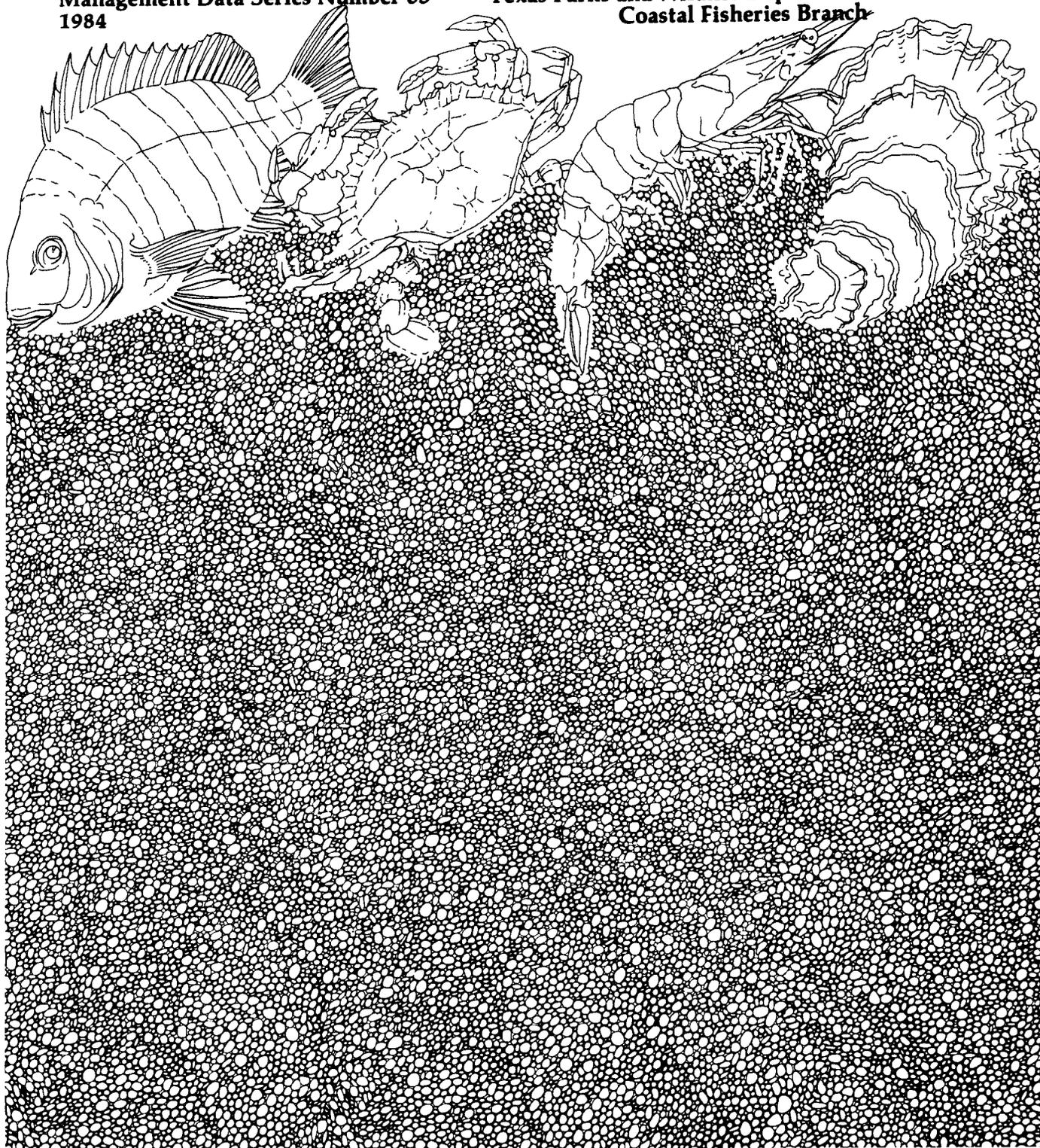


RETURNS OF TAGGED RED DRUM STOCKED INTO MATAGORDA BAY, TEXAS

by Gary C. Matlock, Bruce T. Hysmith, and Robert L. Colura

Management Data Series Number 63
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ABSTRACT

The feasibility of stocking red drum (Sciaenops ocellatus) into Texas bays to enhance native populations was examined by stocking 5942 tagged fish (102-203 mm, 4.0-8.0 inches) into Matagorda Bay in April 1976. Ten fish were reported recaptured during the following year, all of which were near the riverine end of the bay system. These recaptures suggest that stocking is a useful technique for enhancing red drum populations.

