

JOB REPORT

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Project No. M-4-R-3

Date: February 15, 1962

Project Name: General Ecological Survey of the Matagorda Bay Area

Period Covered: September 1, 1960 to October 1, 1961.* Job No. A-2

Composition of Fish Species in Area M-4 According to Specific Sampling.

Abstract: A total of 37,920 fish consisting of 71 species were taken by trawl during the project. The main part (89 per cent) of the total catch was composed of species. These were, in descending order: golden croaker, common anchovy, star drum, eight fingered threadfin, sand trout, spot, seacatfish, and gafftopsail catfish. Four new species of fish were taken during the project year making a total of 104 species of fish known to inhabit the Matagorda Bay area. Commercial landings from the Matagorda Bay area were obtained and analyzed. No signs of over-harvest were found.

Objectives: To prepare a checklist of species of fish in Area M-4 and to show seasonal and relative abundance according to sampling.

Procedure: Stations previously established (Project M-4-R-1, Job No. D-2) were sampled monthly by trawl. During the over all project, changes in trawl boards and trawls were made that accordingly changed the efficiency of the gear. A liner of one and one quarter inch stretch mesh was included in the sack of the trawl when it became apparent that the one and three quarter inch stretch mesh of the trawl was too large. Since the number of stations established were too many to sample with any regularity they were reduced in number.

The trawl data included in this report includes and is a completion report on the work accomplished July, 1958 to September, 1960. This report therefore includes the program originally initiated by Donald S. Day and continued after his departure.

Findings: The following four species are additions to the previously reported checklist of D.S. Day in Projects M-4-R-1, Job A-2, and M-4-R-2, Job A-2.

Lutjanus griseus (Linnaeus). Gray Snapper. One four-inch specimen was taken by seine, September, 1960 (29°C, 25 ppt), at Trout Bayou, Matagorda Bay Peninsula.

Megalops atlantica Valenciennes. Tarpon. One specimen was collected by trammel net, October, 1960 in Tres Palacios Bay.

* Supplement to Project Reports, 1960-1961.

Though often observed in the area these two specimens were the only ones collected.

Lagocephalus laevis (Linnaeus). Smooth Swellfish. One sixteen-inch specimen was taken November, 1960 in the Tres Palacios channel.

Mycteroperca bonaci (Poey). Black Grouper. One eight-inch specimen caught by hook and line in Carancahua Bay December, 1960.

The species included in the Table of Relative Abundance are listed in decreasing order of abundance. The number appearing after each species is the total number of that species taken by trawl over a two year period.

