata	Smooth elbow crab
Hexapanopeus angustifrons	Smooth mud crab
Hexapanopeus paulensis	Knobbed mud crab
Hypoconcha arcuata	Granulate shellback shrimp
Hypoconcha sabulosa	Shellback crab (Dromiid)
Ischadium recurvum	Hooked mussel
Isocheles wurdemanni	Surf hermit
Isonychia sp.	Mayfly (nymph)
Laevicardium mortoni	Morton eggcockle
Latreutes fucorum	Slender sargassum shrimp
Latreutes parvulus	Sargassum shrimp
Leander tenuicornis	Brown grass shrimp
Leiolambrus nitidus	White elbow crab
Lepidopa benedicti	(Gulf mole crab)
Libinia dubia	Longnose spider crab
Libinia emarginata	Portly spider crab
Littorina irrorata	Marsh periwinkle
Loligo pealeii	Longfin squid
Loligo pleii	Arrow squid

Table A.8. (Cont.)

Scientific Name	Common Name
Lolliguncula brevis	Atlantic brief squid
Lucifer faxoni	Sergestid shrimp
Lucina pectinata	Thick lucine
Luidia alternata	Banded sea star
Luidia clathrata	Large sea star
Lysiosquilla scabricauda	(Giant) mantis shrimp
Lysmata wurdemanni	Peppermint shrimp
Lytechinus variegatus	Short spined sea urchin
Macoma brevifrons	Short macoma
Macoma mitchelli	Mitchell macoma
Macrobrachium acanthurus	Cinnamon river shrimp
Macrobrachium ohione	Ohio shrimp
Macrobranchium olfersi	Bristled river shrimp
Macrobranchium sp.	(River shrimp-unidentified)
Macrocallista maculata	Calico clam
Mactra fragilis	Fragile Atlantic mactra
Melampus bidentatus	Eastern melampus
Mellita quinquiesperforata	Five-lunuled sand dollar
Menippe adina	Gulf stone crab
Mercenaria campechiensis	Southern quahog
Mercenaria campechiensis texana	Texas quahog
Metoporhaphis calcarata	False arrow crab
Mnemiopsis mccradyi	Phosphorus jelly
Molgula manhattensis	Sea squirt
Mulinia lateralis	Dwarf surf clam
Muricanthus fluvescens	Giant eastern murex
Nassarius vibex	Bruised nassa
Nemopsis bachei	(Hydromedusa)
Neritina virginea	Virgin nerite
Neverita duplicata	Shark eye
Noetia ponderosa	Ponderous ark
Octopus vulgaris	Common octopus
Oculina diffusa	Ivory coral
Ocypode quadrata	Atlantic ghost crab
Oliva sayana	Lettered olive
Ophiolepis elegans	Brittle star
Orchestia grillus	Beach flea (amphipod)
Ostreola equestris	Crested oyster
Ovalipes floridanus	Florida lady crab
Paguristes hummi	(Blue spot hermit crab)
Pagurus annulipes	(Brown-banded hermit crab)
Pagurus brevidactylus	Short-fingered hermit
Pagurus impressus	Dimpled hermit
Pagurus longicarpus	Longwrist hermit
Pagurus pollicaris	Flatclaw hermit
Palaemonetes pugio	Daggerblade grass shrimp
Palaemonetes vulgaris	Marsh grass shrimp
Panopeus simpsoni	Oystershell mud crab
Paranthus rapiformis	Onion anemone
Parthenope serrata	Sawtooth elbow crab
Pelia mutica	Cryptic teardrop crab
Penaeus aztecus	Brown shrimp
Penaeus duorarum	Pink shrimp
Penaeus setiferus	White shrimp
Perna perna	Edible brown mussel
Persephona crinita	Pink purse crab

Table A.8. (Cont.)

Scientific Name	Common Name
Persephona mediterranea	Mottled purse crab
Petrochirus diogenes	Giant hermit
Petrolisthes armatus	Green porcelain crab
Phalium granulatum	Scotch bonnet
Physalia physalis	Portuguese man-of-war
Pinnotheres maculatus	Squatter pea crab
Pisania tincta	Tinted canthurus
Pleurobranchaea tarda	(Side-gilled slug)
Pleuroploca gigantea	Horse conch
Podochela riisei	Longfinger neck crab
Podochela sidneyi	Shortfinger neck crab
Polycera hummi	Humm's polycera
Polymesoda maritima	Southern marshclam
Porcellana sayana	Spotted porcelain crab
Porcellana sigsbeiana	Striped porcelain crab
Portunus anceps	Delicate swimming crab
Portunus gibbesii	Iridescent swimming crab
Portunus sayi	Sargassum swimming crab
Portunus spinicarpus	Longspine swimming crab
Portunus spinimanus	Blotched swimming crab
Portunus ventralis	(Portunid swimming crab)
Procambarus clarkii	Red swamp crawfish
Pseudocyphoma intermedium	Intermediate cyphoma
Rangia cuneata	Atlantic rangia
Rangia flexuosa	Brown rangia
Raninoides louisianensis	Gulf frog crab
Renilla mulleri	Sea pansy
Rhithropanopeus harrisii	Harris mud crab
Scyllaea pelagica	Sargassum nudibranch
Sesarma reticulatum	Heavy marsh crab
Sicyonia brevirostris	Brown rock shrimp
Sicyonia dorsalis	Lesser rock shrimp
Sicyonia stimpsoni	Eyespot rock shrimp
Sicyonia typica	Kinglet rock shrimp
Simnialena marferula	Sea-whip simnia
Sinum perspectivum	White baby-ear
Solariorbis blakei	(Vitrinella)
Solenocera vioscai	Humpback shrimp
Speocarcinus lobatus	Gulf squareback crab
Spisula lidissima	Atlantic surfclam
Squilla chydaea	(Offshore mantis shrimp)
Squilla empusa	Mantis shrimp
Squilla neglecta	Lesser mantis shrimp
Stenorhynchus seticornis	Yellowline arrow crab
Stomolophus meleagris	Cabbagehead
Strombus alatus	Florida fighting conch
Suborder Zygoptera	(Damselfly nymphs)
Synalpheus fritzmuelleri	Speckled snapping shrimp
Tagelus plebeius	Stout tagelus
Tellina alternata	Alternate tellin
Tellina tampaensis	Tampa tellin
Terebra protexta	Fine-ribbed auger
Thais haemastoma floridana	Florida rocksnail
Thyone mexicana	Sea cucumber
Tonna galea	Giant tun
Tozeuma carolinense	Arrow shrimp

Table A.8. (Cont.)

