A PROPOSAL FOR DESIGNATION OF CATAHOULA LAKE AS

WETLANDS OF INTERNATIONAL IMPORTANCE

14 March 1991

Prepared and Submitted by

Louisiana Department of Wildlife and Fisheries

A. Kell McInnis, III, Acting Secretary

A PROPOSAL FOR DESIGNATION OF CATAHOULA LAKE AS

WETLAND OF INTERNATIONAL IMPORTANCE

Executive Summary:

Catahoula Lake has long been recognized as an important waterfowl wintering area in Louisiana. This large, shallow, poorly drained wetland supports choice waterfowl food plants and has been referred to as one of the largest moist soil unit in North America. Subject to drastic water level fluctuations the lake provides habitat for hundred of thousands of ducks, geese, and shore/wading birds as well as aquatic habitat for both sport and commercial fishes.

Catahoula Lake's importance as a waterfowl area is documented by the fact that population peaks in excess of 400,000 ducks have been recorded. Historically important as a wintering area for northern pintail, in recent years, the lake has become one of the most important wintering areas for canvasback in North America. Counts on Catahoula Lake have accounted for as much as 26% of the total canvasback population recorded in annual mid-winter waterfowl surveys.

This unique 12,150 ha. (30,000 acre) wetland is owned by the State of Louisiana with management authority vested with the Louisiana Department of Wildlife and Fisheries. The lake is managed as a "wetland" under a tri-party management plan with the cooperators including the U. S. Army Corps of Engineers, U. S. Fish and Wildlife Service, and the Louisiana Department of Wildlife and Fisheries.

This proposal requests the designation of Catahoula Lake as a Wetlands Of International Importance. The attached report details the various aspects of this important wetland.

State of Louisiana

A. Kell McInnis III
Acting Secretary

Department of Wildlife and Fisheries
Post Office Box 98000
Baton Rouge, LA 70898
(504) 765-2800

Buddy Roemer
Governor

March 14, 1991

Mr. Lawrence Mason, Chief
Office of International Affairs
U.S. Department of the Interior
Fish and Wildlife Service
Washington, D. C. 20240

Dear Lawrence:

Enclosed you will find the Louisiana Department of Wildlife and Fisheries proposal for the nomination of Catahoula Lake as a Wetlands of International Importance. As managing authority for this important lake, the Department is dedicated to the continued maintenance and management of this unique wetland as a major wintering and migration area for waterfowl and shore/wading birds as well as an important fisheries production area for the Red River backwater system.

We have addressed the areas of concern mentioned in your review of our original application and am resubmitting our proposal for consideration.

Your assistance in processing this proposal will be appreciated.

Sincerely,

A. Kell McInnis III
Acting Secretary

AKM:JE

cc: Jim Pulliam, FWS, Region 4

PROPOSED U. S. WETLANDS OF INTERNATIONAL IMPORTANCE
CATAHOULA LAKE

NOMINATING AUTHORITY:

Louisiana Department of Wildlife and Fisheries
P. O. Box 98000
Baton Rouge, LA 70898-9000

GEOGRAPHIC LOCATION: 31° 30′ north 92° 06′ west. Catahoula Lake is located on the western edge of the Mississippi River alluvium in the complex Red River backwater area. Located in LaSalle and Rapides Parishes in central Louisiana the lake is 20 miles northeast of Alexandria, Louisiana. Figure 1.

SITE DESCRIPTION: Catahoula Lake is a large, shallow, poorly drained depression subject to drastic seasonal water level fluctuations. The lake is primarily fed by Little River along with numerous smaller streams from the north and is also subject to backwater flooding from the Red, Black, and Mississippi Rivers. During the summer drawdown water in the pool is only 12-18" deep; however, during major spring floods water depths of as much as 25′ have been recorded. The lake presently drains via French Fork, Old River, and the Catahoula Lake Diversion Canal. Historically, the lake flooded in the winter and dewatered during the summer growing season. This historic scheme is presently duplicated via a series of water control structures.