TABLE OF RELATIVE ABUNDANCE

<u>Microgobius undulatus</u>	13,980	<u>Caranx hippos</u>	19
<u>Anchoa mitchilli</u>	7,186	<u>Hemicaranx amblyrhynchus</u>	16
<u>Stellifer lanceolatus</u>	4,808	<u>Peprilus paru</u>	16
<u>Polydactylus octonemus</u>	2,693	<u>Fundulus similis</u>	13
<u>Cynoscion arenarius</u>	2,633	<u>Dorosoma cepedianum</u>	12
<u>Leiostomus xanthurus</u>	1,566	<u>Nautopaedium porosissimum</u>	12
<u>Bagre marina</u>	1,006	<u>Achirus lineatus</u>	12
<u>Galeichthys felis</u>	954	<u>Oligoplites saurus</u>	10
<u>Bairdella chrysura</u>	633	<u>Selene vomer</u>	8
<u>Lagodon rhomboides</u>	256	<u>Symphurus plagiusa</u>	8
<u>Spheroides marmoratus</u>	232	<u>Opisthonema oglinum</u>	7
<u>Etropus crossotus</u>	156	<u>Mugil curema</u>	6
<u>Trichurus lepturus</u>	152	<u>Archosargus probatocephalus</u>	4
<u>Orthopristes chrysopterus</u>	138	<u>Pomolobus aestivalis</u>	4
<u>Chloroscombrus chrysurus</u>	131	<u>Prionodes pomospilus</u>	4
<u>Prionotus tribulus</u>	128	<u>Cyprinus carpio</u>	3
<u>Mugil cephalus</u>	122	<u>Gobiosoma bosci</u>	3
<u>Menticirrhus americanus</u>	111	<u>Syngnathus louisianae</u>	3
<u>Citharichthys spilopterus</u>	105	<u>Trachonotus carolinus</u>	3
<u>Vomer setapinnis</u>	102	<u>Chasmodes bosquianus</u>	2
<u>Paralichthys lethostigma</u>	94	<u>Cyprinodon variegatus</u>	2
<u>Poronotus tricanthus</u>	82	<u>Gobiosox strumosus</u>	2
<u>Synodus foetens</u>	68	<u>Gobiosoma robustum</u>	2
<u>Cynoscion nebulosus</u>	48	<u>Ogilbia sp. ventralis</u>	2
<u>Ancyclopsetta quadrocillata</u>	44	<u>Opsanus beta</u>	2
<u>Brevoortia patronus</u>	41	<u>Aprionodon isodon</u>	1
<u>Eucinostomus argenteus</u>	41	<u>Gobius hastatus</u>	1
<u>Signalosa petenensis</u>	34	<u>Urophycis floridanus</u>	1
<u>Trincetes maculatus</u>	33	<u>Anchoa hepsetus</u>	1
<u>Menidia beryllina</u>	33	<u>Caranx chrysos</u>	1
<u>Chilomycterus schoepfi</u>	28	<u>Hippocampus hudsonius</u>	1
<u>Dasyatis sabina</u>	26	<u>Hypsoblennius ionthas</u>	1
<u>Chaetodipterus faber</u>	25	<u>Larimus fasciatus</u>	1
<u>Astroscopus y-graecum</u>	23	<u>Ophichthes gomesii</u>	1
<u>Syngnathus scovelli</u>	22	<u>Rhinoptera quadriloba</u>	1
		<u>Scomberomorus maculatus</u>	1

Seasonal abundance of the ten most abundant species is shown in Table 1 and includes 94.5 per cent of the total catch during the two years of trawl sampling. Table 1 is based on the number of specimens taken per unit effort. One unit effort represents five minutes trawling with a ten foot wide trawl covering an approximate distance of fifteen hundred feet. It must be realized that due to the size mesh small specimens were not taken and due to the speed swift specimens were not taken. It must be further realized that due to the depth of the stations (all five feet or more) movements from the shallow shoreline to deeper waters could falsely indicate an increase in abundance. All growth estimates compiled from the work were in general agreement with earlier work done by W. C. Renfro in Area M-2, Project M-2-R-1, Job No. 2, Marine Fisheries Division Report, 1958-59.

The study of the adult commercial and sports fish populations of this area is so recent that no definite trends have become apparent. The net sampling in conjunction with the fish tagging study (Job No. A-3) has thus far shown all species relative stable. Commercial landings in Matagorda Bay and the Matagorda Bay area were researched back to 1948. Trends shown in those landings are a constant increase in speckled trout landings, extreme fluctuations in black drum landings, and an inverse correlation of redfish landings to the flow of the Lavaca-Navidad watershed.

The importance of the success of the juvenile populations of commercial and sports fish caused more time to be spend defining areas utilized by the 0 year class juveniles. The areas shown in the following Figures 1 through 4 demonstrate the areas thus far defined. The most productive area of all areas sampled was the sand shelf and the guts or along the Matagorda Peninsula.