INTRODUCTION

Red drum, *Sciaenops ocellatus*, culture capabilities (Moore and Elam 1970, Elam 1971, Colura and Hysmith 1974, Colura et al. 1976, Arnold et al. 1977, Roberts et al. 1978, Hysmith et al. 1982) coupled with declining populations in Texas bays (Matlock 1982) has focused attention on bay stocking to enhance red drum populations. In 1975, the Texas Parks and Wildlife Department (TPWD) initiated a preliminary study to assess red drum releases into Texas bays. The objectives of this study were to determine if stocked fingerlings would survive and remain in the stocked area.

MATERIALS AND METHODS

Red drum fry (2 days old) were obtained from the National Marine Fisheries Service, Port Aransas, Texas, and reared for about 211 days at the TPWD Marine Fisheries Research Station, Palacios, by previously described procedures (Colura et al. 1976 and Hysmith et al. 1982). At harvest, individually numbered monel jaw tags were attached to opercula of 5942 fingerlings (102-203 mm total length; 152 mm mean total length). Tagged fish were released into Matagorda Bay at Well's Point (Fig. 1) on 27-28 April 1976. Fishermen were requested to report recaptured tagged fish through: TPWD news releases; posters in fish houses, marinas and tackle stores; and fishermen interviews (Osburn et al. 1982). Recaptures were plotted on a NOAA Nautical Chart for Matagorda Bay, and the shortest aquatic distance from the release site was measured to the nearest km.

RESULTS AND DISCUSSION

Ten of 5942 tagged red drum (0.2%) were recaptured between 23 May 1976 and 5 February 1977 (Table 1). Recapture suggests stocking is a useful population enhancement technique for red drum. However, success of a planned stocking program would require releasing more fish than were stocked during this study. Optimum stocking rates could not be identified from this study, partly because the reporting rate of recapture was unknown, but was probably very small. Reduced reporting may have been caused by the minimum size limit (356 mm) for red drum (Matlock 1980) and tissue growth over the tag as fish grew (Simmons and Breuer 1982) which would reduce the identification of tagged fish.

Stocked fish apparently remained in the bay system where stocked, and all recaptures were in areas near the riverine end of the system (Fig. 1). Additional research is needed to evaluate planned stockings to determine impacts on the red drum fishery. Since the number of reported recaptures was low (0.2%), and no adjustments in recoveries of tagged fish were made for fishing effort distribution, very little can be concluded regarding migration of fish within the bay.

