

PRELIMINARY FINDINGS OF CHANNEL CATFISH
TAGGING STUDY ON THE SALVADOR
WILDLIFE MANAGEMENT AREA

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ABSTRACT. From 1979 to 1984 a total of 4,132 channel catfish, *Ictalurus punctatus*, have been captured, tagged and released on the Salvador Wildlife Management Area. A total of 2% have been recaptured by commercial and sport fishermen and personnel of the Louisiana Department of Wildlife and Fisheries. Many of the fish have radiated out from the Wildlife Management Area to such areas as Bayou Lassene north of Lac des Allemands, Harvey Canal, Westwego Canal and Bayou LaFourche. Maximum movement recorded was for a 14 in. fish which had traveled 30 air mi in 60 days from the tagging location. The longest tag retention was 17 months.

Key words: channel catfish, *Ictalurus punctatus*, catfish movement, catfish tagging.

A major portion of Louisiana's fresh water finfish fishery centers on the commercial harvest of channel catfish, *Ictalurus punctatus*. Fishermen using gear such as trot lines, hoop nets, gill webbing and slat traps harvest 3,000 to 5,000 tons annually. These fish have been processed in Louisiana by commercial fishermen who seasonally alternate harvest of crab, shrimp, alligator and freshwater catfish.

These fishermen are now experiencing considerable competition from farm-raised catfish which have uniform size high quality and competitive prices. To assist Louisiana's commercial fishermen, the Louisiana Department of Wildlife and Fisheries is studying life histories of commercially important species and gear used for their capture. The objective of this report is to present preliminary data obtained from one of these studies involving movements of channel catfish in a southeast Louisiana study area.

Since 1979, a total of 4,132 channel catfish were captured, tagged and released on the Salvador Wildlife Management Area (SWMA) to study movement, growth and population dynamics (Fig. 1). Salvador Wildlife Management Area is a 31,000 ac fresh to intermediate marsh (Chabreck et al. 1968) located 12 mi southwest of New Orleans. It is untouched by roads, offers a marsh setting with excellent waterfowl and deer hunting, fur trapping and recreational fishing. With the exception of the Game Management Area (GMA), the entire region is fished extensively by commercial fishermen whose reports of tagged fish have been assembled in this report.

Channel catfish were caught using slat traps from 1979 to 1984 and wire cages of the Florida design were used in 1984 (Perry et al. 1985). Captured fish were measured, tagged, and released. Traps were fished throughout each year until 1983 when fishing efforts shifted to late winter and early spring.

