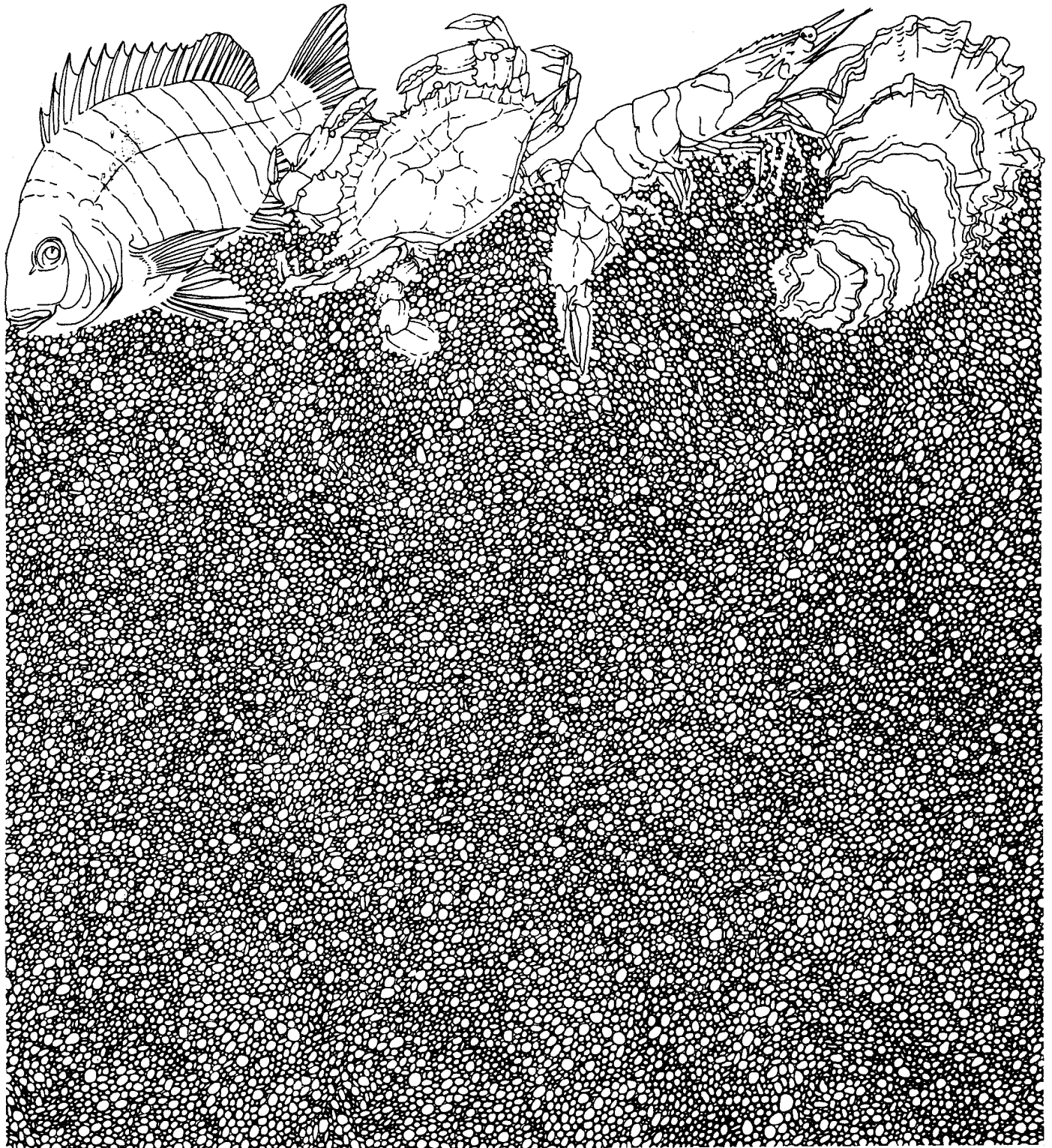


Catches of Five Finfishes In Bag Seines, May 1961-May 1976

by Joe H. Martin

Management Data Series Number 132
1988

Texas Parks and Wildlife Department
Coastal Fisheries Branch



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ABSTRACT

Bag seine samples were collected periodically in Texas bays during May 1961-May 1976. Catch rates of red drum (Sciaenops ocellatus), black drum (Pogonias cromis), spotted seatrout (Cynoscion nebulosus), southern flounder (Paralichthys lethostigma) and sheepshead (Archosargus probatocephalus) were compiled and recalculated as monthly and annual no./ha. Seasonal fluctuations in the catch rates of all species are similar to those presented in the published literature. These bag seine catch rate data can be used by the Texas Parks and Wildlife Department to enhance the post October 1977 bag seine data base.

INTRODUCTION

Bag seines are used by the Texas Parks and Wildlife Department (TPWD) to assess recruitment of and relative abundance of crustaceans and finfish (Crowe et al. 1986, Hammerschmidt and McEachron 1986). Estimation of recruitment is essential to understanding relationships between spawning and subsequent adult abundance. When used in conjunction with standardized gears that sample relative abundance of adult fish, bag seines provide managers a tool for estimating spawner-recruit relationships. Bag seines can be used to document effects of catastrophic events and management regulations on populations and can provide long term trend data needed to make fishery management recommendations. Bag seines were first used for obtaining information on select adult, sub-adult and juvenile finfish populations by the TPWD in May 1961 in upper Laguna Madre (TPWD 1961). Bag seine sampling began in Galveston Bay, San Antonio Bay, Aransas Bay, Corpus Christi Bay and lower Laguna Madre in February 1962 (TPWD 1962) and in Matagorda Bay in January 1963 (TPWD 1963). Bag seine sampling continued in all bay systems through May 1969 (TPWD 1964, 1965, 1966, 1967, 1968, 1969). Bag seine samples were collected in Corpus Christi Bay, upper Laguna Madre and lower Laguna Madre during June 1969-December 1972 (TPWD 1969, 1970, 1971, 1972) and in all bay systems (TPWD unpublished data) during April and May 1976.

During May 1961-September 1977 each area biologist established and conducted his own bag seine sampling regime based on the size and accessibility of his bay system and logistical constraints. As a result, bag seine sample procedures varied among bay systems. In October 1977 bag seine sampling was standardized so that the same procedures were used in seven bay systems (Matlock and Weaver 1979).

This study was conducted to enhance historical trend data on recruitment and relative abundance of juvenile finfish by reporting bag seine data collected prior to October 1977 in the same format as bag seine data collected after October 1977.

MATERIALS AND METHODS

The TPWD initiated bag seine sampling in May 1961 that continued on an intermittent basis through May 1976. Bag seines (8.3 m long; 1.8 m deep with 1.9-cm stretched nylon multifilament mesh in the 1.8 m wide central bag and lateral wings) were pulled parallel to shore for a predetermined distance (TPWD 1972). The area sampled was estimated using the distance pulled and the length of extension of the seine (Hegen 1981). Bag seines used during 1961-1963 had a center bag 1.1 m wide and 2.1 m deep (TPWD 1961, 1962 and 1963). All red drum (Sciaenops ocellatus), black drum (Pogonias cromis), spotted seatrout (Cynoscion nebulosus), southern flounder (Paralichthys lethostigma) and sheepshead (Archosargus probatocephalus) were identified and counted (King, unpublished). No more than 20 individuals of each species were measured (nearest 1 mm TL).

