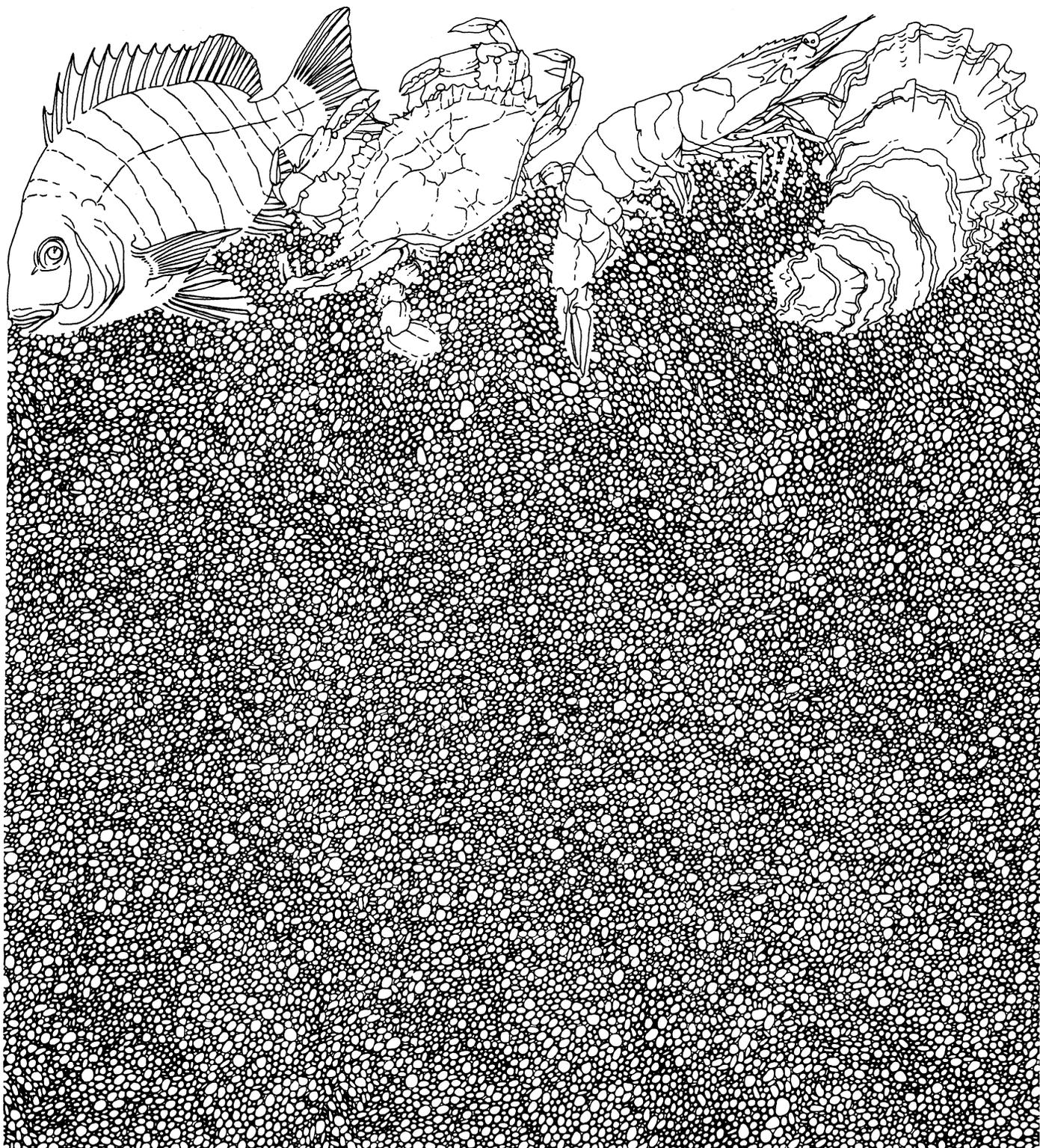


Young Tarpon in a Roadside Ditch Near Matagorda Bay in Calhoun County, Texas

by Steven R. Marwitz

Management Data Series Number 100
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Texas Parks and Wildlife Department
Coastal Fisheries Branch



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NEAR MATAGORDA BAY IN CALHOUN COUNTY, TEXAS

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ABSTRACT

In October 1983, young tarpon were reported caught in a roadside ditch near Seadrift, Texas, and used as fish bait. Texas Parks and Wildlife Department (TPWD) personnel removed a total of 228 tarpon on 21 and 28 October and 7 November 1983. Ninety-four tarpon were transported to the TPWD Heart of the Hills Research Station in Ingram, Texas, six were transported to the TPWD Marine Laboratory in Rockport, Texas, and 128 were released back into the bay. Forty-four of the released tarpon were tagged. Weight-length and length-length relationships for tarpon were calculated from these fish.

