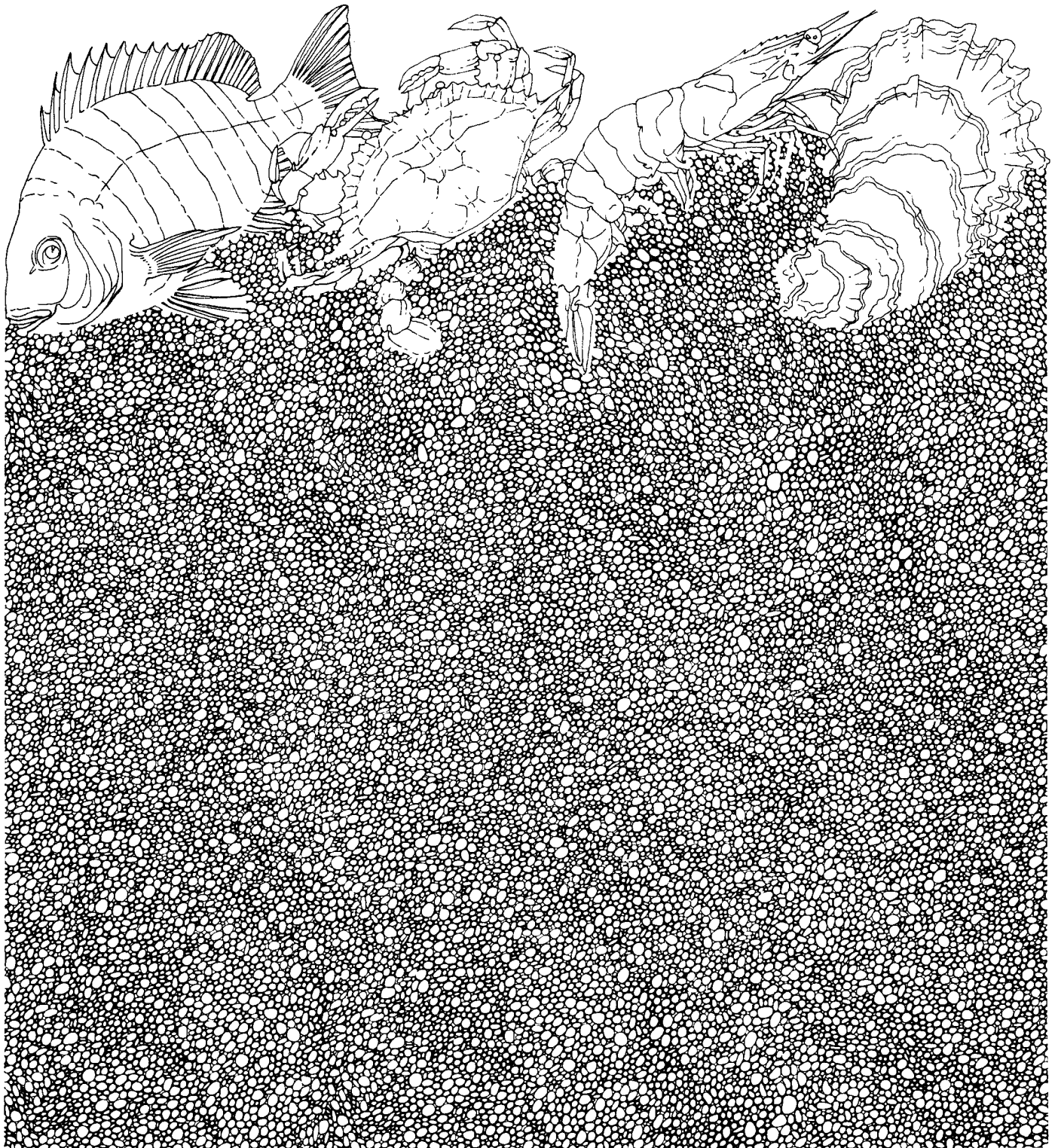


Bag Seining For Striped Bass (*Morone saxatilis*) Stocked In Trinity Bay, Texas

by James Dailey

Management Data Series Number 145
1988

Texas Parks and Wildlife Department
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ABSTRACT

A total of 4,241,500 striped bass (Morone saxatilis) fry (5 mm) were stocked into Trinity Bay, Texas beginning in May 1983 continuing through April 1985. A total of 42 bag seine collections were obtained in the vicinity of each shoreline stocking site for two and one half months after stocking in 1983 and 1984; no striped bass were caught.