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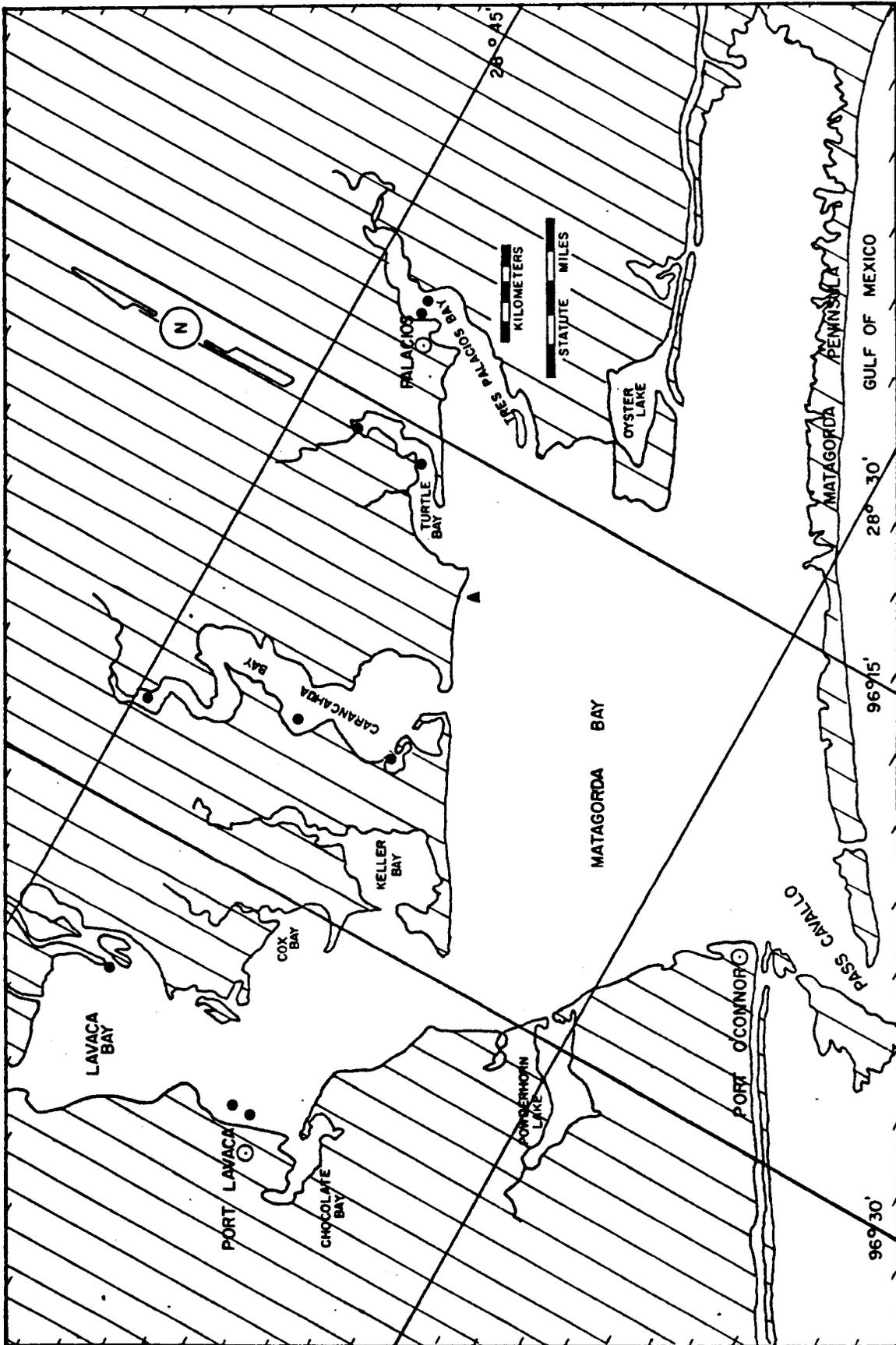
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Table 1. Recapture information for red drum (102-203 mm) tagged with monel jaw tags and released 28 April 1976 at Well's Point, Matagorda Bay. (ND indicates no data.)

Tag number	Recapture date	Recapture site	Days free	Minimum distance traveled (km)
PWD-2254	05-11-76	Palacios	13	13
ND	05-11-76	Palacios	13	13
ND	05-23-76	Lavaca Causeway	25	56
ND	08-02-76	Lavaca River	99	64
PWD-1240	10-01-76	Turtle Bayou	157	12
PWD-5022	10-22-76	Turtle Bay	178	11
ND	11-09-76	Salt Lake	195	9
PWD-404	12-09-76	Carancahua Bay	226	15
PWD-2696	01-22-77	Lavaca Causeway	270	56
PWD-4357	02-05-77	Carancahua Creek	284	32

Figure 1. Movement of recaptured tagged red drum stocked into Matagorda Bay, 28 April 1976. Stocking site is indicated by a triangle and recapture sites are indicated by solid circles.



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