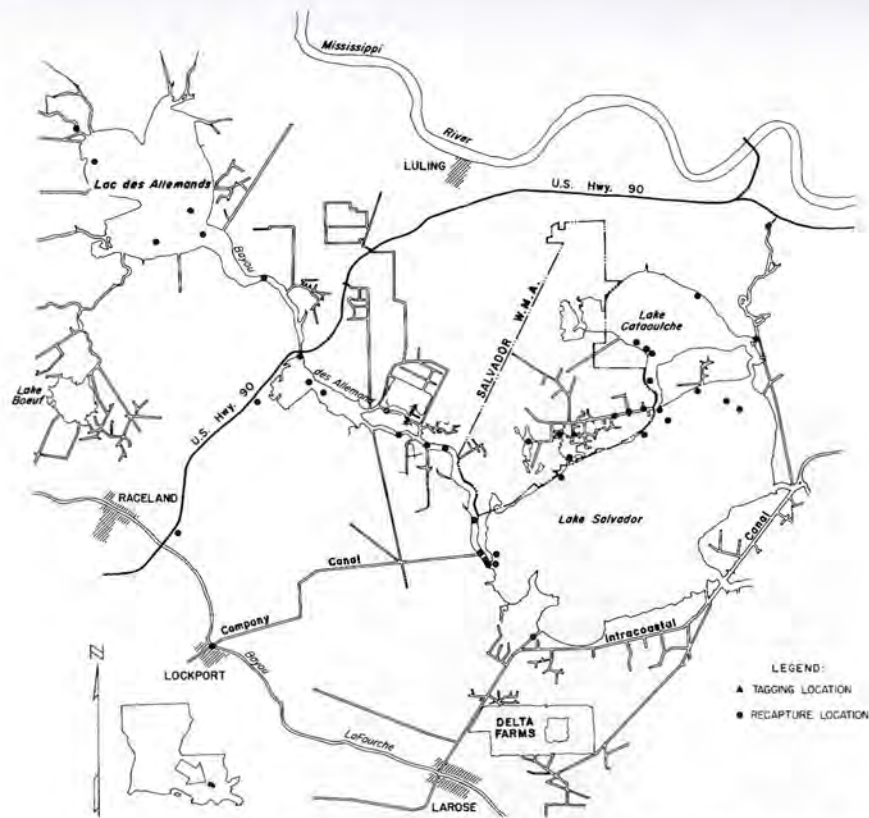


FIGURE 1. Locations of channel catfish recaptured between 1979–1984 within the Salvador Wildlife Management Area.

Floy anchor tags (Model FD-68) were used with 2.2 in. number 20 international orange vinyl tubing. The vinyl tubing contained a legend consisting of a number and "L.W. & F., Grand Chenier, LA." The tags were inserted at an angle on the left side of the fish just below the soft dorsal fin using Floy Mark II SS Long[®] or FDM-68[®] tagging guns with 1 in. needles allowing the tag "T" bar to become locked behind the interneural pterygophores.

Preliminary results illustrate the extremely transitory characteristic of channel catfish (Table 1). Of 4,132 fish tagged, 87 (2.0%) were recaptured by commercial and sport fishermen with the annual percentage returns being: 1979—3%, 1980—4%, 1981—1%, 1982—3%, 1983—3%, and 1984—1.5% respectively. Fish radiated out from the tagging locations (Fig. 1).

Recapture locations suggest a possible movement pattern for channel catfish. Those tagged in fall were repeatedly recaptured near their release

sites while those tagged in late winter and early spring exhibited more pronounced movements. In spring 1982, two fish (12351 and 12379), moved 7 water mi from the SWMA into Lake Salvador near the mouth of Bayou des Allemands in 9 days. At the same time, fish 12353 moved 14.5 water mi east northeast into the Westwego Canal in 16 days, and in spring 1983, fish 12228 migrated 14.2 water mi northwest into the Godchaux Canal in 18 days. Some catfish which were tagged together, were recaptured by a commercial fisherman in the same slat trap in Lake Salvador 9 days after release. They had moved 7 miles. The greatest movement was noted in 1983 when two fish (17153 and 12253) were taken from Bayou Lassene located northwest of Lake des Allemands approximately 30 water mi from their tagging site.

Most tagged fish were recaptured in SWMA and Bayou des Allemands. Of the 87 recaptures, 28% were from SWMA by either sport fishermen or wildlife personnel, 26% were from Bayou des Allemands, 18% were from Lake Salvador, Lake des Allemands accounted for 9%, and 2% were from Lake Catouatche.

This return rate was similar to that reported by others using Floy anchor tags (Armstrong and Blackett 1966, Keller 1971, Latapie 1966, Wilbur and Duchrow 1973). Burger (1981) concluded that separation of materials used in tags was a major concern. Eames and Hino (1983) reported Floy tags had good retention. They emphasized that the proper placement of the "T" bar behind the interneural spines was most important and the tagging guns with the 1 1/16 in. needles were more efficient than the 7/16 in. needles for that purpose.

These factors, along with a "human delay syndrome," probably contributed to the 2.0% tag returns of this study. Several reports were received from fishermen who had tags which they promised to send. Recent involvement of the Louisiana Wildlife and Fisheries Department with commercial fishermen wanting to fish SWMA may have generated a lack of cooperation in this program.

Information on catfish growth was inadequate and not included in this report. As fishermen's reports are seldom in precise units, most accurate growth data will be from Louisiana Wildlife and Fisheries Department personnel in their routine sampling of recaptured fish.