Most of the data in this report was compiled by B. D. King in 1973. Files at each coastal fisheries field stations were searched for bag seine data collected prior to 1973. Data were sorted and organized

chronologically by bay system. Data not duplicated in King's (Unpublished) report were added to the table. Additional bag seine information was obtained from TPWD project reports. Some data sets are incomplete because original data were lost when Hurricane Buelah destroyed the Arroyo Colorado field station in 1967 (TPWD 1968), when Hurricane Celia destroyed the Flour Bluff field station in 1970 (TPWD 1970) and when fire destroyed the Palacios field station in 1972 (TPWD 1974).

Original monthly catch rates of red drum, black drum, spotted seatrout, southern flounder and sheepshead were calculated as no./acre. For comparison with current TPWD data sets, acres sampled were converted to hectares (acre X 0.04047 = ha). Monthly catch rates were recalculated as no./ha by dividing the total number of fishes caught by the total number of hectares sampled each month. Coastwide catch rates were weighted using procedures described in Crowe et al. (1986). Coastwide monthly catch rates were calculated for only those months for which there was a data set from each bay system. Annual catch rates were calculated by dividing the total number of fishes caught by the total number of hectares sampled each year. Annual bay system catch rates were calculated only for those years for which a 12 month data set existed (1963-1972). Coastwide annual catch rates were not calculated because it was not possible to calculate annual catch rates for San Antonio Bay and the lower Laguna Madre.

RESULTS

Monthly red drum catch rates were highest (1,250/ha) in the upper Laguna Madre in February 1962 (Table 1). Catch rates in all other months ranged from 0-420/ha.

Monthly black drum catch rates were highest (4,618/ha) in Galveston Bay in May 1963 (Table 1). Catch rates in all other months ranged from 0-3,738/ha.

Monthly spotted seatrout catch rates were highest (414/ha) in San Antonio Bay in June 1962 (Table 1). Catch rates in all other months ranged from 0-142/ha.

Monthly southern flounder catch rates were highest (260/ha) in Galveston Bay in August 1962. Catch rates in all other months ranged from 0-142/ha.

Monthly sheepshead catch rates were highest (63/ha) in San Antonio Bay in July 1968 (Table 1). Catch rates in all other months ranged from 0-45/ha.

The highest annual catch rate of red drum (60/ha), black drum (49/ha), spotted seatrout (30/ha) and sheepshead (63/ha) occurred in Galveston Bay in 1968, 1965, 1963 and 1968, respectively (Table 2). Annual southern flounder catch rates were highest (30/ha) in Matagorda Bay in 1963 (Table 2).

DISCUSSION

Bag seine data collected during May 1961-May 1976 can be used to enhance historical trend data of juvenile finfishes. The larger data base would improve future spawner recruit models and would enhance fishery management decisions. These data should be used with caution because there was no standardized procedure of bag seine sampling. However, these data should be relatively comparable to post October 1977 data.

Fishery management decisions hinge on the ability of the manager to assess the effects of environmental and/or catastrophic events on both population levels and reproductive success of the targeted finfish species. Long term trend information documenting changes in relative abundance is of major importance when assessing stocks.

LITERATURE CITED

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Table 1. Monthly mean catch rate (no./ha) and total number of red drum, black drum, spotted seatrout, southern flounder and sheepshead caught with bag seines, by bay system, during 1961-1977. ND = no data.

Species	Bay system											
					Upper				Lower			
	Galveston	Matagorda	San Antonio	Aransas	Christi	Laguna	Madre	Madre	Laguna	Madre	Madre	Coastwide
no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha
Red drum												
May 1961	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Jun	ND	ND	ND	ND	ND	ND	0	0	ND	ND	ND	ND
Jul	ND	ND	ND	ND	ND	ND	0	0	ND	ND	ND	ND
Aug	ND	ND	ND	ND	ND	ND	0	0	ND	ND	ND	ND
Sep	ND	14	3	ND	ND	ND	0	0	0	0	0	ND
Oct	ND	ND	ND	ND	0	0	0	0	0	0	0	ND
Nov	ND	ND	ND	ND	0	0	0	0	0	0	0	ND
Dec	ND	ND	0	ND	ND	0	0	0	10	4	ND	ND
Black drum												
Jan 1962	ND	ND	0	ND	ND	ND	0	0	ND	ND	ND	ND
Feb	46	13	0	25	55	1250	50	50	ND	ND	ND	ND
Mar	54	15	0	80	174	25	1	1	0	0	0	ND
Apr	131	21	0	14	76	50	2	2	0	0	0	ND
May	36	4	0	25	6	0	0	0	0	0	0	ND
Jun	11	2	0	8	ND	0	0	0	100	13	0	ND
Jul	ND	ND	0	0	0	0	0	0	0	0	0	ND
Aug	ND	ND	0	0	0	0	0	0	0	0	0	ND
Sep	ND	ND	0	0	12	2	0	0	0	0	0	ND
Oct	ND	ND	0	0	7	2	2	2	0	0	0	ND
Nov	ND	ND	0	13	0	0	0	0	ND	ND	ND	ND
Dec	ND	ND	0	0	3	1	0	0	0	0	0	ND

Table 1. (Cont'd.)

Species Month	Bay system											Coastwide no./ha no.
	Galveston no./ha no.	Matagorda no./ha no.	San Antonio no./ha no.	Aransas no./ha no.	Corpus Christi no./ha no.	Upper Laguna Madre no./ha no.	Lower Laguna Madre no./ha no.					
Red drum (Cont'd.)												
Jan 1965	6	2	ND	8	1	ND	ND	26	ND	15	9	ND
Feb	8	3	ND	49	17	59	ND	0	0	54	50	ND
Mar	24	11	ND	10	4	20	ND	15	ND	34	19	ND
Apr	53	21	ND	10	4	0	ND	0	ND	40	44	ND
May	7	4	ND	18	7	3	ND	2	ND	33	29	ND
Jun	4	2	ND	4	1	ND	ND	ND	ND	27	14	ND
Jul	0	0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aug	0	0	ND	ND	ND	ND	ND	0	ND	0	0	ND
Sep	5	2	ND	3	1	0	ND	0	ND	0	0	ND
Oct	5	2	ND	0	0	0	ND	0	ND	0	0	ND
Nov	14	5	ND	0	0	0	ND	0	ND	0	0	ND
Dec	60	24	ND	54	19	0	ND	0	ND	3	2	ND
Jan 1966	29	4	0	8	4	0	ND	0	ND	99	85	ND
Feb	27	12	0	ND	ND	28	ND	12	ND	143	77	ND
Mar	53	21	0	31	11	21	ND	9	20	342	89	71
Apr	144	65	ND	0	0	25	ND	17	19	245	54	ND
May	43	17	ND	ND	ND	2	ND	1	8	110	32	ND
Jun	56	25	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Jul	2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aug	2	1	ND	0	0	5	ND	3	0	0	0	ND
Sep	0	0	ND	0	0	ND	ND	ND	2	0	0	ND
Oct	0	0	ND	ND	0	ND	ND	ND	0	0	0	ND
Nov	0	0	ND	0	0	ND	ND	ND	0	0	0	ND
Dec	6	1	ND	ND	ND	0	ND	0	ND	0	0	ND

Table 1. (Cont'd.)