Scientific Name	Common Name
Trachycardium muricatum	Yellow pricklycockle
Trachypenaeus constrictus	Roughneck shrimp
Trachypenaeus similis	Roughback shrimp
Uca panacea	Gulf sand fiddler
Uca spinicarpa	Spined fiddler
Upogebia affinis	Coastal mud shrimp
Velella velella	By-the-wind sailor
Xiphopenaeus kroyeri	Seabob

Appendix B. Summary of hydrological data collected for gill net, bay bag seine, oyster dredge, and bay and gulf trawl samples.

Table B.1. Mean surface salinity (o/oo) at sampled gill net sites by bay system during spring and fall, 1975-97. ND = no data.

	Sabine Lake		Galveston		East Matagorda		Matagorda		San Antonio		Aransas		Corpus Christi		Upper Laguna Madre		Lower Laguna Madre		Coastwide	
Year	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall
1975	ND	ND	ND	13.9	ND	ND	ND	22.3	ND	17.6	ND	18.5	ND	20.0	ND	33.3	ND	25.8	ND	20.5
1976	ND	ND	ND	19.6	ND	20.7	0.0	18.8	ND	17.9	ND	10.9	ND	14.9	35.5	26.0	ND	23.3	12.5	18.9
1977	ND	ND	15.4	23.2	14.2	18.6	19.3	15.0	14.3	19.1	9.0	19.1	18.3	30.9	26.1	37.0	28.5	30.5	18.2	24.0
1978	ND	ND	18.5	21.3	20.8	18.4	19.2	15.6	26.1	13.9	19.0	12.5	26.5	23.6	38.2	39.3	31.8	18.3	24.5	20.4
1979	ND	ND	7.6	13.3	14.0	11.8	11.1	9.6	7.5	12.3	9.4	7.7	18.2	23.4	35.0	28.2	30.3	26.0	15.8	16.2
1980	ND	ND	11.3	22.7	17.0	24.1	14.3	23.4	20.8	18.2	17.4	19.7	30.0	27.0	37.3	24.6	30.3	30.8	21.2	23.6
1981	ND	ND	25.8	10.3	26.8	17.5	20.1	13.7	19.0	10.8	20.3	8.4	29.4	21.5	30.6	25.4	33.1	31.5	25.3	16.4
1982	ND	ND	12.1	20.5	18.3	24.1	12.4	23.0	17.3	26.9	12.1	25.1	23.6	32.8	24.0	39.8	27.0	36.1	17.4	27.9
1983	ND	ND	14.8	11.4	17.5	13.4	20.1	12.7	19.5	17.3	21.6	7.8	29.3	25.1	39.7	34.2	33.7	31.2	24.0	18.4
1984	ND	ND	21.4	19.0	23.1	15.8	23.9	19.0	27.4	29.6	22.1	26.8	30.2	33.6	38.9	44.2	35.1	23.3	27.5	26.1
1985	ND	ND	18.0	22.3	14.7	23.5	11.0	23.3	12.8	23.7	13.4	24.2	22.3	30.4	35.1	39.6	33.0	32.3	20.0	27.0
1986	11.7	13.1	15.0	20.9	25.3	14.1	23.9	22.3	21.9	23.0	21.4	24.4	30.9	36.6	41.7	46.9	34.0	38.3	25.0	27.8
1987	8.2	14.3	19.7	21.5	15.8	13.7	16.1	20.4	12.3	16.1	16.7	13.5	32.8	32.7	28.8	37.5	28.2	34.1	20.6	23.5
1988	7.8	12.1	18.3	21.8	24.9	27.3	25.4	32.4	23.8	23.0	21.3	24.8	33.6	36.9	42.3	47.9	32.8	31.0	26.1	29.1
1989	5.5	8.7	15.9	14.8	26.0	26.4	26.5	28.4	26.5	29.9	30.8	34.3	35.3	36.9	47.2	52.7	30.5	38.3	27.7	30.4
1990	2.0	10.4	12.4	19.3	19.2	27.8	19.6	25.3	23.7	24.3	27.0	22.2	31.5	27.0	41.6	51.9	31.2	39.0	23.9	27.9
1991	0.2	5.4	9.4	17.4	11.7	19.4	11.2	19.5	16.3	25.1	16.9	18.4	26.9	31.0	39.7	36.7	26.1	30.5	18.3	23.4
1992	2.0	12.1	10.4	22.4	11.5	23.4	5.7	23.1	2.7	20.9	4.1	17.6	16.7	26.7	18.9	29.5	24.2	33.5	11.0	23.9
1993	2.1	8.3	12.1	21.2	11.5	25.9	10.8	24.5	9.2	17.5	10.2	18.7	26.5	31.8	26.0	31.6	27.3	32.0	15.7	24.1
1994	1.4	5.1	11.3	12.3	21.7	24.3	18.2	18.8	12.2	18.5	17.3	22.4	27.7	31.2	31.1	39.9	29.9	34.5	19.2	23.0
1995	0.2	8.0	9.9	19.7	14.8	24.6	13.6	21.9	17.4	23.5	18.3	22.8	26.1	28.7	39.5	38.6	32.4	33.3	19.8	25.2
1996	10.7	9.1	23.9	20.1	28.1	20.8	30.4	23.9	26.1	26.4	30.9	31.6	33.8	37.4	44.5	49.2	34.0	30.8	30.1	28.7
1997	2.4	10.7	11.1	18.8	7.6	17.7	6.5	9.3	9.0	11.5	10.7	7.5	27.7	27.0	36.3	30.7	27.9	27.6	16.1	17.9

Table B.2. Mean surface water temperature (C) at sampled gill net sites by bay system during spring and fall, 1975-97. ND = no data.

