

Reprinted from THE PROCEEDINGS OF THE LOUISIANA ACADEMY OF SCIENCES  
Vol. XLII, December, 1979, pp. 24-38

SEASONAL OCCURRENCE OF FISHES COLLECTED FROM  
BEACH SEINING, SOUTHWEST LOUISIANA

W. Guthrie Perry and Brandon J. Carter

Louisiana Department of Wildlife and Fisheries

Grand Chenier, Louisiana 70643

Presented at the

53rd Annual Meeting of the  
Louisiana Academy of Sciences

February 2-3, 1979

Ruston, Louisiana

Reprinted from THE PROCEEDINGS OF THE LOUISIANA ACADEMY OF SCIENCES  
Vol. XLII, December, 1979, pp. 24-38

**SEASONAL OCCURRENCE OF FISHES COLLECTED FROM  
BEACH SEINING, SOUTHWEST LOUISIANA**

# SEASONAL OCCURRENCE OF FISHES COLLECTED FROM BEACH SEINING, SOUTHWEST LOUISIANA

W. Guthrie Perry and Brandon J. Carter

Louisiana Department of Wildlife and Fisheries  
Grand Chenier, Louisiana 70643

Presented at the  
53rd Annual Meeting of the  
Louisiana Academy of Sciences  
February 2-3, 1979  
Ruston, Louisiana

*ABSTRACT. Beach seine samples were collected twice a month at stations in southwest Louisiana to obtain a basic assessment of fish fauna inhabiting the area. A total of 22,911 specimens were taken over the 6.5 year study. Atlantic threadfin, Florida pompano, bay anchovy and striped mullet comprised 50% of the total catch. Minimum-maximum salinity and temperature and size at capture data were tabulated for each and is presented along with monthly catch per unit effort for each station.*