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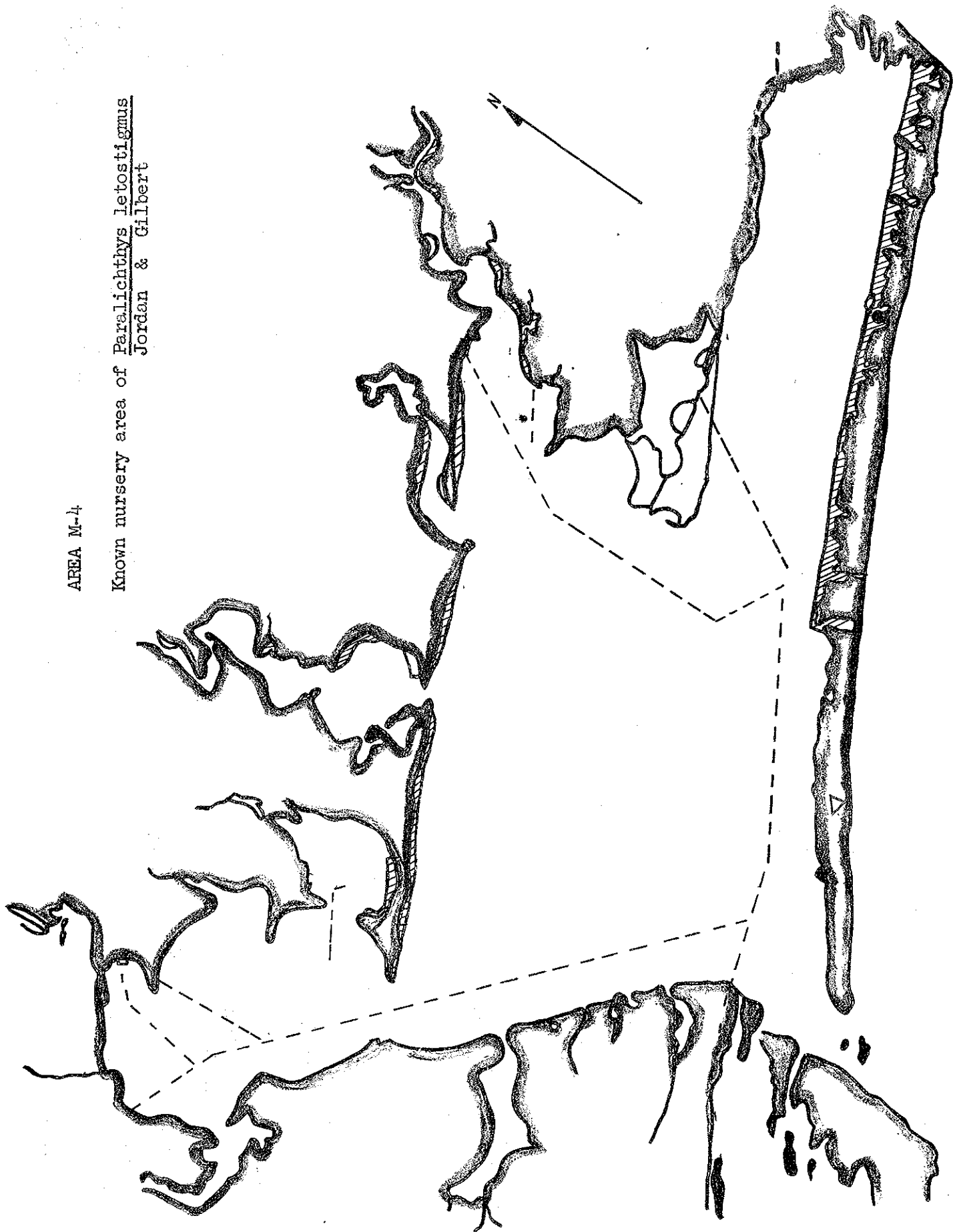
Approved by: Terrance R. Leary
Coordinator

Table 1
Seasonal Abundance according to Unit Effort

Month	1	2	3	4	5	6	7	8	9	10	11	12
Species												
<u>Micropogon undulatus</u>	10.8	7.9	8.5	86.6	93.5	74.5	93.3	17.4	7.6	0.7	2.3	1.3
<u>Anchoa mitchilli</u>	23.9	17.5	13.8	16.2	6.8	9.8	9.4	1.5	14.7	30.8	3.7	27.4
<u>Stellifer lanceolatus</u>	0.0	0.0	0.0	0.5	0.6	6.7	49.1	5.5	0.2	1.6	0.4	0.1
<u>Polydactylus octonemus</u>	0.0	0.0	0.0	0.0	2.1	22.7	67.2	9.8	3.1	0.4	0.0	0.0
<u>Cynoscion arenarius</u>	0.1	0.1	0.5	0.8	2.2	21.3	16.2	4.5	2.3	6.3	4.1	1.1
<u>Leiostomus xanthurus</u>	0.1	1.4	1.3	3.5	3.7	5.6	7.0	2.8	6.3	1.8	2.0	8.5
<u>Barge marina</u>	0.0	0.0	0.0	0.2	0.4	1.4	7.6	6.7	2.5	1.0	0.2	0.0
<u>Galeichthys felis</u>	0.0	0.0	0.1	2.7	1.9	5.0	6.8	2.3	1.4	1.4	0.3	0.1
<u>Bairdella chrysura</u>	0.2	0.0	0.2	1.0	0.7	1.5	4.4	1.3	2.2	0.4	0.7	2.5
<u>Lagodon rhomboides</u>	0.1	0.3	0.2	1.2	0.1	0.0	0.4	0.1	0.8	0.7	1.9	1.5