This tagging program is continuing on SWMA, however, plans have been made to extend the collections to year round and to include blue catfish, *I. furcatus*.

In the past, catches decreased drastically after the winter. Problems with blue crabs and a lack of fish, possibly due to increasing salinities, made year round tagging difficult. New plans include increased tagging in this region incorporated with data from other coastal areas. This should increase understanding of the characteristics of channel catfish and enable the Louisiana Department of Wildlife and Fisheries to make decisions based upon research data in the management of this renewable resource.

TABLE 1. Recapture data for channel catfish captured and tagged on the Salvador Wildlife Management Area, 1979-1984.

Tagging date	Tag number	Size T.L. ¹ inches	Recapture date	Movement miles	Days	Location
7-79	09513	9.0	1-80	0.2	181	Gulf Canal/Salvador WMA
7-79	09535	9.0	2-80	1.0	199	Gulf Canal/Salvador WMA
9-79	09648	10.0	3-80	2.8	181	Lake Salvador
9-79	09651	10.0	2-80	1.0	145	Gulf Canal/Salvador WMA
9-79	09656	9.0	Spring 1980	11.0	—	Petit Lac des Allemands
9-79	09685	10.9	2-80	5.0	200	Bayou Couba light
10-79	09721	10.0	3-80	5.8	178	Lake Salvador
10-79	09728	9.0	3-81	1.5	537	Gulf Canal/Salvador WMA
2-80	09754	10.0	3-81	0.0	388	Gulf Canal/Salvador WMA
2-80	09760	9.9	3-81	0.5	389	Gulf Canal/Salvador WMA
2-80	09778	8.9	2-80	2.5	15	Bayou Couba
2-80	09779	10.9	3-80	2.0	42	Gulf Canal/Salvador WMA
2-80	09836	8.9	4-80	7.8	43	Lake Salvador/Bayou des Allemands
3-81	09899	10.1	1-82	3.8	305	Bayou Couba
3-82	12377	11.1	4-82	6.0	29	Bayou des Allemands
3-82	12379	10.0	3-82	7.0	9	Lake Salvador/Bayou des Allemands
3-82	12351	7.9	3-82	7.0	9	Lake Salvador/Bayou des Allemands
3-82	12353	9.0	4-82	14.5	16	Westwego Canal
3-82	12373	12.0	3-82	7.0	9	Bayou des Allemands
3-82	12166	11.0	3-82	7.0	4	Bayou des Allemands
3-82	12184	8.0	3-82	7.0	9	Lake Salvador/Bayou des Allemands
3-83	17242	14.0	7-83	18.0	122	Bayou des Allemands
3-83	12253	10.5	5-83	30.0	71	Bayou Lassene
3-83	12274	11.0	5-83	1.1	67	Baie des Chactas
3-83	17229	14.5	3-84	0.0	366	Bayou Baie du Cabanage
3-83	12228	11.0	3-83	14.2	18	Godchaux Canal
3-83	12229	11.0	8-83	10.0	165	Bayou Segnette
3-83	12254	10.9	7-83	8.7	121	Bayou Gauch
3-83	12272	13.0	5-83	1.4	67	Gulf Canal/Salvador WMA
3-83	12275	10.9	5-83	14.2	73	Bayou des Allemands
3-83	17023	14.0	5-83	3.3	61	Gulf Canal/Salvador WMA
3-83	17045	12.0	4-83	23.0	42	Lac des Allemands
3-83	17047	12.5	4-83	14.0	32	Bayou des Allemands
3-83	17109	10.0	6-83	13.6	79	Bayou des Allemands
3-83	17130	14.0	7-83	7.0	118	Lake Salvador
3-83	17153	13.9	5-83	30.1	61	Bayou Lassene
3-83	17272	10.9	6-83	15.0	84	Bayou des Allemands
3-83	17277	14.0	6-83	30.0	78	Lac des Allemands
3-83	17371	13.0	4-83	4.1	42	Salvador WMA
3-83	17494	14.0	4-83	7.1	28	Lake Salvador
3-83	16562	13.5	5-83	24.0	53	Lac des Allemands
3-83	12305	15.0	4-83	9.0	36	Whiskey Canal
3-83	12324	14.0	4-83	6.0	31	Bayou des Allemands
3-83	12264	12.0	4-83	15.0	35	Heron Canal

TABLE 1. Continued.