The occurrence of tarpon in this ditch may have been the result of flooding of Coloma Creek that connects Matagorda Bay via Powderhorn Lake. This report is the first documentation of such a large number of juvenile tarpon in Texas.

INTRODUCTION

Tarpon, once numerous along the Texas coast, are not as abundant compared to the pre-1950's (Marwitz 1984). Life history requirements suggest that young tarpon can be found in upper bays and near or in river mouths (Simpson 1954, Moffett 1976, Marwitz 1984). The occurrence of young tarpon in Texas has not been well documented. Two small tarpon [48 mm and 99 mm total length (TL)] were taken at a collecting station within the Aransas National Wildlife Refuge near Austwell, Texas, on 18 November 1950 (Simpson 1954). On 19 and 22 September 1975, five small tarpon (approximately 102 mm TL) were collected by Texas Parks and Wildlife Department (TPWD) biologists in drainage ditches adjacent to Galveston Bay in Seabrook, Texas (Moffett 1976).

In October 1983, young tarpon were reported caught in a roadside ditch near Seadrift, Texas, and used as fish bait. The freshwater roadside ditch lies along Highway 185 between Seadrift and Port O'Connor in Calhoun County, Texas (Fig. 1). This report documents the TPWD investigation and subsequent removal of the tarpon.

MATERIALS AND METHODS

On 20 October 1983, TPWD biologists went to the ditch and caught 10 young tarpon in one throw of a 4.3-m cast net. Two were kept for positive identification and the remainder were released back into the ditch.

A 4.3-m cast net and a 18.3-m bag seine were used on 21 and 28 October and 7 November to capture tarpon in the ditch. Total length (nearest mm), standard length (nearest mm) and weight (nearest g) were recorded prior to disposition of fish. Temperature, dissolved oxygen and salinity were measured at the capture and release site.

Regression coefficients for equations of the form $y = a + bx$ were estimated for the \log_{10} transformed whole weight (W) as a function of \log_{10} transformed total length (TL), W as a function of \log_{10} transformed standard length (SL), and TL as a function of SL.

RESULTS

A total of 228 tarpon were captured from the ditch along with 16 other species of finfishes and shellfishes (Table 1). Ninety-four tarpon (202-252 mm TL) were transported to the TPWD Heart of the Hills Research Station in Ingram, Texas, for temperature tolerance studies. Six (191-236 mm TL) were transported to the TPWD Marine Laboratory in Rockport, Texas, for public display in aquaria. One hundred twenty-eight (136-304 mm TL)

were released in Coloma Creek just above the confluence with Powderhorn Lake; forty-four of these were tagged with internal abdominal anchor tags. In both the roadside ditch and at the release site, water temperature was 22.0 C, dissolved oxygen was 4.0 ppm and salinity was 0.0 ppt. Approximately 93% of the tarpon survived transport.

Individual total lengths, standard lengths and weights were obtained from 159 fish (Table 2). Weight-length and length-length regressions are presented in Table 3.

DISCUSSION

The occurrence of such a large number of juvenile tarpon in Texas is not documented in the scientific literature. Rickards (1968) found juvenile tarpon (19.6 - 273.5 mm SL) in marsh pools and creeks on Sapelo Island, Georgia. He reported that they grew approximately 30 mm per month and reported W-SL regression equation of $\log W = -6.782 + 3.187 \log SL$. Though the equations are similar, the slope presented by Rickards (1968) did not fall within the confidence interval of this study. The smaller sized fish in the former study may have contributed to the differences.

The occurrence of these tarpon in this ditch may have been a result of flooding of Coloma Creek. This creek drains the Powderhorn Ranch and enters Powderhorn Lake, a tertiary bay of Matagorda Bay. The tarpon probably were trapped when the flood waters receded.