INTRODUCTION

Historical commercial landings document the presence of striped bass (*Morone saxatilis*) in Texas coastal waters from 1887 to 1932 (Collins 1892, Townsend 1900, Fielder 1936). It is not known why this fishery disappeared. Deteriorating water quality in spawning rivers, saltwater barriers in rivers, commercial harvesting, and the possibility that Texas coastal waters may be the southern environmental boundary of striped bass habitat probably all played a part in the disappearance of the stocks. Because striped bass were once native to Texas estuaries, and with added evidence of successful introduction into Texas reservoirs during the 1970's, the Texas Parks and Wildlife Department (TPWD) is attempting to reintroduce striped bass into Texas marine waters. Successful marine striped bass stockings have been documented in California (Scofield 1931), Mississippi and Alabama (McIlwain 1981, Minton 1985, Nicholson 1985). Striped bass were initially reintroduced into Texas waters from 1975-1977. A total of 481,000 fish were stocked into the San Antonio Bay system (Matlock et al. 1984). Only one fish was captured from this stocking. Corpus Christi Bay received 6,273 fish; there were no reported returns. Of 10,000 striped bass stocked in Sabine Lake, six were recaptured one month later in TPWD seine samples (Matlock et al. 1984). The purpose of the present study was to determine the success of striped bass stockings into Trinity Bay.

MATERIALS AND METHODS

Striped bass fry for stocking were obtained from a cooperative effort between the TPWD Inland Fishery and Louisiana Fish and Wildlife personnel at Louisiana's Toledo Bend Fish Research Station. Average size of all stocked fish was <6 mm.

Striped bass fry were stocked during three consecutive years in Trinity Bay. In May 1983, 900,000 fry were stocked at 3 sites; in April and May 1984, 1,395,000 fish were stocked at one site; and in April 1985, 1,946,500 fish were stocked at two sites (Table 1).

Bag seines were pulled at three sites 7 days after the last stocking date and every 14 days thereafter through 11 weeks. Bag seines were collected at one randomly selected stocking site and at 0.4 and 0.8 kilometer from the stocking site. Seines were pulled during the day only. Between June and September 1983, 24 bag seine collections, and in 1984 between May and July, 18 collections were obtained at shoreline sites. In 1985 no collections were obtained after stocking. Bag seines and collection procedures are described by McEachron and Green (1986).

RESULTS AND DISCUSSION

No striped bass were caught in bag seine samples after fry were stocked. Failure to capture stocked fish may be due to quick dispersal of fry into the open estuarine environment, movement up into the Trinity riverine system, and sampling only in the estuarine system. Juvenile striped bass migrate in response to a wide variety of factors including salinity, food availability, and temperature (Setzler-Hamilton et al. 1980, Markle and Grant 1970, Nicholson et al. 1986). No studies were conducted to estimate survival of stocked fry but increased catches of striped bass in Galveston Bay have occurred since 1986 (TPWD unpublished data). This indicates increased numbers of fish available to fishermen. These fish could come from escapement through Lake Livingston dam, natural spawning below Lake Livingston dam, immigration from the Neches River system or TPWD estuarine stockings.