Tagging date	Tag number	Size T.L. ¹ inches	Recapture date	Movement miles	Days	Location
3-83	12210	11.9	2-84	0.0	331	Baie du Cabanage
3-83	17246	14.0	2-84	0.0	339	Baie du Cabanage
3-83	12304	13.5	Spring 1983	11.0	—	Petit Lac des Allemands
3-83	12260	11.0	Spring 1983	11.0	—	Petit Lac des Allemands
3-83	21205	14.5	Spring 1983	11.0	—	Petit Lac des Allemands
2-84	20616	13.0	6-84	18.0	154	Bill Spar's Pond
2-84	21038	11.0	9-84	1.1	208	Gulf Canal/Salvador WMA
2-84	19869	15.1	6-84	7.1	120	Bayou des Allemands
2-84	19910	10.2	9-84	8.0	207	Lake Cataouatche
2-84	20704	9.5	9-84	1.1	213	Tank Pond, Salvador WMA
2-84	19711	11.0	9-84	0.5	209	Headquarters, Salvador WMA
2-84	16850	11.4	6-84	13.4	123	Bayou des Allemands
2-84	20527	9.6	6-84	13.4	123	Bayou des Allemands
2-84	16808	11.0	5-84	8.0	104	Bayou Gauche
2-84	21233	10.5	5-84	23.0	95	Lac des Allemands
2-84	19787	10.0	Spring 1984	11.0	—	Petit Lac des Allemands
2-84	19713	11.5	Spring 1984	7.0	—	Bayou des Allemands/Gauche
2-84	20023	10.6	5-84	7.1	83	Lake Salvador
2-84	19581	10.6	5-84	18.0	104	Bill Spar's Pond
2-84	16723	9.0	5-84	24.1	89	Lac des Allemands
2-84	19762	13.0	5-84	4.1	95	Lake Salvador
2-84	20597	10.8	5-84	23.0	103	Lac des Allemands
2-84	16763	10.0	8-84	1.3	189	Gulf Canal/Salvador WMA
2-84	21137	10.0	3-84	7.1	30	Lake Salvador
2-84	20739	10.0	3-84	7.1	30	Lake Salvador
2-84	21011	10.5	3-84	0.5	46	Gulf Canal/Salvador WMA
2-84	19995	14.0	3-84	2.0	31	Lake Salvador
2-84	19894	11.0	4-84	0.5	45	Gulf Canal/Salvador WMA
2-84	21350	13.5	4-84	7.1	60	Lake Salvador
2-84	19626	12.1	4-84	0.0	59	Gulf Canal/Salvador WMA
2-84	20965	11.0	4-84	0.0	66	Baie du Cabanage
2-84	20549	9.0	7-84	13.0	153	Bayou des Allemands
2-84	21098	9.0	7-84	16.0	149	Bayou des Allemands
2-84	21342	9.8	7-84	16.0	147	Bayou Segnette
2-84	20370	10.5	7-84	1.0	136	Gulf Canal/Salvador WMA
2-84	16712	12.6	6-84	2.3	139	Lake Salvador
2-84	19569	15.1	—	12.3	—	Bayou des Allemands
2-84	16700	9.1	7-84	14.0	166	Bayou des Allemands
3-84	18603	11.5	5-84	4.1	74	Lake Salvador
3-84	19569	14.3	3-84	8.6	7	Lake Cataouatche
3-84	18554	11.7	4-84	0.0	42	Gulf Canal/Salvador WMA
3-84	18529	15.5	7-84	22.0	139	Bayou Lafourche
3-84	18638	14.2	7-84	8.6	131	Bayou Gauche

¹T.L.—total length.

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