Species	Bay system											
	Upper											Coastwide
	Galveston	Matagorda	San Antonio	Aransas	Corpus Christi	Laguna Madre	Laguna Madre	Laguna Madre	Laguna Madre	Laguna Madre	Laguna Madre	Coastwide
Month	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha
Red drum (Cont'd.)												
Jan 1967	0	3	1	ND	ND	ND	1	1	32	47	ND	ND
Feb	5	0	0	ND	1	1	6	3	61	46	ND	ND
Mar	24	87	39	ND	24	26	17	13	31	63	ND	ND
Apr	13	10	51	ND	16	14	11	8	290	58	ND	ND
May	36	10	5	ND	2	2	10	7	155	31	ND	ND
Jun	4	15	10	0	0	0	ND	ND	ND	ND	ND	ND
Jul	8	4	3	ND	0	0	ND	ND	ND	ND	ND	ND
Aug	4	0	0	ND	0	0	ND	1	ND	ND	ND	ND
Sep	0	2	1	ND	0	0	ND	ND	ND	ND	ND	ND
Oct	51	0	0	ND	0	0	0	0	ND	ND	ND	ND
Nov	0	40	16	ND	0	0	0	0	141	90	ND	ND
Dec	15	159	46	ND	60	59	45	25	2	1	ND	ND
Jan 1968	41	136	38	19	28	27	41	25	261	162	76	317
Feb	60	190	76	74	46	45	145	84	166	93	106	388
Mar	38	24	8	0	122	120	211	97	ND	ND	ND	ND
Apr	53	28	13	ND	70	69	80	32	212	178	ND	ND
May	39	32	14	0	26	25	71	30	93	68	44	175
Jun	9	11	5	62	17	17	11	4	33	24	24	81
Jul	13	36	15	16	11	11	11	4	23	16	17	59
Aug	0	30	13	17	6	6	0	0	14	11	10	36
Sep	0	0	0	7	4	4	0	0	6	5	2	10
Oct	0	5	2	4	4	4	17	6	13	9	6	25
Nov	45	25	3	ND	0	0	0	0	10	8	ND	ND
Dec	420	235	43	3	3	3	0	0	1	1	102	249

Table 1. (Cont'd.)

Species Month	Bay system											Coastwide no./ha no.					
	Galveston			Matagorda			San Antonio		Aransas		Corpus Christi		Upper Laguna Madre		Lower Laguna Madre		
	no./ha	no.	no./ha	no./ha	no.	no./ha	no./ha	no.	no./ha	no.	no./ha		no./ha	no.	no./ha	no./ha	no.
Red drum (Cont'd.)																	
Jan 1969	16	9	59	20	ND	13	6	6	6	6	21	7	5	ND			
Feb	38	21	124	52	ND	33	15	10	10	22	9	14	10	ND			
Mar	18	9	131	38	ND	30	14	22	22	10	4	16	13	ND			
Apr	32	18	150	6	ND	28	13	4	4	0	0	10	6	ND			
May	14	8	0	0	ND	ND	ND	4	4	6	2	16	8	ND			
Jun	ND	ND	0	0	ND	ND	ND	12	1	6	1	ND	ND	ND			
Jul	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			
Aug	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			
Sep	ND	ND	ND	ND	ND	ND	ND	0	0	ND	ND	ND	ND	ND			
Oct	ND	ND	ND	ND	ND	ND	ND	1	1	ND	ND	38	22	ND			
Nov	ND	ND	ND	ND	ND	ND	ND	2	2	ND	ND	35	21	ND			
Dec	ND	ND	ND	ND	ND	ND	ND	2	2	ND	ND	ND	ND	ND			
Jan 1970	ND	ND	ND	ND	ND	ND	ND	0	0	44	16	68	42	ND			
Feb	ND	ND	ND	ND	ND	ND	ND	2	2	ND	ND	24	16	ND			
Mar	ND	ND	ND	ND	ND	ND	ND	55	54	53	17	26	14	ND			
Apr	ND	ND	ND	ND	ND	ND	ND	4	4	33	8	9	7	ND			
May	ND	ND	ND	ND	ND	ND	ND	12	12	ND	ND	28	11	ND			
Jun	ND	ND	ND	ND	ND	ND	ND	1	1	0	0	ND	ND	ND			
Jul	ND	ND	ND	ND	ND	ND	ND	0	0	3	1	ND	ND	ND			
Aug	ND	ND	ND	ND	ND	ND	ND	ND	0	0	0	ND	ND	ND			
Sep	ND	ND	ND	ND	ND	ND	ND	0	0	0	0	ND	ND	ND			
Oct	ND	ND	ND	ND	ND	ND	ND	0	0	0	0	ND	ND	ND			
Nov	ND	ND	ND	ND	ND	ND	ND	0	0	0	0	ND	ND	ND			
Dec	ND	ND	ND	ND	ND	ND	ND	0	0	0	0	ND	ND	ND			

Table 1. (Cont'd.)

Species	Bay system									
	Galveston	Matagorda	San Antonio	Aransas	Corpus Christi	Upper Laguna Madre	Lower Laguna Madre	Coastwide		
Month	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha
Red drum (Cont'd.)										
Jan 1971	ND	ND	ND	ND	0	0	0	0	ND	ND
Feb	ND	ND	ND	ND	0	0	2	1	ND	ND
Mar	ND	ND	ND	ND	2	2	19	7	ND	ND
Apr	ND	ND	ND	ND	0	0	12	4	ND	ND
May	ND	ND	ND	ND	1	1	7	2	ND	ND
Jun	ND	ND	ND	ND	2	2	0	0	ND	ND
Jul	ND	ND	ND	ND	0	0	4	1	ND	ND
Aug	ND	ND	ND	ND	0	0	0	0	ND	ND
Sep	ND	ND	ND	ND	0	0	ND	0	0	0
Oct	ND	ND	ND	ND	0	0	0	0	0	0
Nov	ND	ND	ND	ND	0	0	0	0	3	3
Dec	ND	ND	ND	ND	38	33	19	3	57	56
Jan 1972	ND	ND	ND	ND	25	22	100	36	126	93
Feb	ND	ND	ND	ND	14	12	50	8	120	79
Mar	ND	ND	ND	ND	23	20	53	19	85	67
Apr	ND	ND	ND	ND	20	17	38	12	19	12
May	ND	ND	ND	ND	8	7	36	10	3	2
Jun	ND	ND	ND	ND	1	1	6	2		
Jul	ND	ND	ND	ND	0	0	0	0		
Aug	ND	ND	ND	ND	0	0	0	0	2	2
Sep	ND	ND	ND	ND	0	0	0	0	2	2
Oct	ND	ND	ND	ND	0	0	0	0	0	0
Nov	ND	ND	ND	ND	0	0	0	0	0	0
Dec	ND	ND	ND	ND	0	0	0	0	0	0

Table 1. (Cont'd.)