Stocking of striped bass in marine waters to increase catch has been documented. Pacific coast striped bass fisheries were established with stocking fewer (<450 fish) but larger (125-129 mm) fish directly into bays (Scofield 1931, Raney 1958). Alabama has had success stocking larger fish, stocking riverine areas, and utilizing electrofishing gear and tag returns to verify survival of stocked fish (Minton 1985). Seining efforts by Alabama personnel failed to catch striped bass fingerlings (Minton 1981, 1982). The successful riverine stockings upstream from estuarine waters in Mississippi (Nicholson 1983) and Alabama (Minton 1985) indicate that stocking in the Trinity River instead of Trinity Bay might be more effective. Monitoring stocking success of stocking in the river would probably best be done with electrofishing gear and releasing larger tagged fish. However, night seining may also be more successful than day seining to collect small (<100 mm) striped bass (McIlwain 1980).

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Table 1. Number and mean total length (mm) of striped bass fry stocked in Trinity Bay from May 1983 through April 1985. Blanks indicate no mean length reported.

Date	Latitude	Longitude	No.	Mean length (mm)
May 04 1983	29°42'42"	94°41'31"	100,000	5
	24°42'21"	94°44'21"	100,000	5
09	29°40'15"	94°41'50"	315,000	5
	29°39'40"	94°41'50"	385,000	5
Apr 30 1984	29°38'30"	94°42'05"	980,000	
May 03	29°38'30"	94°42'05"	400,000	
14	29°38'30"	94°42'05"	15,000	6
Apr 15 1985	29°39'15"	94°31'45"	1,000,000	5
28	29°39'15"	94°41'35"	500,000	5
29	29°94'05"	94°41'55"	446,500	

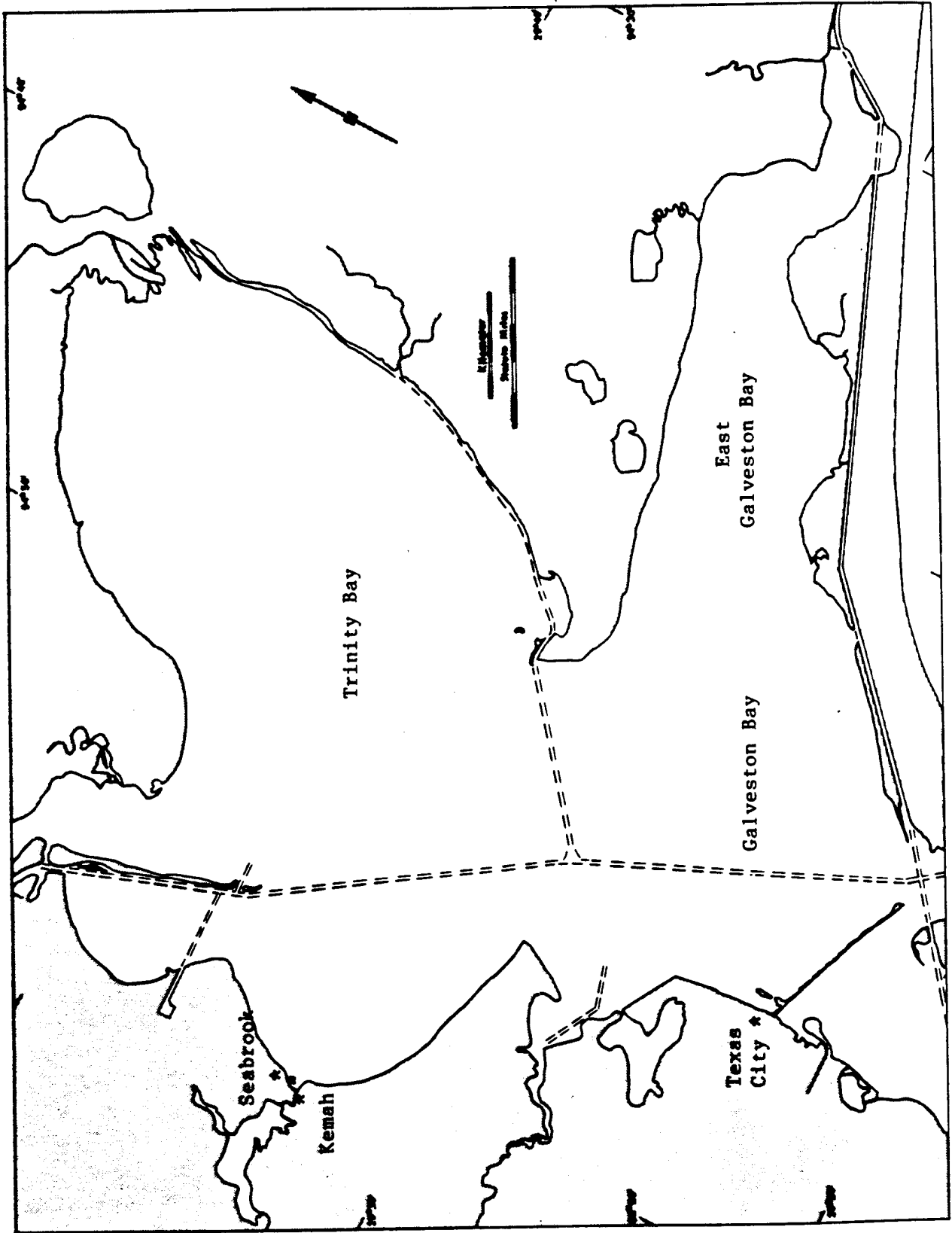
Table 2. Sampling dates and site descriptions of striped bass sampling sites in Trinity Bay.