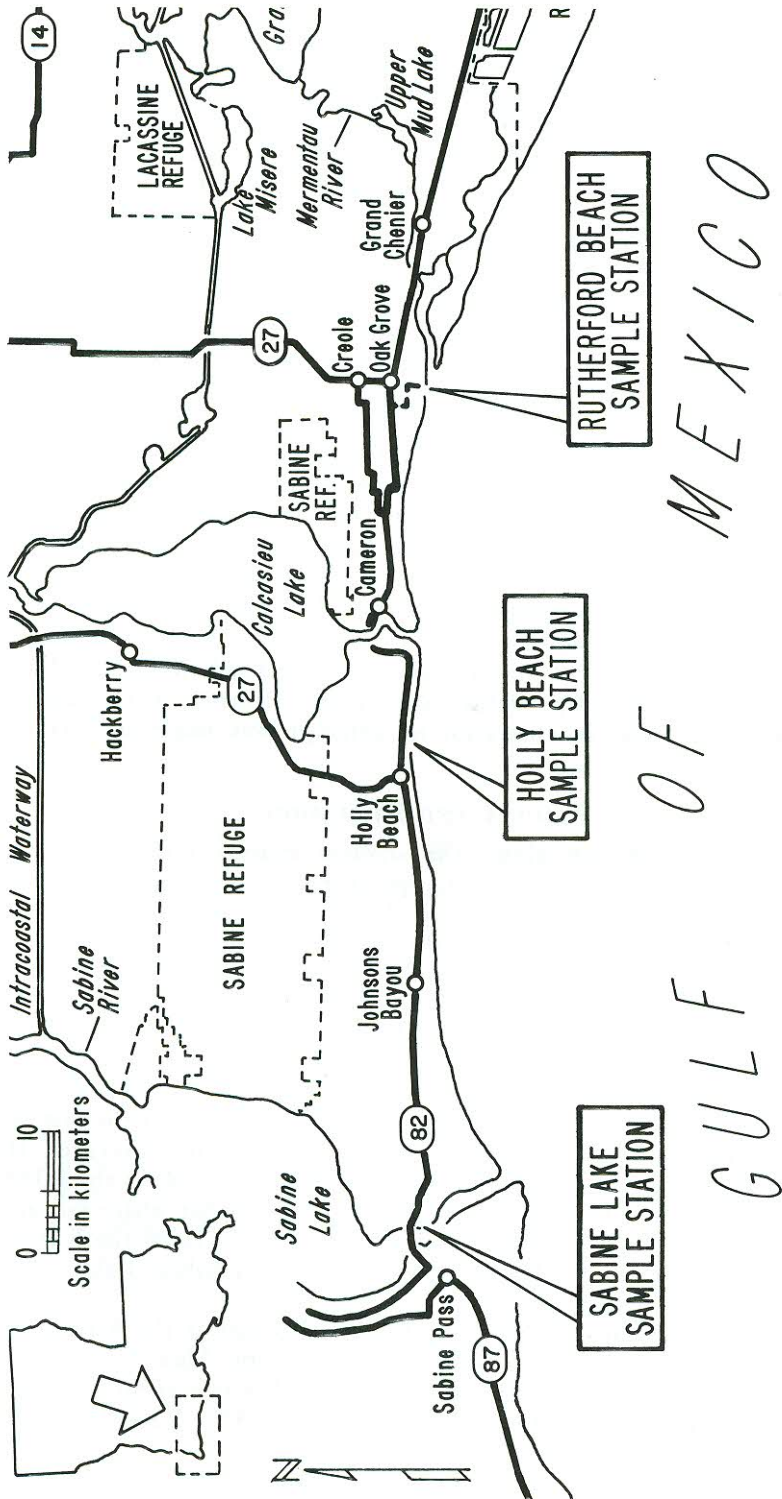
## INTRODUCTION

Fishes of the various bays along the north Gulf of Mexico were documented in the classic works of Gunter (1, 2 and 3) and Suttkus et al. (4). Around the time of these first studies, Norden (5) published a study of the seasonal distribution of fishes of Vermilion Bay, Louisiana. Tarbox (6) followed with a thesis on seasonal occurrence and distribution of fishes at Marsh Island, Louisiana. A comprehensive study of the physical and biological characteristics of estuarine areas of the Louisiana coast by Perret et al. (7) yielded valuable salinity, temperature and occurrence information for estuarine fishes. Still, this did not include the sandy beaches of southwest Louisiana.

For a 6.5 year period beginning in June 1967, beach seine samples were taken at stations in southwest Louisiana to obtain a basic assessment of fish fauna inhabiting the area. A primary objective was to inventory the fishes and determine their seasonal occurrence. A second objective was to document the associated hydrological conditions.

## MATERIAL AND METHODS

The unique coastline of Louisiana consists of marsh, shallow bays and mudflats. A thin stretch of sandy beach, intermixed with mud, borders the coast from near Marsh Island to the Mermentau River; from this point west, the beaches generally broaden and are composed of fine sands, with broken shell debris constituting a large portion of beach material. Sample stations for this study were located along this western stretch (Fig. 1).



GULF OF MEXICO

FIG. 1. Location of stations sampled along the beaches of Southwest Louisiana, 1967-1974.

The first station was at Rutherford Beach, approximately 0.5 km west of the old outlet of the Mermentau River. Station 2 was 8 km west of the Calcasieu River outlet at Holly Beach, and station 3 was on the east side of Sabine Lake just south of Highway 82. This was the only station with a muddy bottom. Approximately 15 cm - 0.5 m of muddy ooze had been deposited over a firmer bottom by the Sabine River.

Data for this report were collected from June 1967 through January 1974. Samples were taken every 2-wks at the established stations. A few months of the 6.5-year study were represented by only one sample trip due to a shortage of personnel.

The bag seine used for collecting was 12-m long, 1.8 m deep and constructed of 0.6 cm square mesh, king style nylon. A 1.8 m by 1.8 m bag was positioned in the center of the net.

At each station, the seine was pulled parallel to the beach for 25 m. Fishes were identified in the field and measurements of the first 15 of each species were taken in millimeters. The remainder of the catch were counted. Total lengths were recorded for fishes and shrimp and carapace width for crabs. Only one seine haul was made at each station. Water temperature and salinity were taken with a Beckman RS5-3 salinometer at each station.

The pH measurements were taken with a Hach Model 17N test kit. However, since pH probably exerts little influence on the seasonal movements of fishes in this area, no attempt was made to correlate the two.

#### RESULTS AND DISCUSSION

Water temperature along the shallow coastal waters fluctuate rather closely with atmospheric temperatures. A lag usually exists in the change of water temperatures behind changing air temperatures. The stations which demonstrated this trend had similar monthly temperature ranges, with the Sabine Lake station usually a little warmer (Fig. 2). This may be because the station was always the last sampled each day and up to 5 hrs often elapsed from the time Rutherford Beach samples were taken.

Figure 2 illustrates that over the 6.5 year study, November through March were characterized by mean sample temperatures on the low end of the range below 20°C. August water temperatures averaged the highest: 29.9°C at the Rutherford Beach station and 31°C at the others.

The Holly Beach station generally exhibited higher water salinities than the others (Fig. 3). This was due to the proximity of the Rutherford Beach station to the Mermentau River and the Sabine Lake station to Sabine River.

Salinities recorded at the time of fish collection at the Rutherford Beach station ranged from a minimum of 0.6 ppt, May 9, 1969 to a high of 34.8 ppt on Nov. 22, 1967. Holly Beach water salinities ranged from 2.7, Dec. 27, 1971 to 33.8 ppt, July 22, 1971. Recorded salini-

