# LOUISIANA DEPARTMENT OF WILDLIFE & FISHERIES

OFFICE OF FISHERIES
INLAND FISHERIES SECTION

PART VI –C (ARCHIVES)

WATERBODY MANAGEMENT PLAN SERIES

# LACASSINE POOL

AQUATIC VEGETATION TYPE MAPS
AND NARRATIVES

United States Department of the Interior
FISH AND WILDLIFE SERVICE
75 SPRING STREET, S.W.
ATLANTA, GEORGIA 30303

OCT 6 1986

Memorandum

To: Assistant Regional Director - Refuges and Wildlife, FWS, Atlanta, GA

From: Assistant Regional Director - Fish and Wildlife Enhancement, FWS, Atlanta, GA

Subject: Special Report - Contaminant Survey at Lacassine NWR

Attached is a copy of a special report concerning the contaminant survey conducted at Lacassine NWR, Lake Arthur, Louisiana. If you have any questions regarding this report, please contact Waynon Johnson or Don Schultz of this office.

Attachment

cc:
RF-2, ARW, Atlanta, GA
Refuge Manager, Lacassine NWR, Lake Arthur, LA
Director, FWS, Washington, DC (DEC)
Field Supervisor, ES, FWS, Lafayette, LA
Natchitoches NFH, Natchitoches, LA (Attn: Fishery Biologist, FA)
Wildlife Management Biologist, Jackson, MS

United States Department of the Interior
FISH AND WILDLIFE SERVICE
75 SPRING STREET, S.W.
ATLANTA, GEORGIA 30303

Special Report: Contaminant Study at Lacassine National Wildlife Refuge, Lake Arthur, Louisiana.

## Introduction

Lacassine National Wildlife Refuge is located in Cameron Parish, near Lake Arthur, in southwest Louisiana. It includes over 30,000 acres of unique coastal freshwater marsh. Lacassine NWR hosts one of the largest population of overwintering waterfowl of any refuge in the Service. Many other water birds and mammals are associated with the marsh. The area around the refuge is devoted primarily to agriculture with major crops being rice, soybeans, and wheat. In addition, there are many oil production facilities adjacent to the refuge. A contaminant survey was conducted in 1985 to determine whether fish from the refuge and surrounding waters contain contaminants at levels of concern which could impact the resource.

## Methods and Materials

Fish were collected from five stations (Figure 1) by using rotenone and electroshocking on August 13-14, 1985. Station 5 was not collected because of hurricane Danny. Fish were weighed, measured, wrapped in aluminum foil and frozen. The fish were shipped frozen to analytical laboratories where they were analyzed on a whole-body basis. Organochlorine pesticide and PCB analyses were performed by the Mississippi State chemical laboratory, Starkville, Mississippi, and metal analyses were performed by Environmental Trace Substances Research Center, Columbia, Missouri.

## Results and Discussion

The results of the analyses are presented in Tables 1 and 2. Levels of metal residue were not high enough to be of biological concern. There were, however, several samples which had elevated levels of certain metals such as; black crappie from LA-6 which had a copper level of 1.50 ppm; bluegill from La-6 which had 0.79 ppm of mercury and several samples which had elevated levels of nickel (LA-3, blue catfish and LA-4, yellow bullhead). However, the majority of the samples were much lower and not indicative of major pollution.

Levels of pesticides were extremely low and non-detectable in most instances. Station 6 (Lower Mermentau River) had the highest concentrations of the five stations collected, however these were not high enough to cause concern. Based on these results it does not appear that Lacassine NWR is being impacted by organochlorine or metal contamination.