Year	Sabine Lake		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	Spring	Fall
1975	ND	ND	ND	20.8	ND	ND	ND	21.3	ND	22.4	ND	17.4	ND	23.9	ND	23.0	ND	24.4	ND	21.6
1976	ND	ND	30.0	18.2	ND	14.5	ND	24.8	ND	24.6	ND	24.0	ND	24.2	27.0	19.6	ND	20.8	29.0	21.7
1977	ND	ND	24.9	20.6	25.0	21.3	25.3	23.1	25.8	23.3	25.6	22.7	25.5	23.3	26.4	21.3	26.6	24.1	25.6	22.4
1978	ND	ND	26.5	21.5	25.6	24.2	25.8	24.1	25.1	24.2	26.3	24.7	27.3	23.5	26.4	23.2	27.0	24.6	26.3	23.5
1979	ND	ND	26.5	22.8	27.5	23.4	27.3	23.6	27.3	24.2	26.8	24.0	27.1	24.5	28.1	25.0	27.4	25.6	27.1	24.1
1980	ND	ND	25.9	24.5	25.9	23.6	26.0	25.7	26.8	24.6	26.8	24.1	27.0	25.2	29.0	27.0	28.6	26.2	27.0	25.2
1981	ND	ND	27.1	25.4	27.3	23.1	26.0	24.6	27.4	25.0	27.4	24.7	27.3	25.3	26.9	25.9	26.9	26.3	27.0	25.2
1982	ND	ND	26.1	24.6	26.9	25.1	27.2	24.6	25.7	25.6	26.2	24.1	26.3	24.1	27.8	24.9	27.6	25.8	26.7	24.8
1983	ND	ND	25.7	25.3	25.8	25.9	25.0	25.6	25.6	25.3	26.2	25.2	26.6	25.3	27.4	27.0	26.5	26.8	26.0	25.7
1984	ND	ND	26.7	25.0	25.7	27.2	25.1	25.3	26.0	25.0	25.8	25.2	26.2	25.0	27.3	25.9	27.5	26.8	26.4	25.5
1985	ND	ND	27.9	25.5	28.6	25.6	27.5	25.1	26.3	27.3	27.5	25.8	26.3	26.0	27.6	26.3	28.2	27.4	27.5	26.1
1986	26.8	26.3	26.4	25.1	27.0	23.9	26.3	25.4	27.2	25.4	27.9	24.8	26.2	24.5	26.3	26.6	27.9	25.7	26.9	25.3
1987	25.7	24.0	26.4	24.0	27.1	24.5	26.4	25.1	26.7	26.3	26.4	24.8	25.9	24.8	27.6	26.2	25.2	25.2	26.4	25.0
1988	25.5	26.2	25.3	25.8	26.3	26.3	25.0	26.9	24.9	27.3	26.9	25.9	24.4	25.8	26.6	27.4	27.4	27.5	25.8	26.6
1989	25.0	24.9	25.7	24.0	28.2	25.6	26.4	24.3	26.6	24.1	26.6	24.1	26.8	25.5	26.5	26.4	27.4	27.0	26.5	24.9
1990	23.3	25.7	24.7	23.9	27.8	25.5	26.8	24.7	25.6	25.2	27.0	25.0	25.7	26.3	27.7	27.0	27.5	26.3	26.2	25.3
1991	27.0	24.9	24.3	23.8	27.8	24.1	26.5	23.6	26.7	25.4	27.0	23.2	28.1	25.0	28.3	25.7	28.6	25.8	26.8	24.5
1992	28.0	23.5	26.3	23.0	24.8	24.7	24.6	24.3	26.7	24.3	27.3	24.7	26.8	23.7	28.0	25.3	27.4	25.5	26.6	24.3
1993	25.9	22.9	25.8	22.4	26.9	24.1	25.6	23.2	26.1	24.0	26.3	24.0	25.8	23.7	25.2	24.8	26.7	25.3	26.0	23.8
1994	27.1	25.1	26.7	24.9	27.1	26.3	26.6	26.2	25.4	26.0	27.2	26.5	27.3	26.4	27.9	26.7	27.8	27.3	27.0	26.1
1995	26.0	24.8	26.1	24.7	26.6	25.5	25.8	25.1	26.6	25.2	26.9	25.9	26.8	25.5	27.3	26.4	27.2	26.7	26.6	25.5
1996	27.4	24.7	27.4	25.2	27.9	26.6	27.2	26.0	27.8	26.0	27.6	26.5	27.1	26.7	28.5	27.0	28.3	27.4	27.7	26.2
1997	25.6	22.8	26.4	22.8	26.0	24.5	25.5	23.1	26.7	22.9	27.0	23.7	27.2	23.5	28.1	23.9	27.2	24.5	26.7	23.4

Table B.3. Annual mean surface turbidity at sampled gill net sites by bay system during spring and fall 1975-97. ND = no data.

Year	Sabine Lake		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	Spring	Fall
Jackson Turbidity Units																				
1975	ND	ND	ND	53	ND	ND	ND	30	ND	43	ND	24	ND	27	ND	43	ND	28	ND	37
1976	ND	ND	109	52	ND	157	ND	33	ND	25	ND	64	ND	60	24	51	ND	38	79	50
1977	ND	ND	80	75	118	47	46	68	49	13	41	52	169	47	34	39	40	31	65	50
1978	ND	ND	47	44	36	16	68	74	55	20	55	50	61	47	66	68	37	39	54	48
1979	ND	ND	153	72	38	28	74	66	80	22	70	42	67	51	39	32	34	83	80	55
1980	ND	ND	99	69	67	49	74	33	17	19	53	40	51	36	57	55	64	71	64	49
1981	ND	ND	68	68	63	64	82	64	81	21	43	58	67	39	185	46	87	66	84	55
1982	ND	ND	66	56	82	55	75	47	35	27	91	33	49	38	63	32	113	79	72	47
1983	ND	ND	57	63	61	27	50	40	41	32	49	38	41	42	50	40	59	72	51	48
1984	ND	ND	43	34	27	25	35	45	47	40	40	39	47	38	69	56	113	90	54	47
1985	ND	ND	26	29	59	37	52	51	57	49	46	39	57	41	72	41	98	56	55	42
1986	43	28	32	35	64	37	60	31	46	32	38	41	57	26	61	85	53	60	48	43
Nephelometric Units																				
1987	30	18	18	17	42	19	28	19	26	15	11	7	22	7	14	11	23	13	21	14
1988	21	11	16	11	29	19	16	19	22	21	13	16	24	10	18	14	26	29	19	17
1989	25	9	12	9	16	22	36	15	30	12	22	8	18	12	12	9	45	13	24	11
1990	16	8	9	13	23	13	26	15	38	15	21	13	16	11	24	11	29	14	22	13
1991	15	6	20	8	50	21	29	15	19	13	23	13	13	12	25	18	13	10	21	12
1992	20	11	21	10	22	12	46	17	52	14	41	14	23	11	25	12	22	16	32	13
1993	24	11	24	16	35	14	46	16	29	11	24	15	17	14	18	15	23	14	27	14
1994	13	13	19	23	23	15	27	26	19	9	21	10	18	9	12	11	25	15	20	16
1995	26	8	38	11	47	20	39	20	21	8	22	13	27	13	15	9	36	12	30	13
1996	23	11	27	11	40	26	39	18	30	9	23	13	34	10	23	11	26	12	29	13
1997	20	9	19	18	47	23	44	33	27	24	22	22	14	13	17	12	24	12	25	20

Table B.4. Annual mean surface salinity (o/oo) at sampled bag seine sites by bay system during 1977-97. ND = no data.

