

A NOTE ON SIZE DIFFERENCES OF CHANNEL CATFISH,
ICTALURUS PUNCTATUS, COLLECTED FROM
SOUTHWEST AND SOUTHEAST LOUISIANA

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ABSTRACT—Channel catfish, *Ictalurus punctatus*, length data collected simultaneously in southwest and southeast Louisiana were compared. Between 7 February and 4 April 1984, 6,507 catfish were captured in 862 net days of sampling. The southwest Louisiana data collected from the marshes on and adjacent to the Rockefeller Wildlife Refuge resulted in 2,243 fish of which 32.3% were greater than the legal size restriction of 28 cm (11 in.). Samples from southeast Louisiana, Salvador Wildlife Management Area, yielded 4,264 fish, 25.9% were greater than 28 cm (11 in.). Thus, the gear characterized these marshes as having a difference in the distribution of size classes of channel catfish ($P < 0.01$).

Key words: Channel catfish, *Ictalurus punctatus*, regional size difference.

INTRODUCTION

Historically, commercial fishing has been a major contributor to the culture and economy of many areas of south Louisiana. Channel catfish, *Ictalurus punctatus*, and blue catfish, *I. furcatus*, are considered the most important finfish species. In the late 1960's Louisiana's waters provided over 10% of the wild catfish harvest in the United States (Lindall et al. 1972). The Louisiana harvest, averaging 2.3 million kilograms (5 million lbs) annually, was shipped primarily to the New Orleans market. Coastal areas produced 86% of the catch. On a hydrologic basis, the southeast Louisiana unit containing Lake des Allemands, Lake Salvador, and Little Lake contributed 42% and ranked first. In southwest Louisiana, the unit consisting of Grand Lake and White Lake ranked fourth accounting for 5% of the total production.

This trend has not changed. The Lake des Allemands complex still ranks first, but the Grand Lake-White Lake system is experiencing increased fishing pressure. Using gear such as trot lines, hoop nets, gill webbing, and slat traps commercial fishermen continue to harvest approximately 3,030 metric tons (3,000 tons) annually.

For many years, size limit regulations for channel catfish have been controversial issues. Markets in the New Orleans area for small fish have resulted in continued requests to lower limits. In 1956 Davis and Posey

(1958) initiated a study to determine if a 35 cm (14 in.) total length limit was too restrictive, necessitating commercial fishermen to return much of their harvest to the water.

In 1967 by legislative act the total length for commercially-caught channel catfish was lowered to 33 cm (13 in.). This did not satisfy fishermen in the Lake des Allemands system, who were catching vast numbers of small fish preferred by area markets. Fishermen contended that catfish of their area were stunted due to overcrowding. This was supported by Schafer et al. (1965) who believed that overcrowding resulted from excessive spawning due to presence of abandoned cans and slat traps which provided nesting sites. Lantz (1970) suggested catfish in coastal Louisiana are smaller at sexual maturity than more inland channel catfish populations. Perry and Carver (1972) conducted a more detailed study of length at maturity and this resulted in an 28 cm (11 in.) size restriction.

After a decade, commercial fishermen in the New Orleans area have again requested lower size limits. A restraining order against the Department of Wildlife and Fisheries by St. Charles Parish fishermen in 1981 resulted in size limits being removed. From 1982 through 1984 senate resolutions kept size limits off channel catfish. In January 1985, the Department of Wildlife and Fisheries was given authority to control size limits and a 28 cm (11 in.) limit was reinstated. In January 1986, another court injunction forced abandonment of size limits for channel catfish.

Research on catfish has been conducted since 1979 at the Salvador Wildlife Management Area (WMA) in southeast Louisiana (Perry, Rogillio, Morrison and Dares 1985; Perry, Rogillio, Morrison and Williams 1985). Studies have involved catfish movement and evaluation of various commercial gear types. An interesting observation resulting from this research was the interchange of channel catfish within the Lake Salvador–Bayou des Allemands–Lake des Allemands complex. Studies involving catfish movement, harvesting gear, and age at maturity have also progressed in the Mermentau Basin of southwest Louisiana since 1965 (Perry 1966, 1978; Perry and Carver 1972, 1977). Seasonal inland movement of channel catfish from the Gulf Coast into the Grand Lake–White Lake–Mermentau River complex has been determined.