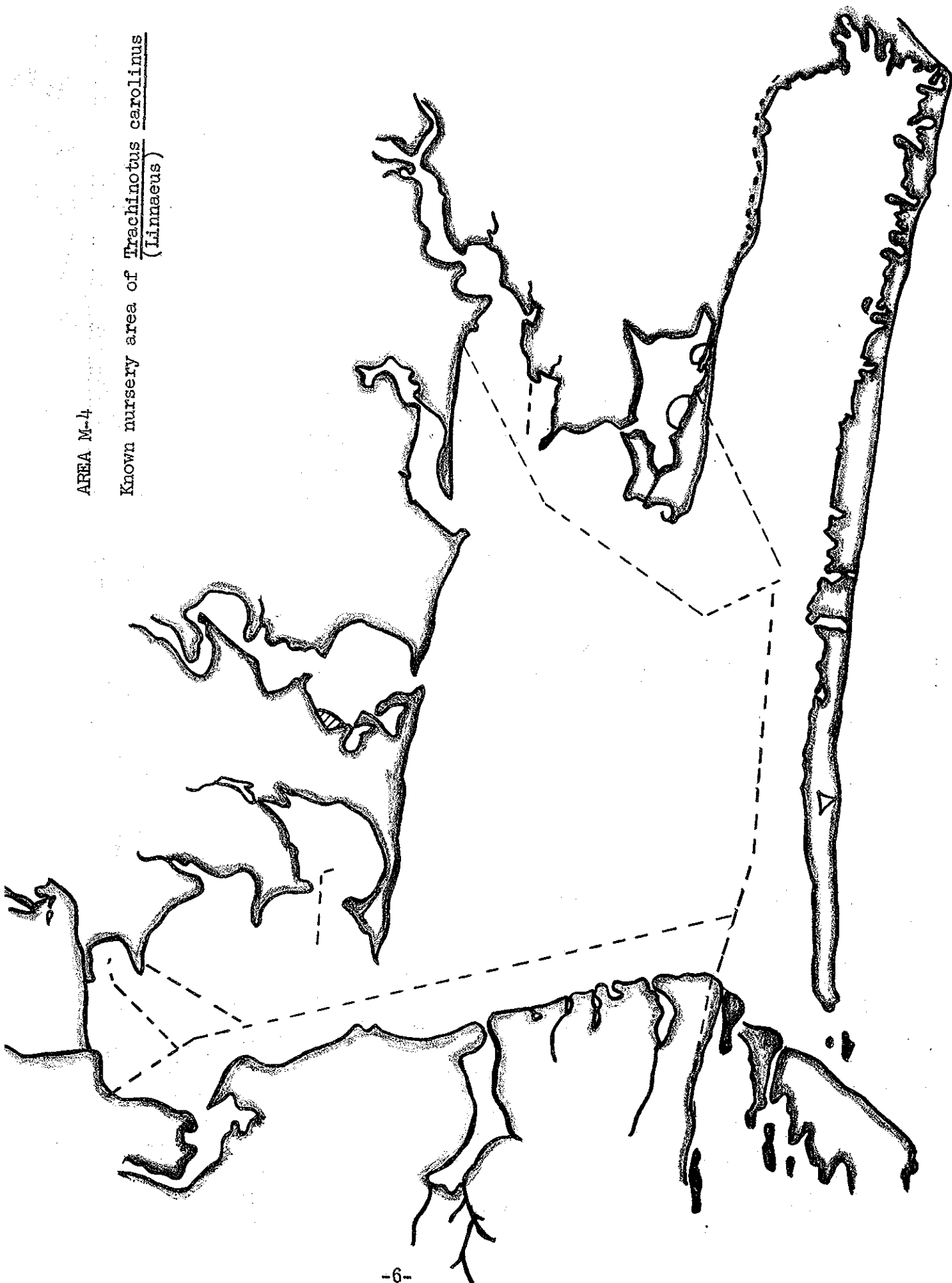
AREA M-4

Known nursery area of Paralichthys letostigmus
Jordan & Gilbert



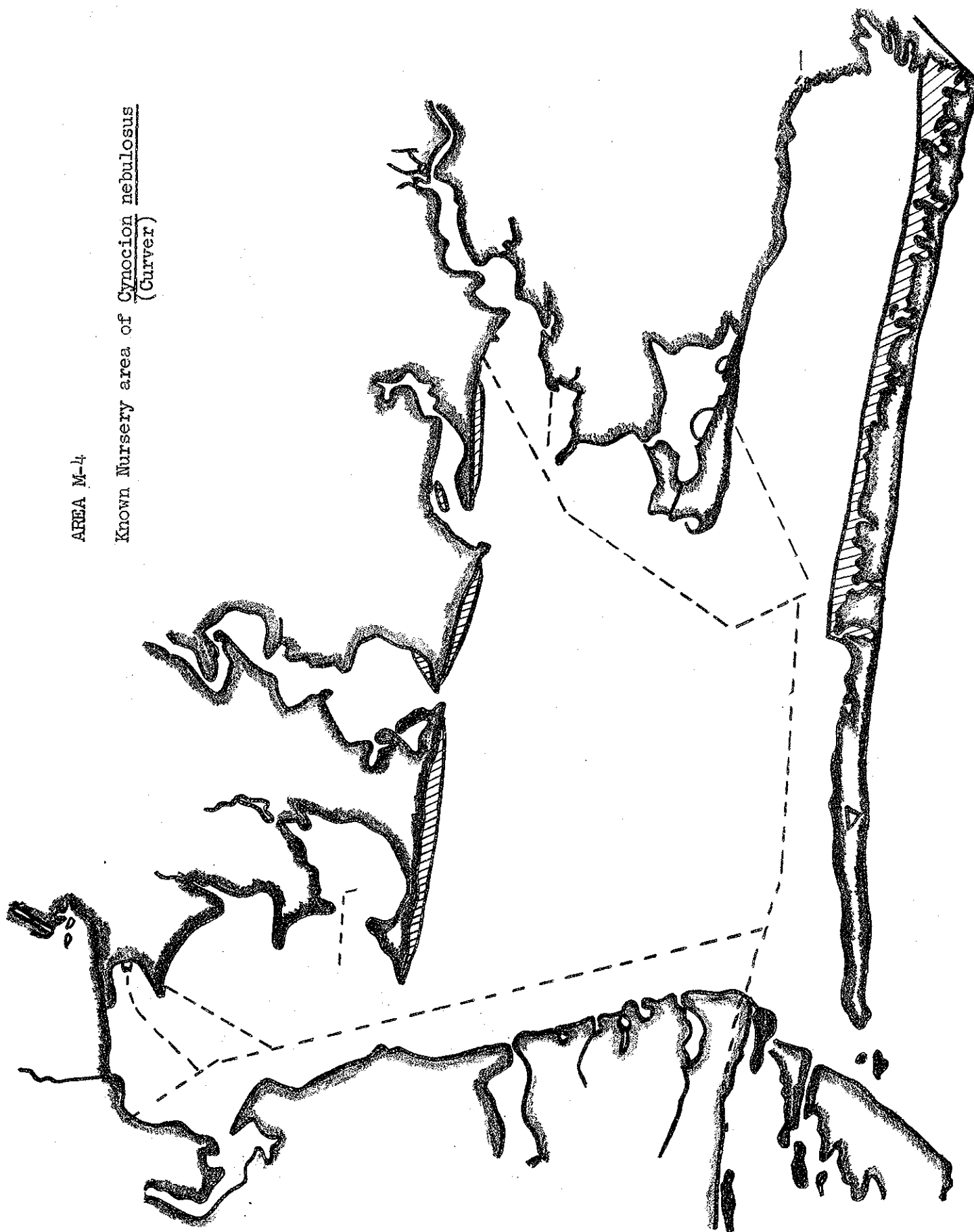
AREA M-4

Known nursery area of Trachinotus carolinus
(Linnaeus)



AREA M-4

Known Nursery area of Cynocion nebulosus
(Curver)



AREA M-4

Known nursery area of Sciaenops ocellata
(Linnaeus)