FIGURE 1. FISH SAMPLING STATIONS, CONTAMINANT SURVEY, AUGUST, 1985

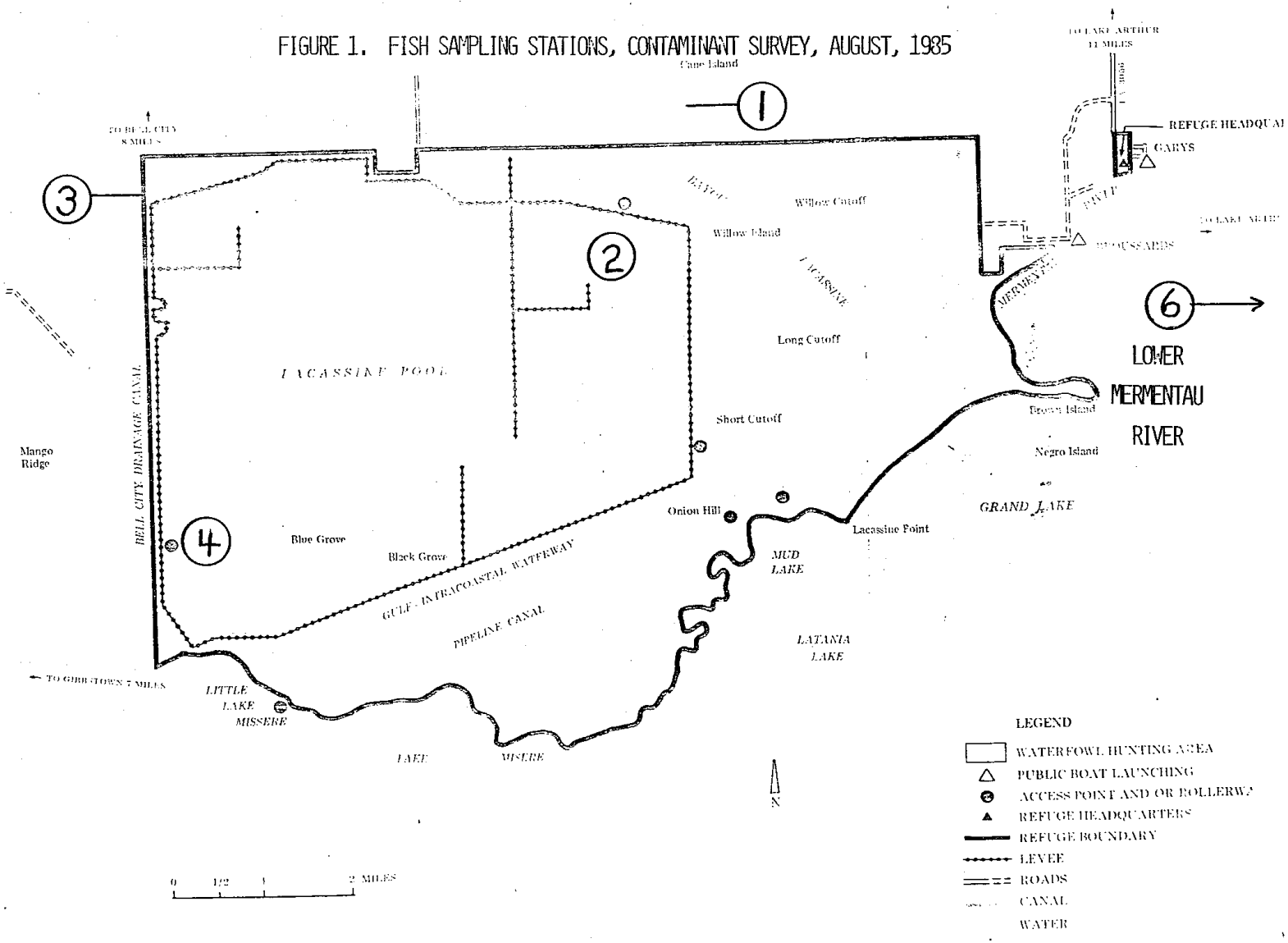

Table 1. Residues of metals in fish from Lacassine National Wildlife Refuge, Lake Arthur, LA.