Year	Sabine Lake	Galveston	East Matagorda	Matagorda	San Antonio	Aransas	Corpus Christi	Upper Laguna Madre	Lower Laguna Madre	Coastwide
1977	ND	21.9	ND	17.6	17.7	20.9	33.8	39.8	33.0	25.4
1978	ND	21.8	ND	19.7	20.6	19.9	29.5	39.6	29.2	25.0
1979	ND	12.2	ND	11.4	11.8	11.1	23.9	31.9	27.3	17.4
1980	ND	20.9	ND	19.9	21.0	19.8	28.1	29.6	28.8	23.4
1981	ND	18.2	ND	19.2	15.6	12.1	25.0	26.0	28.3	20.1
1982	ND	15.9	ND	18.2	17.0	17.6	27.6	29.8	29.7	21.3
1983	ND	12.2	15.4	16.5	17.3	16.8	27.5	36.4	31.7	21.2
1984	ND	19.5	17.8	21.6	23.2	22.6	31.8	39.5	29.9	25.5
1985	ND	17.0	16.9	19.7	17.5	19.7	28.1	36.7	32.1	23.2
1986	10.1	16.1	20.1	19.8	17.0	23.5	32.6	39.7	34.9	24.2
1987	7.6	18.1	15.3	15.4	10.8	13.7	28.7	31.4	31.5	19.9
1988	7.7	20.2	26.5	27.4	22.6	24.3	35.2	44.9	31.9	27.4
1989	6.6	15.1	26.9	26.9	27.4	31.4	35.6	48.6	34.2	28.5
1990	6.4	16.9	23.6	24.8	23.6	26.7	32.4	47.7	35.8	27.2
1991	2.6	12.4	17.3	16.7	19.3	17.7	30.8	40.0	28.8	21.1
1992	5.3	15.2	15.4	13.5	9.4	10.7	22.4	25.3	28.7	16.8
1993	4.3	12.6	18.2	17.1	13.9	13.8	27.6	27.7	27.5	18.3
1994	4.3	13.5	22.7	18.8	15.4	21.5	30.3	34.7	30.3	21.5
1995	3.4	14.6	19.6	18.5	18.8	21.1	28.9	37.5	31.9	22.3
1996	10.4	20.2	26.2	25.8	26.0	30.9	36.4	44.5	31.4	28.5
1997	7.6	14.7	13.1	10.7	13.8	14.2	28.1	35.0	30.4	19.1

Table B.5. Annual mean surface temperature (C) at sampled bag seine sites by bay system during 1977-97. ND = no data.

Year	Sabine Lake	Galveston	East Matagorda	Matagorda	San Antonio	Aransas	Corpus Christi	Upper Laguna Madre	Lower Laguna Madre	Coastwide
1977	ND	20.3	ND	20.9	21.7	20.8	20.4	20.6	20.5	20.7
1978	ND	21.4	ND	20.2	21.6	22.3	21.3	22.3	22.4	21.6
1979	ND	22.8	ND	22.8	23.3	23.2	23.6	21.8	23.1	22.9
1980	ND	23.9	ND	21.9	23.2	23.6	23.4	24.6	24.3	23.5
1981	ND	22.5	ND	21.5	22.4	23.7	22.6	24.1	24.6	23.0
1982	ND	23.9	ND	23.3	23.1	24.2	23.4	24.1	23.9	23.7
1983	ND	24.0	23.6	21.9	21.7	24.3	24.3	25.4	24.9	23.8
1984	ND	23.9	22.3	22.5	21.9	24.0	23.3	24.0	24.2	23.4
1985	ND	24.4	24.1	23.5	24.0	23.9	23.5	23.5	24.4	24.0
1986	23.7	24.2	23.4	23.3	23.5	25.2	23.6	24.5	25.0	24.2
1987	22.0	22.8	23.8	23.4	22.2	23.1	24.1	24.2	23.8	23.2
1988	21.7	23.4	23.9	23.4	21.1	24.3	23.3	23.9	25.1	23.5
1989	21.4	23.1	22.9	22.3	23.0	22.8	24.3	25.0	25.0	23.4
1990	21.7	22.6	24.7	23.6	23.0	24.4	24.9	24.9	25.5	23.9
1991	22.9	22.3	24.5	22.2	23.2	23.1	24.8	25.0	25.4	23.5
1992	22.2	21.7	22.2	21.4	23.3	22.6	23.4	24.3	25.9	23.0
1993	22.4	22.2	24.3	22.9	22.5	23.9	23.6	23.4	25.1	23.2
1994	23.1	23.1	24.5	23.3	22.8	25.0	25.0	24.6	25.7	24.1
1995	22.2	23.3	25.0	23.9	24.4	24.3	25.2	24.7	25.8	24.3
1996	22.8	23.4	24.4	24.0	23.6	24.7	25.0	25.0	25.5	24.3
1997	22.1	22.8	22.7	22.3	22.4	22.4	23.7	24.6	25.4	23.2

Table B.6. Annual mean surface turbidity at sampled bag seine sites by bay system during 1977-97. ND = no data.