Species	Bay system															
	Galveston						Upper						Lower			
	no./ha	no.	no./ha	no.	no./ha	no.	Aransas	Christi	Laguna	Madre	no./ha	no.	no./ha	no.	Coastwide	
Month	no./ha	no.	no./ha	no.	no./ha	no.	no./ha	no.	no./ha	no.	no./ha	no.	no./ha	no.	no./ha	no.
Red drum (Cont'd.)																
Apr 1976	17	8	4	1	8	2	58	7	27	7	0	0	81	21	27	46
May	10	5	8	2	8	2	20	4	0	0	19	5	40	8	15	26
Black drum																
May 1961	ND	ND	ND	ND	ND	0	ND	ND	ND	ND	ND	0	ND	0	ND	ND
Jun	ND	ND	ND	ND	ND		ND	ND	ND	ND	0	0	ND	0	ND	ND
Jul	ND	ND	ND	ND	ND		ND	ND	ND	ND	0	0	ND	0	ND	ND
Aug	ND	ND	ND	ND	ND		ND	ND	ND	ND	3	9	ND		ND	ND
Sep	ND	ND	ND	ND	0	0	ND	ND	ND	ND	ND	0	0	0	0	ND
Oct	ND	ND	ND	ND	ND		ND	ND	0	0	0	0	0	0	0	ND
Nov	ND	ND	ND	ND	ND		ND	ND	0	0	0	0	0	0	0	ND
Dec	ND	ND	ND	ND	0	0	ND	ND	ND	ND	0	0	ND	0	ND	ND
1962																
Jan	ND	ND	ND	ND	ND		ND	ND	ND	ND	0	0	ND	0	ND	ND
Feb	ND	ND	ND	ND	0	0	ND	ND	0	0	0	0	ND	0	ND	ND
Mar	ND	ND	ND	ND	0	0	ND	ND	0	0	0	0	0	0	ND	ND
Apr	0	0	ND	ND	0	0	ND	ND	0	0	0	0	0	0	ND	ND
May	36	4	ND	ND	0	0	ND	ND	0	0	25	1	258	49	ND	ND
Jun	100	18	ND	ND	0	0	ND	ND	ND	ND	100	4	3738	486	ND	ND
Jul	222	51	ND	ND	43	3	ND	ND	18	3	0	0	459	101	ND	ND
Aug	118	13	ND	ND	0	0	ND	ND	23	3	0	0	136	38	ND	ND
Sep	173	159	ND	ND	0	0	ND	ND	29	5	0	0	33	4	ND	ND
Oct	88	30	ND	ND	0	0	ND	ND	3	1	ND	ND	0	0	ND	ND
Nov	0	0	ND	ND	0	0	ND	ND	15	5	ND	ND	ND	ND	ND	ND
Dec	0	0	ND	ND	229	16	ND	ND	6	2	0	0	ND	ND	ND	ND

Table 1. (Cont'd.)

Species	Bay system											
	Upper						Lower					
	Galveston	Matagorda	San Antonio	Aransas	Corpus Christi	Coastwide	Laguna Madre	Laguna Madre	Laguna Madre	Laguna Madre	Laguna Madre	Coastwide
no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha
Black drum (Cont'd.)												
Jan 1967	0	0	ND	ND	0	0	0	0	0	0	0	ND
Feb	0	0	ND	ND	0	0	0	0	0	1	1	ND
Mar	0	4	ND	0	0	0	0	0	0	0	0	ND
Apr	4	2	ND	0	0	0	0	0	0	0	0	ND
May	11	6	ND	2	0	0	0	0	0	0	0	ND
Jun	26	8	0	3	5	5	0	0	0	ND	0	ND
Jul	48	24	ND	12	0	0	ND	ND	ND	ND	ND	ND
Aug	34	17	0	14	0	1	2	1	0	ND	0	ND
Sep	45	23	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Oct	18	9	ND	ND	0	0	2	1	0	0	0	ND
Nov	24	12	ND	0	0	0	0	0	0	0	0	ND
Dec	0	0	0	ND	0	0	2	1	0	0	0	ND
Jan 1968	0	0	0	10	0	0	0	0	0	0	0	1
Feb	0	2	2	17	0	0	0	0	0	0	0	3
Mar	0	0	0	0	0	0	0	0	0	ND	ND	ND
Apr	0	4	ND	5	1	1	2	1	1	1	1	ND
May	0	0	0	0	4	4	19	8	4	25	18	6
Jun	14	8	25	2	7	7	13	5	5	17	12	13
Jul	18	11	16	10	0	0	21	8	10	10	7	12
Aug	18	9	17	4	0	0	0	0	6	5	5	9
Sep	14	7	0	0	3	3	2	1	3	3	3	5
Oct	25	14	6	0	6	6	6	2	1	1	1	10
Nov	14	8	ND	0	1	1	2	1	1	1	1	ND
Dec	4	2	0	0	0	0	0	0	1	1	1	1

Table 1. (Cont'd.)

Species	Bay system																	
	Galveston						Upper						Lower					
	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	Aransas	Christi	Laguna	Madre	no./ha	no./ha	Madre	Laguna	Coastwide			
Month	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha		
Black drum (Cont'd.)																		
Jan 1967	0	0	0	0	0	0	ND	0	0	0	0	0	0	0	0	0	ND	
Feb	0	0	0	0	0	0	ND	0	0	0	0	0	1	1	0	1	ND	
Mar	0	0	4	2	0	0	0	0	0	0	0	0	0	0	0	0	ND	
Apr	4	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	ND	
May	11	5	6	3	1	1	2	0	0	0	0	0	0	0	0	0	ND	
Jun	26	12	8	5	0	3	3	5	0	0	0	0	ND	ND	0	0	ND	
Jul	48	24	13	9	ND	5	12	0	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Aug	34	17	13	9	0	6	14	0	2	1	0	0	ND	ND	0	0	ND	
Sep	45	23	8	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	0	ND	
Oct	18	9	10	4	ND	ND	ND	0	0	0	0	0	0	0	0	0	ND	
Nov	24	12	0	0	ND	0	0	0	0	0	0	0	0	0	0	0	ND	
Dec	0	0	0	0	0	0	ND	0	2	1	0	0	0	0	0	0	ND	
Jan 1968	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0	1	4
Feb	0	0	2	1	2	1	17	0	0	0	0	0	0	0	0	0	3	9
Mar	0	0	0	0	0	0	0	0	0	0	0	0	ND	ND	0	0	ND	ND
Apr	0	0	4	2	ND	2	5	1	2	1	1	1	1	1	1	1	1	ND
May	0	0	0	0	0	0	0	4	4	8	4	4	25	18	18	6	6	30
Jun	14	8	14	6	25	4	2	7	13	5	5	17	17	12	12	13	13	43
Jul	18	11	5	2	16	3	10	0	21	8	0	0	10	7	7	12	12	35
Aug	18	9	7	3	17	4	4	0	0	0	0	6	6	5	9	9	9	23
Sep	14	7	5	2	0	0	0	3	2	1	3	3	3	3	3	5	5	16
Oct	25	14	14	6	6	3	0	6	6	2	6	2	1	1	1	10	10	32
Nov	14	8	8	3	ND	0	0	1	2	1	1	1	1	1	1	1	1	ND
Dec	4	2	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	3

Table 1. (Cont'd.)