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Table 1. List of common and scientific names of finfishes and shellfishes captured in the isolated roadside ditch.

Common name	Scientific name ^a
Alligator gar	<u>Lepisosteus spatula</u>
Black crappie	<u>Pomoxis nigromaculatus</u>
Bluegill	<u>Lepomis macrochirus</u>
Common carp	<u>Cyprinus carpio</u>
Family silversides	Atherinidae
Fat sleeper	<u>Dormitator maculatus</u>
Gulf killifish	<u>Fundulus grandis</u>
Mosquitofish	<u>Gambusia affinis</u>
Sailfin molly	<u>Poecilia latipinna</u>
Sheepshead minnow	<u>Cyprinodon variegatus</u>
Spotted gar	<u>Lepisosteus oculatus</u>
Tarpon	<u>Megalops atlanticus</u>
Warmouth	<u>Lepomis gulosus</u>
Blue crab	<u>Callinectes sapidus</u>
Family crayfish	Astacidae
Grass shrimp	<u>Palaemonetes sp.</u>

^aCommon and scientific names provided by Robins et. al. (1980), Leary (1967), Hobbs (1972) and Williams (1965).

Table 2. Total length (TL, nearest mm), standard length (SL, nearest mm) and weight (W, nearest g) of tarpon captured at the isolated roadside ditch and 21 and 28 October and 7 November 1983.^a

TL	SL	W	TL	SL	W	TL	SL	W
236	183		189	145	50	195	149	60
251	199	135	193	144	45	199	154	60
229	179	100	189	146	45	205	159	65
235	181	105	209	158	55	212	158	65
239	180	90	202	155	55	192	143	45
250	191	115	212	159	60	213	162	75
253	192	110	196	148	50	219	163	70
232	179	95	204	153	60	224	173	85
229	175	80	203	152	55	219	168	95
243	185	100	209	163	60	214	165	70
258	199	125	210	159	65	201	154	60
245	189	105	215	165	65	184	138	45
235	183	100	181	135	35	210	159	65
245	187	105	216	162	70	226	170	80
237	180	95	207	157	60	240	182	110
240	183	100	213	162	65	230	174	95
280	212	170	191	142	40	232	177	100
252	193	120	190	145	40	216	166	80
231	178	100	221	165	75	182	140	40
247	190	125	217	167	75	198	152	
304	234	240	163	128	30	205	155	65
237	184	95	202	156	65	140	105	15
240	185	110	212	160	60	220	166	75
240	183	100	226	171	75	203	154	65
256	194	130	224	173	90	220	166	80
244	190	110	217	165	70	191	142	50
245	188	125	220	176	100	209	160	70
235	179	100	213	162	70	227	174	90
263	202	145	219	169	85	244	184	110
213	160	70	217	166	65	210	157	60
257	196	125	221	167	75	185	141	50
250	194		222	170	80	224	170	80
230	174	90	204	156	60	210	158	60
242	189	110	221	166	75	264	200	145
239	185	90	219	167	85	246	190	115
245	188	110	221	171	85	209	155	115
237	180	95	217	165	75	227	170	90
239	186	100	227	173	80	136	102	15
246	186	115	225	173	85	202		58
238	184	95	215	163	75	241		119
219	170	70	215	161	70	243		216
209	161	60	201	154	60	220		75
221	170	80	206	155	70	225		96
212	161	60	219	167	70	219		83
221	169	75	216	164	70	198		57
198	147	50	220	165	85	210		64
181	135	40	211	159	55	252		121
227	175	85	212	165	75	221		83
202	156	55	212	162	80	204		70
225	169	80	220	170	85	211		76
220	173	70	211	160	70	219		88
219	165	70	200	151	60	218		98
192	147	50	224	170		229		90

^aTotal number measured does not equal total released because not all captured tarpon were measured.

Table 3. Weight-length and TL-SL relationships of 159 tarpon caught in a roadside ditch during October-November 1983.

<u>Relationship</u>	<u>95% confidence interval for b</u>
$\log W = -6.165 + 3.440 \log TL$	(3.355 - 3.525)
$\log W = -5.373 + 3.264 \log SL$	(3.193 - 3.335)
$TL = 10.581 + 1.248 SL$	(1.235 - 1.261)

Figure 1. Capture and release sites of tarpon removed from a roadside ditch in the Matagorda Bay system during October-November 1983.