Ecologically, few plants are adapted to the water fluctuation cycle on Catahoula Lake; however, annual grasses and sedges that flourish on this 30,000 acre lake are choice waterfowl foods which results in what has been referred to as one of the largest moist soil units in North America. The lake bed is characterized by uniform plant types occurring in concentric zones related to lake bed contour. The periphery of the lake supports woody plants, primarily water elm (Planera aquatica), swamp privet (Foresteria acuminata), and irregular occurrences of bald cypress (Taxodium distichum). The next zone is dominated by chufa (Cyperus esculentus) with the next lower zone being predominately sprangle top (Leptochloa filiformis), and teal grass (Eragrostis hypnoides). Dense stands of millet (Echinochloa sp.) occur around the marshy area of the lake and the permanently flooded zone supports bull tongue (Sagittaria sp.), mud plantain (Heteranthera limosa), and water hyssop (Bacopa monnieri). Catahoula Lake affords habitat for hundreds of thousands of ducks and shore birds as well as aquatic habitat for both sport and commercial fishes.

CRITERIA FOR INCLUSION: A unique wetland community; volume of utilization by migratory and resident waterfowl; volume of utilization by migratory shorebirds; use by rare, endangered, or species of major concern.

Catahoula Lake is the most important inland wetland for waterfowl and shore/wading birds in Louisiana. Waterfowl populations begin to build on the lake with the arrival of blue-winged teal in late August and culminate when migrating ducks use the lake while returning to the breeding grounds. Population peaks in excess of 400,000 ducks have been recorded in recent years.(LDWF, unpubl. files). This water shed provides wintering habitat for up to 200,000 northern pintail ducks, a species of major concern (LDWF, unpubl. files). Catahoula Lake is also one of the most important wintering areas for canvasbacks in North America. A peak population estimate of 78,000 canvasbacks was recorded

in 1988 (Woolington and Emfinger,1989). In recent years, counts on Catahoula Lake have accounted for as much as 26% of the total canvasback population recorded nation wide in annual mid-winter waterfowl surveys (Woolington and Emfinger, 1989). The importance of the lake as a staging area for migrant shore/wading birds has long been recognized; however, there has been little documentation. The drawdown period on the lake corresponds to the peak migration of shorebirds and a one day survey in September 1989 recorded an estimated 19,000 shorebirds comprised of 20 species (Pashly, unpubl. files). Sighting of the endangered Bald Eagle as well as the American alligator have been made on Catahoula Lake.

AREA: The area is a large, shallow, poorly drained sump area that is subject to drastic seasonal water level fluctuations. At full capacity, the lake is approximately 8.7 km long, 1.9 km wide and contains about 12,150 ha. (30,000 ac.). During the summer drawdown, a minimum poll of 2,025 ha. (5,000 ac.) is maintained.

MANAGEMENT PRACTICES: Water level management on Catahoula Lake is regulated by a tri-party management agreement which is designed to duplicate the natural water fluctuation cycle which historically existed on the lake. The management plan cooperators include the U. S. Army Corp. of Engineers, who is responsible for maintenance and repair to the water control facilities. The U. S. Fish and Wildlife Service monitors the waterlevels, oil and gas activities, waterfowl concentrations, and physically operates the water control structures through the staff at the Catahoula NWR. The Louisiana Department of Wildlife and Fisheries (LDWF) monitors waterlevels, waterfowl food plant production, conducts waterfowl population surveys, permits and oversees oil activities, maintains the State Refuge, and conducts research relative to waterfowl on Catahoula Lake.

Through manipulation of the water control structures the lake is dewatered beginning July 1. This action exposes the lake bed and assures development of the natural plant communities which grow on the lake. This condition is maintained during the growing season to provide for development and maturation of the seed and tuber crop. In early fall the water level on the lake is raised to provide for optimum feeding conditions for migrating and wintering waterfowl.