Species	Bay system										
	Galveston no./ha	Matagorda no./ha	San Antonio no./ha	Aransas no./ha	Corpus Christi		Upper Laguna Madre		Lower Laguna Madre		Coastwide no./ha
					no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	
Month											
Black drum (Cont'd.)											
Jan 1971	ND	ND	ND	ND	0	0	0	0	0	ND	ND
Feb	ND	ND	ND	ND	0	0	0	0	0	ND	ND
Mar	ND	ND	ND	ND	0	0	0	0	0	ND	ND
Apr	ND	ND	ND	ND	0	0	0	0	0	ND	ND
May	ND	ND	ND	ND	0	0	0	0	0	ND	ND
Jun	ND	ND	ND	ND	0	0	0	0	0	ND	ND
Jul	ND	ND	ND	ND	0	0	0	0	0	ND	ND
Aug	ND	ND	ND	ND	0	0	0	0	0	ND	ND
Sep	ND	ND	ND	ND	0	0	0	0	0	ND	ND
Oct	ND	ND	ND	ND	0	0	ND	4	1	3	0
Nov	ND	ND	ND	ND	0	0	0	0	0	0	0
Dec	ND	ND	ND	ND	0	0	0	0	0	0	0
Jan 1972	ND	ND	ND	ND	0	0	0	0	0	0	0
Feb	ND	ND	ND	ND	0	0	0	0	0	0	0
Mar	ND	ND	ND	ND	0	0	0	0	0	0	0
Apr	ND	ND	ND	ND	0	0	3	1	0	0	0
May	ND	ND	ND	ND	0	0	4	1	0	0	0
Jun	ND	ND	ND	ND	3	3	8	3	3	ND	ND
Jul	ND	ND	ND	ND	0	0	3	1	1	ND	ND
Aug	ND	ND	ND	ND	0	0	3	1	1	ND	ND
Sep	ND	ND	ND	ND	0	0	3	1	1	4	4
Oct	ND	ND	ND	ND	0	0	0	0	0	1	1
Nov	ND	ND	ND	ND	0	0	0	3	1	0	0
Dec	ND	ND	ND	ND	0	0	0	0	0	1	1

Table 1. (Cont'd.)

Species	Bay system											
	Upper					Lower						
	Galveston	Matagorda	San Antonio	Aransas	Corpus Christi	Laguna Madre	Laguna Madre	Laguna Madre	Coastwide			
no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no.	no.	
Month												
Black drum (Cont'd.)												
Apr 1976	0	0	0	0	0	0	0	0	0	0	0	0
May	0	8	2	5	1	0	0	0	5	1	4	6
Spotted seatrout												
May 1961	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Jun	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Jul	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aug	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sep	ND	ND	0	ND	ND	ND	ND	ND	0	0	0	ND
Oct	ND	ND	ND	ND	17	0	0	0	0	0	0	ND
Nov	ND	ND	ND	ND	3	12	5	0	0	0	0	ND
Dec	ND	ND	8	ND	ND	3	2	0	0	0	0	ND
Jan 1962	ND	ND	ND	ND	ND	0	0	0	ND	ND	ND	ND
Feb	7	2	0	0	0	0	0	0	ND	ND	ND	ND
Mar	7	2	0	0	5	2	0	0	0	0	0	ND
Apr	ND	ND	0	0	0	0	0	0	0	0	0	ND
May	ND	ND	5	12	2	0	0	0	0	0	0	ND
Jun	ND	ND	414	142	17	ND	2	1	0	0	0	ND
Jul	ND	ND	14	0	0	0	0	0	0	0	0	ND
Aug	ND	ND	41	15	2	8	1	0	0	0	0	ND
Sep	ND	ND	ND	69	9	18	3	0	0	0	0	ND
Oct	24	8	ND	67	8	30	8	0	0	0	0	ND
Nov	ND	ND	ND	75	6	73	24	ND	ND	ND	ND	ND
Dec	ND	ND	5	0	0	21	7	0	ND	ND	ND	ND

Table 1. (Cont'd.)

Species	Bay system												Coastwide	
	Upper						Lower							
	Galveston	Matagorda	San Antonio	Aransas	Corpus Christi	Upper Laguna Madre	Lower Laguna Madre	Upper Laguna Madre	Lower Laguna Madre	Upper Laguna Madre	Lower Laguna Madre	Coastwide		
no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no.	
Spotted seatrout (Cont'd.)														
Jan 1963	ND	3	1	0	0	12	7	ND	ND	ND	ND	ND	ND	ND
Feb	0	0	0	0	0	12	7	0	0	ND	ND	0	0	ND
Mar	0	0	0	6	1	12	7	0	0	0	0	0	0	2
Apr	0	11	2	12	2	18	10	ND	ND	0	0	0	0	ND
May	0	0	0	0	0	0	0	ND	ND	0	0	0	0	ND
Jun	0	0	0	12	2	2	1	0	0	0	0	0	0	2
Jul	80	11	2	6	1	12	2	ND	ND	0	0	0	0	ND
Aug	17	55	29	0	0	18	6	0	0	0	0	0	0	13
Sep	12	47	15	118	20	48	16	0	0	0	0	0	0	ND
Oct	71	32	11	71	12	12	4	0	0	0	0	0	0	ND
Nov	125	17	6	18	3	55	18	3	1	0	0	0	0	39
Dec	0	0	0	0	0	3	1	ND	ND	ND	ND	ND	ND	ND
Jan 1964	ND	ND	0	0	0	ND	0	ND	ND	ND	ND	ND	ND	ND
Feb	0	0	0	0	0	ND	0	0	0	0	0	0	0	ND
Mar	6	0	0	0	0	ND	8	8	3	ND	ND	0	0	ND
Apr	0	0	0	0	0	ND	0	0	0	0	0	0	0	ND
May	4	0	0	ND	ND	ND	0	0	0	ND	ND	0	0	ND
Jun	2	ND	ND	ND	ND	ND	2	2	1	ND	ND	1	1	ND
Jul	2	ND	ND	ND	ND	ND	6	6	1	ND	ND	1	1	ND
Aug	36	ND	ND	ND	ND	ND	6	6	2	ND	ND	2	2	ND
Sep	23	ND	ND	ND	ND	ND	5	5	2	ND	ND	2	2	ND
Oct	43	ND	ND	ND	ND	ND	0	0	0	ND	ND	0	0	ND
Nov	66	ND	ND	ND	ND	ND	12	12	5	ND	ND	5	5	ND
Dec	13	ND	0	ND	ND	ND	2	2	1	ND	ND	1	1	ND

Table 1. (Cont'd.)