Date sampled	Latitude	Longitude	Station description
Jun 21 1983	28°43'40"	94°41'35"	Round Point, 9.1 kilometers N of Double Bayou.
	29°42'25"	94°41'25"	Ash Point, 5.7 kilometers N of Double Bayou.
	29°40'15"	94°41'50"	1.7 kilometers N of Double Bayou.
	29°36'50"	94°42'50"	Lone Oak Bayou.
	29°39'40"	94°41'50"	0.4 kilometer N of Double Bayou.
	29°35'10"	94°44'10"	2 kilometers S of Lone Oak Bayou.
29	29°42'42"	94°44'31"	1.6 kilometers from No. 1 Marker on Trinity River Channel, Compass heading 330°.
	29°42'21"	94°44'21"	0.8 kilometer from No. 1 Marker on Trinity River Channel, Compass heading 330°.
	29°41'00"	94°41'40"	Black Point, 3.2 kilometers N of Double Bayou.
	29°42'42"	94°44'10"	0.4 kilometer from No. 1 Marker on Trinity River Channel, compass reading 260°.
	29°42'21"	94°44'21"	0.8 kilometer from No. 1 Marker on Trinity River Channel, compass reading 330°.
Jul 26	29°42'42"	94°44'31"	1.6 kilometers from No. 1 Marker on Trinity River Channel, compass reading 330°.
	29°41'00"	94°41'40"	Black Point, 3.2 kilometers N of Double Bayou.
Sep 28	29°42'42"	94°44'31"	1.6 kilometers from No. 1 Marker on Trinity River Channel, compass reading 330°.
	29°42'21"	94°44'21"	0.8 kilometer from No. 1 Marker on Trinity River Channel, compass reading 330°.

Table 2. (Cont'd.)

<u>Date sampled</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Station description</u>
May 22 1984	29°38'30"	94°42'05"	0.5 kilometer S of Double Bayou.
Jun 04	29°38'30"	94°42'05"	0.5 kilometer S of Double Bayou.
19	29°38'30"	94°42'05"	0.5 kilometer S of Double Bayou.
Jul 02	29°38'30"	94°42'05"	0.5 kilometer S of Double Bayou.
16	29°38'30"	94°42'05"	0.5 kilometer S of Double Bayou.
30	29°38'30"	94°42'05"	0.5 kilometer S of Double Bayou.

Figure 1. Trinity Bay



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