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OBSERVATIONS ON SLAT TRAPS AND WIRE CAGES FOR CAPTURING CATFISH

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ABSTRACT. *The relative efficiency and selectivity of slat traps and wire cages can have substantial impacts on harvest and management of channel catfish,* Ictalurus punctatus, *in the southeast. Slat traps and wire cages fished for a total of 543 trap days yielded 4,771 channel catfish weighing 1,875.7 lb. Wire cages accounted for 77% by number and 74% by weight of captured catfish averaging 5.2 lb/day. Slat traps caught 1.7 lb/day. A large percent (77%) of fish captured in wire cages were less than the legal size restriction of 11 in. total length and 65% of the catfish captured in slat traps were below the size limit. Both gear were highly selective for channel catfish. A total of 40% and 37% of the catfish caught in slat traps were captured using cheese and soybean baits, respectively. Wire cages baited with soybean chips caught 58% of the fish recorded for that gear; cheese and cotton seed cake produced 32% and 10%, respectively.*

Key words: commercial gear, slat traps, wire cages, channel catfish.

INTRODUCTION

Commercially harvested catfish contribute approximately 60% of the $4,000,000 reported annually for Louisiana's freshwater finfish. Channel catfish, *Ictalurus punctatus,* and blue catfish, *I. furcatus,* are considered the most important species followed by flathead catfish, *Pylodictis olivaris.* Management for these species in Louisiana has been attempted by setting total length size limits, regulating gear types, regulating minimum mesh size, and licensing harvest and transport of the fish. Law enforcement is a vital part of the program.

Unfortunately, a limited amount of research has been published concerning various aspects of catfish life histories and effects of fishing gear on these fish in Louisiana which leads to continual controversy. In the past, commercial gear restrictions have been established according to political boundaries and size restrictions have not been imposed or assigned to some species due to legal or political pressure upon the Department resulting from a lack of conclusive data.

The catch of game fish associated with commercial gear has been a source of concern. Sport fishing interests contend gear such as wire cages catch and kill large numbers of game fish. Historically, wire cages have been used to take game fish illegally in Louisiana.

Studies beginning in the late 1950's have gradually improved the Department's understanding of the management of this resource. Commercial size limits were set to allow enough immature fish to escape harvest in order to perpetuate the fishery. Consequently, channel catfish maturity has received the most attention (Davis and Posey 1958, Lantz 1970, Schafer et al. 1965, Perry and Carver 1972) followed by blue catfish (Perry and Carver 1972, 1977) and flathead catfish (Perry and Carver 1977).

Davis and Posey (1959) published the first studies on gear selectivity in Louisiana. Their study, apparently patterned after Starrett and Barnickol's (1955) evaluation of gear used on the Mississippi River was concerned with various mesh sizes of trammel nets, gill nets, hoop nets, wire cages, basket traps, trot lines, and seines. This was followed by studies of specific gear such as cans (Schafer et al. 1965) and slat traps (Posey and Schafer 1964, Perry 1978). All of the studies on slat traps reported catches primarily of catfish with little effect on other species. However, the wire cages tested were single throated and very effective in the capture of sport fish. In 1982, commercial fishing interests asked the Department to consider legalization of wire cages of a unique design developed in Florida. Because of the unique design of the second throat they reported the traps to be highly selective for channel catfish. The Fish Division initiated a study in the winter of 1984, dealing with the effectiveness of different designs of wire cages.

Since 1979, a channel catfish movement study has been conducted in Southeast Louisiana. Collections of fish on the Salvador Wildlife Management Area were made with various gear and information on recaptured fish received from fishermen.

The present paper is an analysis of catch data relative to the efficiency and selectivity of two gear types, slat trap and wire cages of the Florida design, used during the latter portion of the tagging study. Also evaluated were three bait types, i.e., cheese, soybean chips, and cottonseed cake.

METHODS AND MATERIALS

Data for the study were collected from the 31,000 acre Salvador Wildlife Management Area located in St. Charles parish along the northwestern shore of Lake Salvador. The area which is 12 miles southwest of New Orleans, Louisiana is owned by the Louisiana Department of Wildlife and Fisheries and is primarily a fresh marsh type, broken by numerous ponds.

Four sample stations were located on the area: Headquarters site, Upper Baie du Cabanage, Lower Baie du Cabanage, and Gulf Canal. Water depths were similar between stations, ranging from 4 to 6 feet depending upon rainfall and wind. During the study waters were turbid, with less than 2.0 ppt salinity. However, area fishermen report higher salinity water is not uncommon. The management area is popular with sport fishermen and numerous families in this area derive a portion of their income from the commercial harvest of catfish from the surrounding waters of Lake Catouatche, Lake Salvador, Bayou des Allemands and Lac des Allemands. Gear types popular to the area are slat traps, hoop nets, trot lines, and cans.

The two gear types (Fig. 1) evaluated in this study were slat traps and wire cages (of the Florida Design). One of each type was fished simultaneously at each of the four stations. The baits selected for comparison were cheese, cotton seed cake, and soybean chips. Only one bait type placed in a nylon bait bag was used at each station for a two week period.

The slat traps were basically similar to the types popular with area commercial fishermen. Each measured 5 ft in length, 11 in. square, and was