(Units are ug/g wet weight = ppm).

| Sample ID | Metal | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | As | Cd | Cu | Fe | Hg | Ni | Pb | Se | Zn |
| LA-1-Bluegill | <0.05 | <0.06 | 0.52 | 59.1 | 0.29 | 4.4 | <0.1 | 0.33 | 24.8 |
| LA-1-Warmouth | <0.05 | <0.05 | 0.45 | 32.1 | 0.31 | 15.0 | <0.1 | 0.21 | 22.1 |
| LA-1-Yellow bullhead | 0.07 | <0.04 | 0.76 | 54.8 | 0.23 | 0.49 | <0.08 | 0.18 | 12.1 |
| LA-1-Drum | <0.05 | <0.05 | 0.39 | 24.0 | 0.55 | 0.89 | <0.1 | 0.34 | 18.9 |
| LA-1-Black Crappie | 0.06 | <0.05 | 0.37 | 15.3 | 0.25 | 0.87 | <0.1 | 0.23 | 16.2 |
| LA-1-Gar | <0.07 | <0.07 | 0.73 | 46.3 | 0.27 | 11.1 | 0.2 | 0.31 | 27.6 |
| LA-2-Warmouth | <0.05 | <0.05 | 0.30 | 20.8 | 0.12 | 2.0 | <0.1 | 0.1 | 24.0 |
| LA-2-Yellow bullhead | <0.05 | <0.05 | 0.52 | 28.0 | 0.070 | .28 | <0.09 | 0.1 | 14.0 |
| LA-3-Bluegill | <0.05 | <0.05 | 0.40 | 42.0 | 0.15 | 4.70 | <0.1 | 0.29 | 26.1 |
| LA-3-Drum | 0.05 | <0.05 | 0.72 | 16.9 | 0.41 | 0.71 | <0.1 | 0.33 | 19.2 |
| LA-3-Black Crappie | <0.05 | <0.06 | 0.61 | 40.4 | 0.27 | 2.4 | <0.1 | 0.28 | 17.3 |
| LA-3-Gar | <0.06 | <0.07 | 0.52 | 37.1 | 0.34 | 8.78 | <0.1 | 0.28 | 26.2 |
| LA-3-Blue Catfish | <0.05 | <0.04 | 0.60 | 127. | 0.11 | | <0.08 | 0.20 | 17.6 |
| LA-4-Bluegill | <0.05 | <0.05 | 0.29 | 38.3 | 0.077 | 4.0 | <0.1 | 0.1 | 37.3 |
| LA-4-Warmouth | <0.05 | <0.06 | 0.33 | 47.4 | 0.38 | 4.0 | <0.1 | 0.1 | 27.8 |
| LA-4-Yellow bullhead | <0.05 | <0.05 | 0.48 | 108.0 | 0.14 | 4.0 | <0.9 | 0.1 | 14.4 |
| LA-4-Red Ear | <0.05 | <0.05 | 0.29 | 36.0 | 0.087 | 4.0 | <0.1 | 0.1 | 30.5 |
| LA-6-Bluegill | 0.09 | <0.05 | 0.40 | 53.7 | 0.79 | 4.0 | <0.1 | 0.23 | 24.4 |
| LA-6-Warmouth | 0.06 | <0.04 | 0.36 | 20.3 | 0.31 | 4.0 | <0.09 | 0.21 | 21.1 |
| LA-6-Drum | 0.08 | <0.06 | 0.66 | 23.3 | 0.38 | 4.0 | <0.1 | 0.32 | 18.1 |
| LA-6-Black Crappie | 0.1 | <0.06 | 1.50 | 17.4 | 0.51 | 4.0 | <0.1 | 0.26 | 17.7 |
| LA-6-Gar | 0.1 | <0.06 | 0.80 | 31.7 | 0.50 | 4.0 | <0.1 | 0.29 | 19.1 |
| LA-6-Largemouth Bass | 0.06 | <0.06 | 0.31 | 14.7 | 0.49 | 4.0 | <0.1 | 0.32 | 13.4 |

Table 2. Residues of organochlorine pesticides in fish from Lacassine National Wildlife Refuge, Lake Arthur, LA.