Species	Bay system															
	Upper						Lower									
	Galveston	Matagorda	San Antonio	Aransas	Corpus Christi	Laguna Madre	Galveston	Matagorda	San Antonio	Aransas	Corpus Christi	Laguna Madre				
no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha				
Month																
Spotted seatrout (Cont'd.)																
Jan 1965	8	3	ND	0	0	ND	0	0	0	ND	7	0	24	14	ND	ND
Feb	0	0	2	0	0	0	0	0	0	16	7	0	5	5	3	13
Mar	0	0	0	3	0	0	1	0	1	3	2	ND	27	15	ND	ND
Apr	0	0	0	3	0	ND	1	0	1	8	6	ND	9	10	ND	ND
May	0	0	0	0	0	0	0	0	0	1	1	0	0	0	<1	1
Jun	11	5	0	12	3	ND	3	0	0	ND	ND	ND	0	0	ND	ND
Jul	33	14	64	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aug	12	5	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sep	90	36	38	117	41	ND	2	2	2	2	2	ND	6	6	ND	ND
Oct	125	50	18	61	19	ND	5	4	5	5	4	ND	10	6	ND	ND
Nov	75	27	54	19	5	ND	5	4	5	5	4	ND	11	6	ND	ND
Dec	28	11	ND	11	4	ND	4	6	6	6	6	ND	22	13	ND	ND
Jan 1966	7	1	6	0	0	ND	0	0	0	7	3	ND	24	21	ND	ND
Feb	0	0	0	ND	0	0	ND	0	0	7	3	ND	20	11	ND	ND
Mar	0	0	0	0	0	0	0	0	0	0	0	5	15	4	3	8
Apr	0	0	0	0	0	ND	0	0	0	1	1	5	0	0	ND	ND
May	0	0	2	0	1	ND	0	0	0	2	1	0	14	4	ND	ND
Jun	20	9	5	ND	2	ND	ND	ND	ND	2	1	ND	ND	ND	ND	ND
Jul	11	5	0	ND	0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aug	12	5	5	16	6	ND	6	4	6	ND	ND	ND	ND	ND	ND	ND
Sep	32	13	17	50	23	ND	7	4	7	7	4	13	0	0	ND	ND
Oct	6	2	69	ND	4	ND	ND	ND	ND	ND	ND	17	29	15	ND	ND
Nov	2	1	8	12	4	ND	ND	ND	ND	ND	ND	8	12	8	ND	ND
Dec	0	0	0	ND	ND	ND	0	0	0	0	0	ND	0	0	ND	ND

Table 1. (Cont'd.)

Species Month	Bay system																
	Galveston			Matagorda			San Antonio		Aransas		Corpus Christi		Upper Laguna Madre		Lower Laguna Madre		Coastwide
	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha
Spotted seatrout (Cont'd.)																	
Jan 1967	0	0	0	0	0	0	ND	ND	ND	ND	ND	8	6	9	6	ND	ND
Feb	0	0	0	0	0	0	ND	ND	ND	1	1	21	11	9	7	ND	ND
Mar	0	0	4	2	2	0	0	0	0	3	3	13	10	0	0	ND	ND
Apr	0	0	4	2	2	5	3	2	2	3	3	6	4	5	1	ND	ND
May	0	0	0	0	0	38	0	16	0	0	0	4	3	0	0	ND	ND
Jun	0	0	2	1	1	9	1	13	1	1	1	2	1	ND	ND	ND	ND
Jul	8	4	18	12	0	74	0	31	0	0	0	ND	8	ND	ND	ND	ND
Aug	18	9	25	17	0	40	3	38	3	3	12	12	8	ND	ND	ND	ND
Sep	39	20	8	3	ND	ND	ND	ND	ND	7	7	22	11	ND	ND	ND	ND
Oct	80	41	60	24	ND	ND	13	ND	13	4	4	57	16	50	32	ND	ND
Nov	25	13	10	4	ND	2	3	1	3	4	4	57	16	50	32	ND	ND
Dec	4	2	3	1	ND	ND	1	ND	1	1	1	90	18	0	0	ND	ND
Jan 1968	0	0	0	0	0	0	0	1	2	0	0	0	0	13	8	2	9
Feb	0	0	0	0	0	0	0	0	0	0	0	9	5	2	1	1	6
Mar	0	0	0	0	0	0	0	0	0	0	0	9	4	ND	ND	ND	ND
Apr	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	<1	1
May	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	<1	1
Jun	4	2	9	4	0	0	1	0	0	1	1	34	13	7	5	7	25
Jul	30	18	2	1	2	5	0	2	5	0	0	3	1	1	5	10	29
Aug	25	13	14	6	0	2	4	1	2	4	4	22	8	1	1	11	33
Sep	14	7	7	3	0	12	8	5	8	8	8	10	4	4	4	8	31
Oct	16	9	7	3	0	15	7	7	7	7	7	33	12	4	3	12	41
Nov	7	4	68	26	ND	28	9	9	16	16	16	55	22	16	13	ND	ND
Dec	0	0	5	1	21	2	1	1	5	5	5	42	17	11	9	11	39

Table 1. (Cont'd.)

Species	Bay system												
	Upper						Lower						
	Galveston	Matagorda	San Antonio	Aransas	Corpus Christi	Laguna Madre	Laguna Madre	Laguna Madre	Laguna Madre	Laguna Madre	Laguna Madre	Coastwide	
no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	
Month													
Spotted seatrout (Cont'd.)													
Jan 1969	0	0	0	11	5	1	12	5	3	2			ND
Feb	0	0	0	24	11	10	30	12	3	2			ND
Mar	0	0	0	4	2	0	21	8	1	1			ND
Apr	4	2	0	0	0	7	6	2	0	0			ND
May	2	1	0	ND	ND	0	12	4	0	0			ND
Jun	ND	ND	ND	ND	ND	25	0	0	ND	ND			ND
Jul	ND	ND	ND	ND	ND	12	1	ND	ND	ND			ND
Aug	ND	ND	ND	ND	ND	25	2	ND	ND	ND			ND
Sep	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			ND
Oct	ND	ND	ND	ND	ND	0	0	ND	ND	ND			ND
Nov	ND	ND	ND	ND	ND	4	4	ND	28	16			ND
Dec	ND	ND	ND	ND	ND	0	0	ND	12	7			ND
Jan 1970	ND	ND	ND	ND	ND	0	8	3	5	3			ND
Feb	ND	ND	ND	ND	ND	0	ND	ND	2	1			ND
Mar	ND	ND	ND	ND	ND	1	6	2	2	1			ND
Apr	ND	ND	ND	ND	ND	0	8	2	0	0			ND
May	ND	ND	ND	ND	ND	0	ND	ND	0	0			ND
Jun	ND	ND	ND	ND	ND	2	0	0	ND	ND			ND
Jul	ND	ND	ND	ND	ND	1	22	8	ND	ND			ND
Aug	ND	ND	ND	ND	ND	ND	6	1	ND	ND			ND
Sep	ND	ND	ND	ND	ND	4	15	3	ND	ND			ND
Oct	ND	ND	ND	ND	ND	3	0	0	ND	ND			ND
Nov	ND	ND	ND	ND	ND	0	31	5	ND	ND			ND
Dec	ND	ND	ND	ND	ND	1	19	7	ND	ND			ND

Table 1. (Cont'd.)