Year	Sabine Lake	Galveston	Matagorda	East Matagorda	San Antonio	Aransas	Corpus Christi	Upper Laguna Madre	Lower Laguna Madre	Coastwide
Jackson Turbidity Units										
1977	ND	94	ND	60	27	50	40	50	30	55
1978	ND	78	ND	55	33	41	43	51	34	51
1979	ND	90	ND	70	31	53	44	47	59	60
1980	ND	90	ND	42	24	47	52	75	73	61
1981	ND	87	ND	54	25	65	44	107	95	71
1982	ND	105	ND	50	31	60	46	69	87	69
1983	ND	96	88	54	30	51	46	57	48	58
1984	ND	79	42	41	36	48	41	82	61	57
1985	ND	52	67	45	54	47	40	108	68	59
1986	46	84	59	46	51	46	44	60	80	61
Nephelometric Units										
1987	24	28	39	36	32	9	26	15	17	24
1988	26	26	28	29	29	28	20	22	24	26
1989	25	29	26	25	40	22	20	22	22	26
1990	21	29	26	30	31	23	21	20	23	26
1991	28	25	32	33	42	25	17	21	15	26
1992	24	23	34	41	43	31	21	17	25	29
1993	21	30	27	38	24	30	23	26	36	30
1994	21	24	31	26	25	17	17	10	40	24
1995	27	30	33	32	24	27	17	12	27	26
1996	34	25	44	33	24	21	16	17	25	25
1997	26	26	45	52	31	24	16	18	28	29

Table B.7. Annual mean bottom salinity (o/oo) at sampled oyster dredge "reef" sites in Texas bay systems from 1984-97. ND = no data.

Year	Galveston	Matagorda	San Antonio	Aransas	Coastwide
1984	16.7	ND	ND	ND	16.7
1985	17.6	ND	ND	ND	17.6
1986	15.5	22.0	18.2	21.0	18.9
1987	16.3	16.6	10.9	14.2	14.5
1988	19.6	28.1	22.9	25.0	23.7
1989	16.0	29.2	27.9	29.7	25.1
1990	16.0	24.4	24.1	26.2	22.3
1991	12.3	17.4	19.5	18.6	16.7
1992	14.9	11.8	9.2	8.7	11.4
1993	13.5	15.9	13.2	14.5	14.2
1994	13.7	19.4	17.4	19.8	16.8
1995	14.7	17.8	18.7	20.2	17.1
1996	22.2	25.6	27.6	29.9	25.2
1997	15.5	10.8	13.5	15.5	14.0

Table B.8. Annual mean bottom temperature (C) at sampled oyster dredge "reef" sites in Texas bay systems from 1984-97. ND = no data

Year	Galveston	Matagorda	San Antonio	Aransas	Coastwide
1984	21.0	ND	ND	ND	20.9
1985	22.0	ND	ND	ND	22.0
1986	22.8	22.4	22.3	22.1	22.4
1987	21.2	22.2	21.4	19.9	21.3
1988	21.6	21.8	21.6	22.0	21.7
1989	20.9	20.8	21.6	20.4	21.0
1990	21.7	22.6	22.6	23.0	22.4
1991	21.6	21.9	21.8	21.3	21.7
1992	21.8	20.8	22.6	21.4	21.7
1993	21.4	22.2	21.9	21.0	21.6
1994	22.0	22.5	23.3	21.4	22.2
1995	21.5	22.4	23.4	22.6	22.2
1996	21.7	22.6	22.5	21.8	22.0
1997	22.0	21.8	21.2	21.7	21.8

Table B.9. Annual mean bottom turbidity at sampled oyster dredge "reef sites" in Texas bay systems from 1984-97. ND = no data.

Year	Galveston	Matagorda	San Antonio	Aransas	Coastwide
Jackson Turbidity Units					
1984	25	ND	ND	ND	25
1985	47	ND	ND	ND	47
1986	40	51	48	37	45
Nephelometric Units					
1987	14	22	30	8	20
1988	15	21	16	16	17
1989	19	20	27	16	21
1990	14	22	26	16	20
1991	16	23	23	20	21
1992	15	32	37	31	26
1993	21	24	20	22	22
1994	17	18	16	16	17
1995	19	20	16	15	18
1996	15	29	21	14	20
1997	16	40	26	20	24

Table B.10. Annual mean bottom salinity (o/oo) at sampled bay trawl sites in Texas bay systems from 1977-97. ND = no data.

Year	Sabine Lake	Galveston	East Matagorda	Matagorda	San Antonio	Aransas	Corpus Christi	Upper Laguna Madre	Lower Laguna Madre	Coastwide
1977	ND	20.5	ND	17.9	13.9	19.5	ND	ND	ND	18.5
1978	ND	20.1	ND	19.3	14.7	20.6	ND	ND	ND	19.0
1979	ND	9.0	ND	10.3	5.7	ND	ND	ND	ND	8.8
1980	ND	22.8	ND	ND	ND	ND	ND	ND	ND	22.8
1981	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1982	ND	16.0	ND	22.4	16.3	19.2	30.3	34.1	35.8	21.3
1983	ND	10.7	ND	20.4	16.9	19.6	29.8	36.9	33.0	19.1
1984	ND	18.5	ND	25.2	22.9	25.2	32.5	40.0	31.0	24.6
1985	ND	17.0	ND	21.0	16.2	21.2	29.8	37.3	33.1	21.5
1986	7.8	14.8	ND	24.5	17.3	22.7	31.1	39.6	36.1	21.6
1987	7.3	15.1	16.7	20.6	9.9	18.1	27.5	31.9	33.3	18.6
1988	7.8	19.2	28.7	29.6	21.7	25.7	34.9	45.0	34.8	25.6
1989	6.2	16.4	27.6	30.2	26.8	30.4	35.4	49.3	35.9	26.1
1990	5.7	15.1	25.8	26.1	21.6	27.0	32.0	48.6	36.3	23.4
1991	2.2	11.9	18.7	20.4	17.7	20.0	29.9	41.4	31.5	19.2
1992	5.5	13.6	16.6	15.0	7.9	10.7	22.9	24.6	30.7	15.0
1993	3.1	13.8	18.9	18.5	12.4	16.9	28.6	28.0	30.9	17.6
1994	3.4	13.2	25.2	21.4	15.7	21.0	30.8	35.4	32.9	19.5
1995	4.5	13.6	21.7	22.1	18.8	20.5	29.7	38.3	32.9	20.2
1996	11.0	21.8	27.2	27.7	25.9	30.7	36.7	45.7	34.5	27.4
1997	5.8	13.5	15.0	13.5	13.8	17.9	29.6	36.5	32.8	17.4

Table B.11. Annual mean bottom temperature (C) at sampled bay trawl sites in Texas bay systems from 1977-97. ND = no data.