The objective of this manuscript is to present a comparison of channel catfish size differences from these two regions, i.e., the Salvador marshes of southeast Louisiana and the southwest Louisiana marshes of the Mermentau Basin.

MATERIALS AND METHODS

Data for this manuscript were obtained in the winter and spring of 1984 when identical gear and bait types were fished at stations in southwest and southeast Louisiana.

Stations in southwest Louisiana were located in the Superior Oil Company Canal system which extends northward from the 34,000 ha (84,000

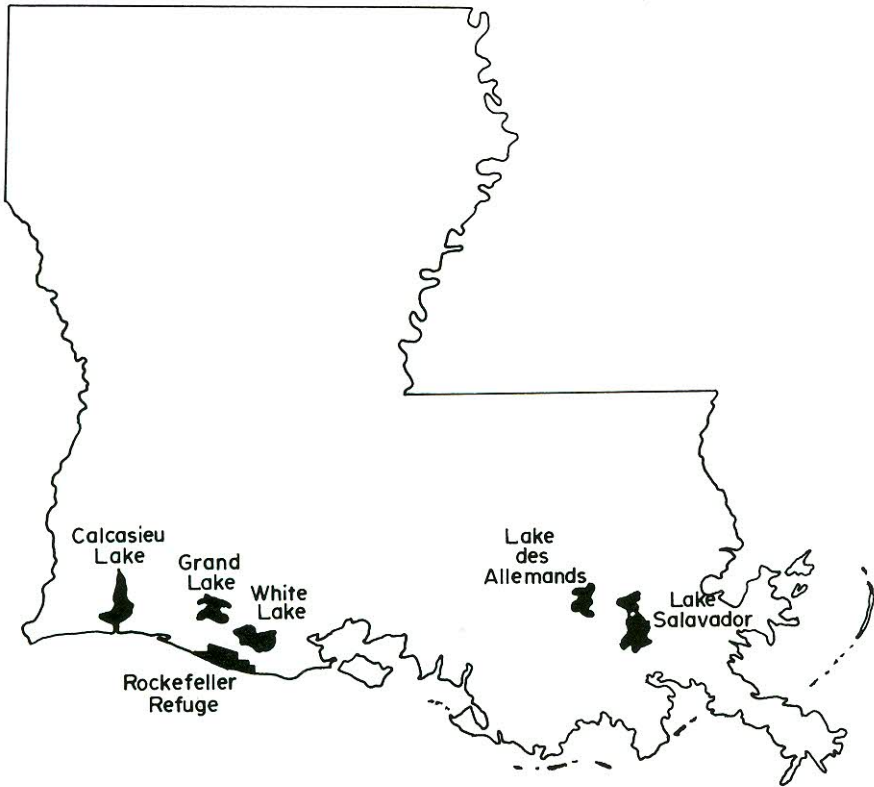


FIGURE 1. Sampling stations for channel catfish size comparisons in southwest Louisiana on and around the Rockefeller Wildlife Refuge and in southeast Louisiana in the marshes around Lake Salvador.

acre) Rockefeller Wildlife Refuge just below Grand Chenier, Louisiana (Fig. 1). Brackish waters of this system extend 26 km (16 mi) into the 12,800 ha (31,600 acre) freshwater Grand Lake and serve as a link between the 9,065 sq km (3,500 sq mi) Mermentau Basin and the Gulf of Mexico. Canals were approximately 15 m (50 ft) wide and 1.8 m (6 ft) deep. Estuarine systems of this zone are somewhat older and more established than the southeast region.

In the southeast region, stations were located on the 12,500 ha (31,000 acre) Salvador WMA which extends along the northwestern shore of Lake Salvador. This area is part of the Lake Cataouatche–Bayou des Allemands–Lake des Allemands complex, a large, inland system of fertile lakes, bays, and bayous. Tidal water movements from the Gulf accompany storms and hurricanes moving inland through Barataria Bay and Lake Salvador. Numerous drainage and oil canals traverse these marshes resulting in the nation's most important commercial catfish waters. It also supports an important sportfish fishery.