Species	Bay system									
	Galveston	Matagorda	San Antonio	Aransas	Corpus Christi	Upper Laguna Madre	Lower Laguna Madre	Coastwide		
Month	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha
Spotted seatrout (Cont'd.)										
Jan 1971	ND	ND	ND	ND	1	5	1	ND		
Feb	ND	ND	ND	ND	0	19	3	ND		
Mar	ND	ND	ND	ND	0	0	0	ND		
Apr	ND	ND	ND	ND	0	0	0	ND		
May	ND	ND	ND	ND	0	0	0	ND		
Jun	ND	ND	ND	ND	1	4	1	ND		
Jul	ND	ND	ND	ND	0	7	2	ND		
Aug	ND	ND	ND	ND	0	6	2	ND		
Sep	ND	ND	ND	ND	6	ND	5	8	7	
Oct	ND	ND	ND	ND	0	18	5	7	7	
Nov	ND	ND	ND	ND	0	25	7	25	23	
Dec	ND	ND	ND	ND	1	38	6	17	17	
Jan 1972	ND	ND	ND	ND	0	11	4	7	5	
Feb	ND	ND	ND	ND	0	12	2	5	3	
Mar	ND	ND	ND	ND	0	6	2	0	0	
Apr	ND	ND	ND	ND	0	3	1	0	0	
May	ND	ND	ND	ND	0	4	1	0	0	
Jun	ND	ND	ND	ND	0	28	10	ND	ND	
Jul	ND	ND	ND	ND	0	11	4	ND	ND	
Aug	ND	ND	ND	ND	3	25	8	ND	ND	
Sep	ND	ND	ND	ND	0	6	2	7	7	
Oct	ND	ND	ND	ND	1	31	5	7	6	
Nov	ND	ND	ND	ND	6	25	9	8	6	
Dec	ND	ND	ND	ND	0	3	1	1	1	

Table 1. (Cont'd.)

Species Month	Bay system																
	Galveston		Matagorda		San Antonio		Aransas		Corpus Christi		Upper Laguna Madre		Lower Laguna Madre		Coastwide		
	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	
Spotted seatrout (Cont'd.)																	
Apr 1976	0	0	0	0	0	0	25	3	0	0	0	0	0	0	0	4	3
May	0	0	0	0	0	0	5	1	0	0	0	0	0	10	2	2	3
Southern flounder																	
May 1961	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Jun	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Jul	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aug	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sep	ND	ND	ND	ND	5	ND	ND	ND	ND	0	0	0	0	0	0	0	0
Oct	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	0	0	0	0	0	0	0
Nov	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	0	0	0	0	0	0	0
Dec	ND	ND	ND	ND	ND	0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Jan 1962	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Feb	ND	ND	ND	ND	ND	3	ND	ND	0	0	0	0	0	ND	ND	ND	ND
Mar	139	39	ND	ND	0	0	ND	ND	11	4	2	1	0	0	0	0	0
Apr	44	7	ND	ND	29	2	ND	ND	18	7	5	2	0	0	0	0	0
May	18	2	ND	ND	9	2	ND	ND	18	6	0	0	0	0	0	0	0
Jun	ND	ND	ND	ND	43	3	ND	ND	ND	ND	0	0	0	3	5	ND	ND
Jul	13	3	ND	ND	0	0	ND	ND	6	1	0	0	0	0	0	0	0
Aug	260	28	ND	ND	5	1	ND	ND	0	0	0	0	0	0	0	0	0
Sep	18	17	ND	ND	0	0	ND	ND	0	0	0	0	0	0	0	0	0
Oct	12	4	ND	ND	ND	ND	ND	ND	0	0	ND	ND	0	0	0	0	0
Nov	0	0	ND	ND	ND	ND	ND	ND	0	0	ND	ND	ND	ND	ND	ND	ND
Dec	0	0	ND	ND	0	0	ND	ND	0	0	0	0	0	ND	ND	ND	ND

Table 1. (Cont'd.)

Species Month	Bay system												Coastwide no./ha no.						
	Galveston			Matagorda			San Antonio		Aransas		Corpus Christi			Upper Laguna Madre		Lower Laguna Madre			
	no./ha	no.	no./ha	no./ha	no.	no./ha	no.	no./ha	no./ha	no.	no./ha	no.		no./ha	no./ha	no.	no./ha	no./ha	
Southern flounder (Cont'd.)																			
Jan 1969	5	3	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	2	4
Feb	102	57	12	5	0	0	0	7	3	0	0	0	0	0	0	1	1	26	66
Mar	57	29	114	33	0	0	0	2	1	1	1	5	2	2	1	1	1	32	67
Apr	70	39	100	4	ND	ND	ND	83	38	2	2	22	8	8	5	3	ND	ND	ND
May	36	20	25	1	ND	ND	ND	ND	ND	1	1	25	8	8	0	0	ND	ND	ND
Jun	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	19	3	3	ND	ND	ND	ND	ND
Jul	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aug	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sep	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Oct	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	0	0	0	0	0	0	0	ND	ND
Nov	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	0	0	0	0	0	0	0	ND	ND
Dec	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	0	0	0	0	0	0	0	ND	ND
Jan 1970	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	0	0	0	0	0	0	0	ND	ND
Feb	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	0	ND	0	0	0	0	0	ND	ND
Mar	ND	ND	ND	ND	ND	ND	ND	ND	ND	1	1	0	0	0	2	1	1	ND	ND
Apr	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	0	0	0	0	0	0	0	ND	ND
May	ND	ND	ND	ND	ND	ND	ND	ND	ND	2	2	ND	0	0	0	0	0	ND	ND
Jun	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	0	3	1	1	ND	ND	ND	ND	ND
Jul	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	0	0	0	0	ND	ND	ND	ND	ND
Aug	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	0	0	0	ND	ND	ND	ND	ND
Sep	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	0	0	0	0	ND	ND	ND	ND	ND
Oct	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	0	0	0	0	ND	ND	ND	ND	ND
Nov	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	0	0	0	0	ND	ND	ND	ND	ND
Dec	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	0	0	0	0	ND	ND	ND	ND	ND

Table 1. (Cont'd.)