Year	Sabine Lake	Galveston	East Matagorda	Matagorda	San Antonio	Aransas	Corpus Christi	Upper Laguna Madre	Lower Laguna Madre	Coastwide
1977	ND	18.7	ND	17.9	21.1	17.8	ND	ND	ND	18.8
1978	ND	21.6	ND	23.5	24.2	24.8	ND	ND	ND	22.9
1979	ND	22.5	ND	21.6	25.5	ND	ND	ND	ND	22.8
1980	ND	23.8	ND	ND	ND	ND	ND	ND	ND	23.8
1981	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1982	ND	21.8	ND	24.8	23.3	23.1	25.0	26.1	25.1	23.5
1983	ND	21.5	ND	21.7	21.7	22.3	22.2	21.8	22.7	21.8
1984	ND	22.2	ND	22.8	21.6	23.4	21.8	22.0	22.8	22.3
1985	ND	21.9	ND	22.5	22.5	21.7	21.9	23.0	22.8	22.2
1986	22.1	22.2	ND	23.3	23.1	22.1	21.8	23.3	22.5	22.6
1987	20.0	21.5	24.3	21.9	21.8	21.3	21.1	22.3	22.6	21.6
1988	21.8	21.8	21.1	20.2	22.1	21.3	22.2	22.1	24.5	21.6
1989	20.8	20.4	21.0	20.5	21.1	20.5	21.8	23.8	23.6	21.0
1990	21.2	21.4	22.7	22.6	21.9	22.6	23.4	23.8	24.2	22.3
1991	21.7	21.5	22.0	21.5	22.2	21.7	22.8	23.4	23.2	21.9
1992	20.7	21.6	20.6	21.1	22.6	21.4	21.4	22.9	23.5	21.7
1993	21.0	20.9	22.2	22.2	22.5	21.8	22.1	21.3	23.7	21.7
1994	22.1	22.2	22.6	22.6	22.7	20.9	23.0	23.6	24.8	22.5
1995	22.0	21.8	22.6	23.0	23.3	22.5	23.5	23.6	23.9	22.7
1996	22.0	21.2	22.4	23.2	22.0	23.0	22.7	23.6	23.8	22.3
1997	21.6	21.6	21.8	21.3	21.3	22.0	21.9	23.6	23.6	21.7

Table B.12. Annual mean bottom turbidity at sampled bay trawl sites in Texas bay systems from 1983-97. ND = no data.

Year	Sabine Lake	Galveston	East Matagorda	Matagorda	San Antonio	Aransas	Corpus Christi	Upper Laguna Madre	Lower Laguna Madre	Coastwide
Jackson Turbidity Units										
1983	ND	101	ND	25	26	105	77	76	38	67
1984	ND	75	ND	30	30	71	62	70	38	55
1985	ND	41	ND	33	55	42	32	52	59	41
1986	35	37	ND	45	53	41	42	49	67	43
Nephelometric Units										
1987	15	17	19	22	29	7	13	15	12	18
1988	17	14	20	23	17	13	15	14	15	16
1989	16	18	27	19	22	19	15	12	14	18
1990	13	18	20	15	28	17	11	15	13	17
1991	18	16	22	19	22	19	10	10	8	17
1992	19	18	17	24	37	30	12	9	18	21
1993	16	24	17	19	19	22	13	13	47	21
1994	17	19	14	13	17	16	10	9	16	15
1995	17	20	24	18	19	17	14	12	19	18
1996	16	15	26	22	32	13	13	16	15	18
1997	19	18	30	26	34	16	12	22	18	21

Table B.13. Annual mean bottom salinity (o/oo) at sampled gulf trawl sites in the Texas Territorial Sea 1985-97. ND = no data.

Year	Sabine Lake	Galveston	Port O'Connor	Port Aransas	Port Isabel	Coastwide
1985	ND	30.6	32.3	30.9	31.7	31.4
1986	29.1	29.7	32.4	30.5	32.7	30.9
1987	27.4	28.8	33.5	34.4	34.4	31.7
1988	27.3	28.3	30.7	32.4	35.0	30.7
1989	25.4	29.9	32.9	30.9	33.7	30.6
1990	25.3	29.5	30.5	32.4	33.9	30.3
1991	23.7	28.5	31.0	31.9	31.2	29.3
1992	26.5	29.4	31.5	32.4	30.7	30.1
1993	23.1	27.3	28.9	34.5	30.8	28.9
1994	21.4	27.2	28.1	31.7	33.9	28.4
1995	26.1	28.0	31.5	31.2	33.4	30.0
1996	26.4	30.0	31.7	34.5	34.5	31.4
1997	27.1	27.8	31.1	32.0	33.6	30.3

Table B.14. Annual mean bottom temperature (C) at sampled gulf trawl sites in the Texas Territorial Sea 1985-97. ND = no data.

Year	Sabine Lake	Galveston	Port O'Connor	Port Aransas	Port Isabel	Coastwide
1985	ND	23.4	23.6	22.5	25.4	23.7
1986	25.6	22.0	22.8	22.3	22.7	23.1
1987	21.1	21.7	22.1	22.4	21.9	21.8
1988	21.1	21.6	21.2	22.2	21.8	21.6
1989	19.8	21.5	21.3	21.7	21.8	21.2
1990	21.3	21.9	21.8	22.2	21.8	21.8
1991	22.0	22.3	22.1	21.8	21.5	21.9
1992	19.9	21.5	20.9	22.5	20.9	21.1
1993	21.8	21.7	21.8	21.6	21.3	21.7
1994	22.1	22.2	21.9	22.2	22.0	22.1
1995	22.2	21.9	21.8	22.3	22.2	22.1
1996	21.6	21.8	21.8	21.9	21.1	21.7
1997	21.8	21.5	21.3	21.3	20.4	21.3

Table B.15. Annual mean bottom turbidity at sampled gulf trawl sites in the Texas Territorial Sea 1985-97. ND = no data.

Year	Sabine Lake	Galveston	Port O'Connor	Port Aransas	Port Isabel	Coastwide
Jackson Turbidity Units						
1985	ND	31	37	25	24	30
1986	30	24	29	24	24	26
Nephelometric Units						
1987	10	10	11	4	6	8
1988	6	9	10	4	4	7
1989	7	9	9	7	4	7
1990	9	11	7	8	3	8
1991	11	12	7	8	3	8
1992	13	10	10	10	4	9
1993	12	6	14	7	4	9
1994	10	8	5	5	4	6
1995	13	13	7	5	4	8
1996	14	10	9	6	3	8
1997	14	9	6	9	5	8

Appendix C. Summary of SEAMAP samples by year and depth zone for brown shrimp, white shrimp, pink shrimp and blue crab collected off Texas during 1982-97.

Table C.1. Mean catch rates (No./h) and mean size (mm) of select shellfishes caught during SEAMAP[a] sampling off Texas during June-July 1982-97. Blanks indicate no measurement taken.