Gear used were slat traps and wire cages (of the Florida design). One

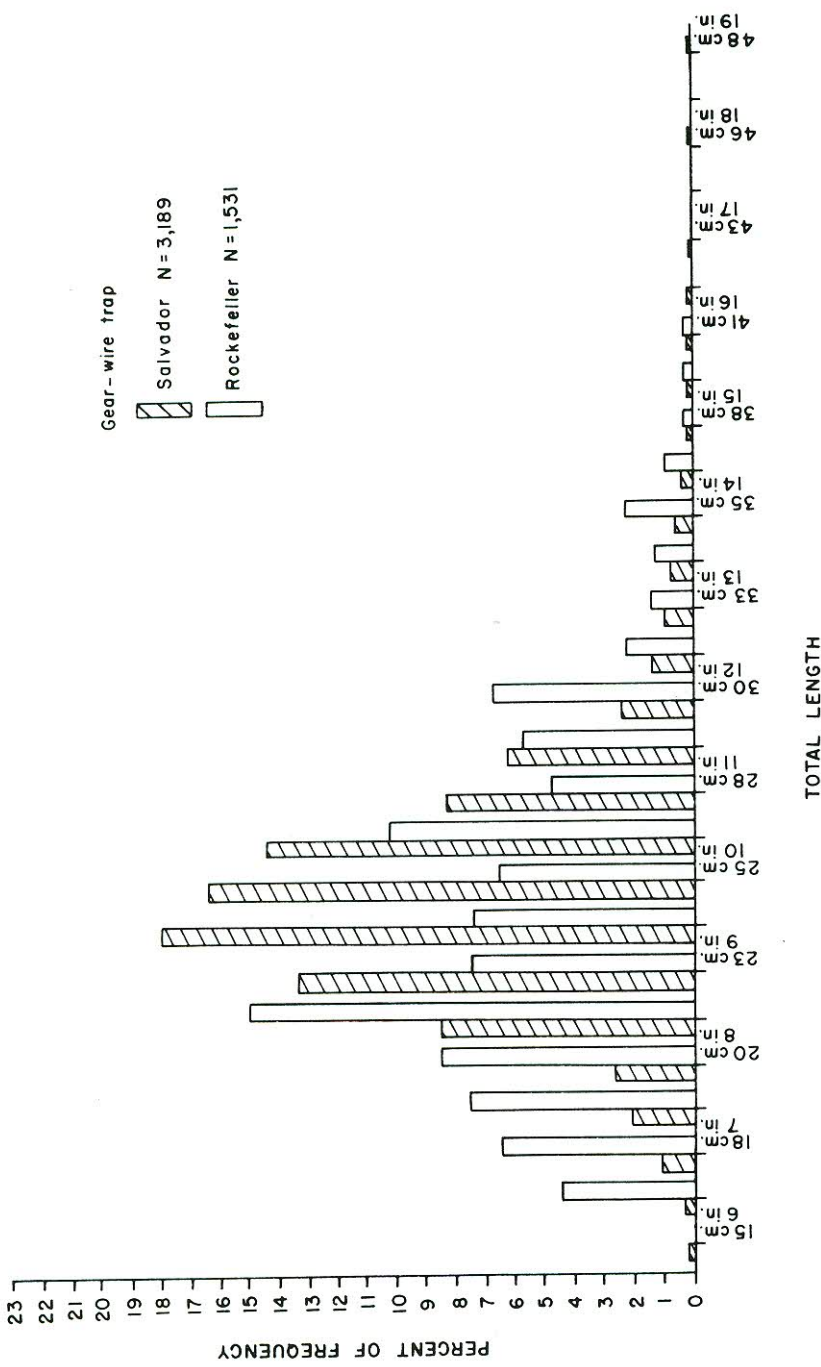


FIGURE 2a. Comparison of total lengths of 2,243 channel catfish collected from southwest Louisiana and 4,264 from southeast Louisiana using wire traps.