(Units are ug/g wet weight = ppm).

| Sample ID | Pesticide | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | pp DDD | pp DDE | pp DDT | Diel-drin | Endrin | Oxychlor-dane | PCBs | t-nona-chlor | Toxa-phene | Mirex |
| LA-1-Bluegill | ND | 0.02 | ND | 0.01 | ND | ND | ND | 0.01 | ND | 0.01 |
| LA-1-Warmouth | ND | 0.01 | ND | ND | ND | ND | ND | ND | ND | ND |
| LA-1-Yellow bullhead | ND | 0.01 | ND | ND | ND | ND | ND | ND | ND | 0.01 |
| LA-1-Drum | ND | 0.01 | ND | 0.01 | ND | ND | ND | 0.01 | ND | ND |
| LA-1-Black Crappie | ND | 0.01 | ND | 0.01 | ND | ND | ND | 0.01 | ND | 0.01 |
| LA-1-Gar | 0.01 | 0.04 | 0.01 | 0.01 | ND | ND | ND | 0.01 | ND | 0.03 |
| LA-2-Warmouth | ND | 0.01 | ND | ND | ND | ND | ND | ND | ND | ND |
| La-2-Yellow Bullhead | ND | 0.01 | ND | ND | ND | ND | ND | ND | ND | ND |
| LA-3-Bluegill | ND | 0.02 | ND | 0.01 | ND | ND | ND | ND | ND | ND |
| LA-3-Drum | ND | 0.01 | ND | 0.01 | ND | ND | ND | 0.01 | ND | 0.01 |
| LA-3-Black Crappie | ND | 0.01 | ND | 0.01 | ND | ND | ND | ND | ND | ND |
| LA-3-Gar | ND | 0.02 | 0.01 | ND | ND | ND | ND | 0.01 | ND | 0.01 |
| LA-3-Blue Catfish | ND | 0.01 | ND | ND | ND | ND | ND | 0.01 | ND | ND |
| LA-4-Bluegill | ND | 0.01 | ND | ND | ND | ND | ND | ND | ND | ND |
| LA-4-Warmouth | ND | 0.06 | ND | ND | ND | ND | ND | ND | ND | ND |
| LA-4-Yellow Bullhead | ND | 0.06 | ND | ND | ND | ND | ND | ND | ND | ND |
| LA-4-Red Ear | ND | 0.06 | ND | ND | ND | ND | ND | ND | ND | ND |
| LA-6-Bluegill | 0.01 | 0.06 | 0.01 | 0.02 | ND | ND | ND | 0.03 | ND | 0.01 |
| LA-6-Warmouth | ND | 0.06 | ND | ND | ND | ND | ND | 0.01 | ND | ND |
| LA-6-Drum | 0.02 | 0.06 | 0.03 | 0.02 | ND | ND | ND | 0.04 | ND | 0.01 |
| LA-6-Black Crappie | 0.01 | 0.06 | 0.01 | 0.02 | ND | ND | ND | 0.02 | ND | 0.01 |
| LA-6-Gar | 0.03 | 0.06 | 0.03 | 0.02 | ND | ND | ND | 0.03 | ND | 0.02 |
| LA-6-Largemouth Bass | 0.02 | 0.06 | 0.01 | 0.02 | ND | ND | ND | 0.02 | ND | 0.01 |

ND = None detected

# Appendix

## List of Abbreviations Used in Report

ppm = parts per million

As = arsenic

Cd = cadmium

Co = cobalt

Cu = copper

Fe = iron

Hg = mercury

Mo = molybdenum

Ni = nickel

Pb = lead

Sb = antimony

Se = selenium

Sn = tin

Tl = tantalum

V = vanadium

Zn = zinc

PCB = polychlorinated biphenyl(s)