Year	Depth (m)	Samples (No.)	Brown Shrimp No./h	Brown Shrimp Length	White Shrimp No./h	White Shrimp Length	Pink Shrimp No./h	Pink Shrimp Length	Blue Crab No./h	Blue Crab Length
1982	0-18	22	1,222	108	15	173	161	136	8	
	19-37	50	1,427	115	0		20	138	1	
	38-55	29	138	145	0		<1	126	0	
	56-73	5	117	179	0		0		0	
	74-91	3	79	182	0		0		0	
1983	0-18	28	254	99	20	153	195	127	8	
	19-37	47	1,445	119	1	167	87	121	4	
	38-55	24	304	132	0		1	118	1	
	56-73	8	66	156	0		0		0	
	74-91	2	71	168	0		0		0	
1984	0-18	16	733	116	30	174	4	151	6	
	19-37	40	1,594	116	1	168	3	150	0	
	38-55	16	544	131	0		0		0	
	56-73	12	194	138	0		0		0	
	74-91	5	86	151	0		0		0	
1985	0-18	30	450	98	41	168	15	135	20	
	19-37	40	1,362	112	2	167	10	131	4	
	38-55	14	150	127	0		<1	127	0	
	56-73	5	154	144	0		0		0	
	74-91	1	36	179	0		0		0	

Table C.1. (Cont.)

Year	Depth (m)	Samples (No.)	Brown Shrimp No./h	Brown Shrimp Length	White Shrimp No./h	White Shrimp Length	Pink Shrimp No./h	Pink Shrimp Length	Blue Crab No./h	Blue Crab Length
1986	0-18	35	250	98	33	165	18	116	11	
	19-37	43	809	108	0		42	130	10	
	38-55	10	311	124	0		0		0	
	56-73	5	176	136	0		0		0	
	74-91	3	49	147	0		0		0	
1987	0-18	74	189	103	15	159	24	115	3	
	19-37	56	606	107	3	162	19	108	7	
	38-55	17	26	142	0		<1	180	2	
	56-73	8	16	177	0		0		1	
	74-91	7	11	177	0		0		0	
1988	0-18	75	227	106	4	166	22	110	5	
	19-37	50	309	113	0		2	127	2	
	38-55	17	18	126	0		0		0	
	56-73	7	4	180	0		0		0	
	74-91	7	3	198	0		0		0	
1989	0-18	85	556	101	16	167	51	116	6	111
	19-37	54	928	118	4	126	24	116	1	144
	38-55	12	212	129	0		<1	135	0	
	56-73	8	40	140	0		0		0	
	74-91	7	11	159	0		0		0	
1990	0-18	74	279	113	17	171	18	126	5	127
	19-37	48	850	123	1	156	62	122	2	81
	38-55	16	202	136	0		<1	135	1	79
	56-73	10	76	140	0		0		0	
	74-91	8	16	154	0		0		<1	164

Table C.1. (Cont.)

Year	Depth (m)	Samples (No.)	Brown Shrimp No./h	Brown Shrimp Length	White Shrimp No./h	White Shrimp Length	Pink Shrimp No./h	Pink Shrimp Length	Blue Crab No./h	Blue Crab Length
1991	0-18	92	202	106	31	167	27	125	14	90
	19-37	51	1,153	125	7	173	64	136	4	143
	38-55	20	186	143	0		<1	157	1	135
	56-73	10	76	171	0		0		1	96
	74-91	9	41	176	0		0		0	
1992	0-18	85	234	100	36	166	15	112	4	114
	19-37	58	217	127	<1	185	6	121	1	148
	38-55	17	22	158	0		0		<1	248
	56-73	10	15	180	0		0		0	
	74-91	8	10	186	0		0		0	
1993	0-18	89	121	104	16	171	23	122	10	120
	19-37	55	236	111	2	169	63	121	6	119
	38-55	22	69	139	0	176	19	122	<1	152
	56-73	10	35	152	0		0		<1	161
	74-91	2	34	169	0		0		<1	140
1994	0-18	93	113	109	9	169	58	124	6	125
	19-37	50	850	120	0		27	118	<1	102
	38-55	19	46	151	0		0		0	
	56-73	11	36	181	0		0		0	
	74-91	3	12	181	0		0		0	
1995	0-18	88	343	105	19	165	34	117	6	112
	19-37	54	829	114	8	165	10	109	1	142
	38-55	20	101	125	0		<1	100	<1	143
	56-73	11	106	148	0		0		0	
	74-91	7	43	177	0		0		0	

Table C.1. (Cont.)

Year	Depth (m)	Samples (No.)	Brown Shrimp No./h	Brown Shrimp Length	White Shrimp No./h	White Shrimp Length	Pink Shrimp No./h	Pink Shrimp Length	Blue Crab No./h	Blue Crab Length
1996	0-18	85	66	108	9	164	10	124	4	102
	19-37	60	332	108	<1	163	30	106	2	120
	38-95	18	10	149	<1	105	0		0	
	56-73	13	28	176	0		0		0	
	74-91	9	24	142	0		0		0	
1997	0-18	83	151	94	13	173	53	124	10	103
	19-37	61	302	106	<1	176	15	121	1	144
	38-55	18	21	132	0		0		0	
	56-73	14	40	169	0		0		0	
	74-91	8	23	170	0		0		0	

[a] Data presented here were collected by R/V OREGON II (NMFS) in conjunction with TPWD research vessels. The data were made available by the Southeast Area Monitoring and Assessment Program (SEAMAP). Samples collected with 12.2-m trawl, except 6.1-m trawl by TPW vessels since 1987. Data normalized to 12.2-m trawl by NMFS.

Table C.2. Mean catch rates (No./h) and mean size (mm) of select shellfishes caught during SEAMAP[a] sampling off Texas during November 1986-97. Blanks indicate no measurement taken.