Species Month	Bay system															
	Galveston		Matagorda		San Antonio		Aransas		Corpus Christi		Upper Laguna Madre		Lower Laguna Madre		Coastwide	
	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha
Sheepshead (Cont'd.)																
Jan 1963	ND		0	0	ND		ND	ND	0	0	ND		ND		ND	
Feb	0	0	0	0	ND		ND	ND	0	0	ND		ND		ND	
Mar	0	0	0	0	0		ND	ND	0	0	ND		0		ND	
Apr	0	0	0	0	ND		ND	ND	5	3	ND		0		ND	
May	0	0	0	0	ND		ND	ND	5	3	ND		0		ND	
Jun	11	2	0	0	0		ND	ND	0	0	ND		0		ND	
Jul	0	0	0	0	0		ND	ND	0	0	ND		0		ND	
Aug	0	0	0	0	0		ND	ND	0	0	ND		0		ND	
Sep	0	0	0	0	ND		ND	ND	9	3	0		0		ND	
Oct	0	0	0	0	0		ND	ND	6	2	0		0		ND	
Nov	0	0	0	0	0		ND	ND	6	2	0		0		ND	
Dec	0	0	0	0	ND		ND	ND	6	2	ND		0		ND	
Jan 1964	ND		ND	ND	0		0	0	0	0	ND		ND		ND	
Feb	0	0	ND	ND	0		0	0	0	0	ND		ND		ND	
Mar	0	0	ND	ND	ND		0	0	ND	0	0		ND		ND	
Apr	0	0	ND	ND	ND		ND	ND	ND	0	0		ND		ND	
May	16	7	ND	ND	ND		ND	ND	ND	0	ND		ND		ND	
Jun	5	2	ND	ND	ND		ND	ND	ND	0	0		ND		ND	
Jul	5	2	ND	ND	ND		ND	ND	ND	0	0		ND		ND	
Aug	2	1	ND	ND	ND		ND	ND	ND	0	0		ND		ND	
Sep	0	0	ND	ND	ND		ND	ND	0	0	0		ND		ND	
Oct	0	0	ND	ND	ND		ND	ND	ND	0	0		ND		ND	
Nov	5	2	ND	ND	ND		0	0	0	0	0		ND		ND	
Dec	0	0	ND	ND	0		0	0	0	0	0		ND		ND	

Table 1. (Cont'd.).

Species	Bay system											
	Galveston	Matagorda	San Antonio	Aransas	Corpus Christi	Upper		Lower		Coastwide		
						Laguna	Madre	Laguna	Madre			
Month	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	
Sheepshead (Cont'd.)												
Jan 1971	ND	ND	ND	ND	0	0	0	0	ND	0	0	ND
Feb	ND	ND	ND	ND	0	0	0	0	ND	0	0	ND
Mar	ND	ND	ND	ND	0	0	0	0	ND	0	0	ND
Apr	ND	ND	ND	ND	0	0	0	0	ND	0	0	ND
May	ND	ND	ND	ND	0	0	0	0	ND	0	0	ND
Jun	ND	ND	ND	ND	0	0	0	0	ND	0	0	ND
Jul	ND	ND	ND	ND	1	1	0	0	ND	0	0	ND
Aug	ND	ND	ND	ND	1	1	3	1	ND	3	1	ND
Sep	ND	ND	ND	ND	0	0	ND	0	10	0	9	ND
Oct	ND	ND	ND	ND	0	0	0	0	13	0	13	ND
Nov	ND	ND	ND	ND	0	0	0	0	4	0	4	ND
Dec	ND	ND	ND	ND	0	0	0	0	1	0	1	ND
Jan 1972	ND	ND	ND	ND	0	0	0	0	1	0	1	ND
Feb	ND	ND	ND	ND	0	0	6	1	0	0	0	ND
Mar	ND	ND	ND	ND	0	0	3	1	0	0	0	ND
Apr	ND	ND	ND	ND	0	0	3	1	2	1	1	ND
May	ND	ND	ND	ND	0	0	4	1	3	2	2	ND
Jun	ND	ND	ND	ND	0	0	0	0	ND	0	0	ND
Jul	ND	ND	ND	ND	0	0	0	0	ND	0	0	ND
Aug	ND	ND	ND	ND	0	0	22	7	ND	7	ND	ND
Sep	ND	ND	ND	ND	0	0	11	4	9	4	9	ND
Oct	ND	ND	ND	ND	0	0	0	0	5	0	4	ND
Nov	ND	ND	ND	ND	0	0	0	0	4	0	3	ND
Dec	ND	ND	ND	ND	0	0	0	0	1	0	1	ND

Table 1. (Cont'd.)

Species Month	Bay system																
	Galveston		Matagorda		San Antonio		Aransas		Corpus Christi		Upper Laguna Madre		Lower Laguna Madre				
	no./ha	no.	no./ha	no.	no./ha	no.	no./ha	no.	no./ha	no.	no./ha	no.	no./ha	no.	no./ha		
Apr 1976	4	2	4	1	0	0	25	3	0	0	0	0	0	0	0	5	6
May	0	0	4	1	0	0	20	4	0	0	0	0	0	25	5	7	10

Sheepshead (Cont'd.)

Table 2. (Cont'd.)

Species	Bay system							Upper Laguna Madre
	Galveston	Matagorda	Aransas	Corpus Christi	Aransas	Corpus Christi	Upper Laguna Madre	
Year	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no./ha	no.
Spotted seatrout								
1963	ND	20	22	16	41	79	ND	ND
1964	ND	ND	ND	ND	ND	ND	ND	ND
1965	30	151	ND	ND	ND	ND	ND	ND
1966	8	36	24	106	ND	ND	ND	ND
1967	16	89	12	66	ND	ND	ND	ND
1968	8	53	9	44	5	26	4	41
1969	ND	ND	ND	ND	ND	ND	ND	ND
1970	ND	ND	ND	ND	ND	ND	ND	ND
1971	ND	ND	ND	ND	ND	1	8	8
1972	ND	ND	ND	ND	ND	1	9	13
Southern flounder								
1963	ND	30	96	3	15	15	ND	ND
1964	ND	ND	ND	ND	ND	ND	ND	ND
1965	5	27	ND	ND	ND	ND	ND	ND
1966	3	14	4	17	ND	ND	ND	ND
1967	11	61	4	21	ND	ND	ND	ND
1968	5	29	25	116	5	25	<1	2
1969	ND	ND	ND	ND	ND	ND	ND	6
1970	ND	ND	ND	ND	ND	ND	ND	ND
1971	ND	ND	ND	ND	ND	1	8	ND
1972	ND	ND	ND	ND	ND	<1	1	2

Table 2. (Cont'd.)

Species Year	Bay system						
	Galveston no./ha	Matagorda no./ha	Aransas no./ha	Christi no./ha	Upper Laguna Madre no./ha	Corpus Christi no./ha	Upper Laguna Madre no./ha
1963	ND	30	96	ND	3	15	ND
1963	ND	0	0	ND	3	15	ND
1964	ND	ND	ND	ND	ND	ND	ND
1965	10	48	ND	ND	ND	ND	ND
1966	<1	1	6	26	ND	ND	ND
1967	1	6	2	9	ND	ND	ND
1968	1	8	4	19	5	23	1
1969	ND	ND	ND	ND	ND	ND	ND
1970	ND	ND	ND	ND	ND	ND	ND
1971	ND	ND	ND	ND	<1	2	ND
1972	ND	ND	ND	ND	0	0	4

Sheepshead

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