Year	Depth (m)	Samples (No.)	Brown shrimp		White shrimp		Pink shrimp		Blue crab	
			No./h	Length	No./h	Length	No./h	Length	No./h	Length
1986	0-18	12	71		77		26		0	
	19-37	34	93		15		2		1	
	38-55	26	68		0		0		0	
	56-73	12	41		0		0		0	
	74-91	4	22		0		0		0	
1987	0-18	65	20		89		18		0	
	19-37	40	50		7		2		<1	
	38-55	12	21		0		0		0	
	56-73	2	6		0		0		0	
	74-91	1	0		0		0		0	
1988	0-18	77	21		98		9		0	
	19-37	49	48		15		12		0	
	38-55	16	44		0		1		0	
	56-73	10	15		0		0		0	
	74-91	7	8		0		0		0	
1989	0-18	78	21	100	137	102	16	124	2	45
	19-37	60	68	140	23	117	10	123	<1	83
	38-55	20	71	169	<1		1	124	<1	94
	56-73	7	43	173	0		0		<1	74
	74-91	9	5	185	0		0		0	
1990	0-18	64	18	105	56	129	11	137	<1	70
	19-37	59	69	140	5	159	7	126	<1	87
	38-55	22	60	168	<1	185	1	129	1	75

Table C.2. (Cont.)

Year	Depth (m)	Samples (No.)	Brown shrimp No./h	Brown shrimp Length	White shrimp No./h	White shrimp Length	Pink shrimp No./h	Pink shrimp Length	Blue crab No./h	Blue crab Length
	56-73	9	34	173	0		0		1	74
	74-91	6	7	190	0		0		0	
1991	0-18	88	28	107	31	124	14	108	<1	52
	19-37	57	120	134	4	166	4	107	<1	133
	38-55	20	65	161	0		0		1	135
	56-73	12	31	172	0		0		0	
	74-91	11	12	181	0		0		0	
1992	0-18	89	11	115	135	115	3	131	<1	34
	19-37	55	80	135	8	157	1	122	<1	141
	38-55	18	42	164	0		0		<1	141
	56-73	8	49	172	0		0		0	
	74-91	4	33	176	0		0		0	
1993	0-18	88	11	126	160	119	31	95	3	160
	19-37	55	91	119	17	134	28	88	1	151
	38-55	17	60	93	<1	109	<1	76	<1	108
	56-73	9	12	106	<1	125	<1	76	0	
	74-91	5	17	85	<1	119	<1	98	<1	144
1994	0-18	89	13	108	36	124	19	106	1	105
	19-37	54	106	132	5	152	6	110	<1	134
	38-55	17	53	162	0		0		0	
	56-73	13	26	177	0		0		0	
	74-91	11	8	192	0		0		0	
1995	0-18	95	5	118	120	114	10	126	5	54
	19-37	51	131	129	15	162	19	117	<1	75
	38-55	19	49	162	0		2	138	0	

Table C.2. (Cont.)

Year	Depth (m)	Samples (No.)	Brown shrimp No./h	Brown shrimp Length	White shrimp No./h	White shrimp Length	Pink shrimp No./h	Pink shrimp Length	Blue crab No./h	Blue crab Length
	56-73	9	45	166	0		<1	160	0	
	74-91	9	54	177	0		0		0	
1996	0-18	93	9	104	135	117	14	113	1	55
	19-37	52	75	124	30	146	19	135	0	
	38-55	19	40	154	0		<1	155	0	
	56-73	11	29	158	0		0		<1	133
	74-91	11	47	173	0		0		0	
1997	0-18	93	8	97	106	112	7	116	12	71
	19-37	52	148	123	9	148	17	125	<1	153
	38-55	17	72	164	0		4	106	0	
	56-73	13	20	179	0		5	96	0	
	74-91	0	7	182	0		0		0	

[a] Data presented here were collected with 12.2-m trawl by R/V OREGON II (NMFS) and with 6.1-m trawl by TPWD research vessels. The data were made available by the Southeast Area Monitoring and Assessment Program (SEAMAP). Data normalized to 12.2-m trawl by NMFS.

Appendix D. Regulations and Legislation adopted 1 September 1997.

Regulations and Legislation adopted 1 September 1997.

House Bill 520: Established a new Class B menhaden boat license ($50 maximum fee) for the small boats assisting larger menhaden fishing boats. Also renamed the existing license to Class A.

House Bill 827: Directs the commission to waive hunting and fishing licenses fees for qualified resident disabled veterans.

House Bill 966: Expands the application of Chapter 31 on Water Safety to cover all vessels on public water. Applies numbering requirements to all vessels on public water. Forbids the operation of personal watercraft or a motorboat over 15hp on public waters by persons under the age of 16, unless accompanied by a person at least 18 years old, or at least 13 years old with a passed boating safety course. Provides TPW authority to adopt rules to approve and administer a mandatory boater education program. Requires all peace officers and game wardens to be certified as marine safety enforcement officers. Modifies penalties for certain violations of the Water Safety Act. Provides for mandatory boater education course if found guilty of certain Water Safety Act violations.

House Bill 2542: Simplifies, clarifies and updates statues concerning parks and wildlife resources.

Senate Bill 1: Establishes a water use fee on water rights and a fee on retail customers. TPW activities under the bill include participation in drought planning/monitoring, regional planning, assessment and evaluation of fish and wildlife impacts, assistance to groundwater districts and direct grant funding to assess fish and wildlife impacts, coordination and database development, conservation enhancement for water development projects, purchase of water rights,

and other actions necessary to assure projects meet mitigation and conservation requirements.

Regulation 65.72: Provisions of subparagraph (N) were moved to the statewide Shrimp Fishery Proclamation where amendments to the provisions clarified the intent of retention of other aquatic life caught during legal shrimping operations. Changes to subsequent numbers were adjusted to subparagraph (o-s) accordingly.

Regulation 65.3; Definitions (22): Provision removed the dating requirement on gear tags for saltwater trot lines.

Regulation 65.72(b)(2): Provision decreased the daily bag limit for greater amberjack from 3 to 1 fish.

Regulation 65.72(a)(5): Provision set red snapper and king mackerel commercial season in Texas waters to run concurrently with commercial season in the EEZ. Also, reorganized the section to accommodate possible additional species.

Regulation 65.72(a)(4): Provision clarified the term "properly executed" by stating that the day and month of catch must be out on red drum tag and places restriction on having multiple tags in one's possession.

Regulation 65.78(a)(3)(c): Provision clarifies the intent of the rule restricting possession of the left stone crab claw.

Regulation 65.3; Definitions (10): Provision redefines the coastal waters boundary to redesignate as fresh water areas a portion of the Aransas River in Aransas County and Spindletop Bayou in Jefferson County.

Regulation 65.78(d)(2)(B)(iv)(I-IV): Provision establishes that all crab traps fished in Texas waters must be equipped with a 3-inch by 6-inch degradable panel.

PWD RP V3400-673 (2/01)