Research concerning the magnitude of the lead poisoning problem on Catahoula Lake has been conducted by the LDWF since 1964. The most recent update of this soil sampling study was completed in 1987 and revealed that approximately 109,000 pellets/acre are found in the top 8" of the Lake bed (LDWF, unpubl. files).

As a result of the large quantities of lead pellets on the lake bottom and the subsequent lead poisoning potential, the lake bed is flooded, following the close of the waterfowl season, to a depth which disperses the puddle ducks using Catahoula Lake. This scheme of flooding-dewatering-and reflooding not only encourages the plant communities which historically existed but also retards the encroachment of woody vegetation onto the lake bed.

The encroachment of woody plants onto the open lake bed has the potential to greatly reduce the value of the lake as an area for waterfowl and shore/wading birds. Efforts have been made to control the encroachment of water elm, swamp privet, and water locust, through water level management. In addition both mechanical and enviromentally acceptable chemicals, which are labeled and

approved, have been used to reclaim portions of the lake bed from this invasion. The magnitude of the woody encroachment problem seems to increase annually. Unchecked, this could modify the ecology of the Lake and the resulting closed canopy would drastically reduce or eliminate the valuable waterfowl food plants which are annually produced on the open Lake bed.

Because of its importance to waterfowl and waterfowl hunting in Central Louisiana, Catahoula Lake receives a large amount of waterfowl hunting pressure. Sanctuary for waterfowl is provided by the nearby 2,430 ha. (6,000 ac.) Catahoula National Wildlife Refuge and by a 410 ha. (1,010 ac.) state refuge or rest area near the center of the lake.

CHANGES IN ECOLOGICAL CHARACTER: Catahoula Lake was threatened during the 1960's when a plan was conceived to develop a 9 foot navigation channel on the Black and Ouachita Rivers. This plan required the construction of a number of locks and dams on the river, one of which, would have permanently flooded Catahoula Lake. The Department of Wildlife and Fisheries lead the fight to save Catahoula Lake as a waterfowl area. A compromise was reached which provided water level control and a water management plan was developed to duplicate the natural water cycle. This threat may have been settled; however, each year groups with plans to impound the lake and commercially develop the shore line surface.

A second ecological problem is the large number of lead shot found on the Lake bottom. Research conducted by LDWF has documented the magnitude of the problem. The 109,000 shot/acre found at Catahoula lake, represents one of the highest concentrations reported on a major wintering waterfowl area in the United States. Lead poisoning die-offs have been documented at Catahoula Lake since the 1950's. Die-offs involving several thousand ducks have been reported and in 1989 a major die-off occurred when the lead poisoning problem complicated by the stress of a severe winter freeze resulted in the death of approximately 10,000 ducks. Research conducted by the U.S. Fish and Wildlife Service, National Wetlands Research Center at L.S.U. has documented the lead poisoning problem in canvasback ducks and has suggested that sublethal doses of lead may adversely impact survival and may also impair reproductive performance (Hohman et.al. 1990). Lead poisoning in waterfowl has had a major influence on management decisions at Catahoula Lake. The waterlevel management plan has been designed to minimize the effects of lead poisoning and the Lake was one of the first areas in Louisiana to require the use of nontoxic shot for waterfowl hunting. The results of the analysis of soil samples taken in 1964 and 1987 indicate that most of the lead shot remain in the top 6" of the lake bed. Conversion to nontoxic shot may simply be adding a layer of nontoxic shot over a heavy burden of lead shot already in the soil. This has led the LDWF to initiate research to evaluate methods of reducing toxic shot availability to waterfowl. A study is presently being conducted at Catahoula Lake through the Cooperative Wildlife Research Unit at L.S.U. to evaluate the effect of deep tillage on the availability of lead shot. The data is presently being analyzed and initial results appear promising. One treatment, the California vegetable plow, successfully redistributed 93% of the shot below 4" (10 cm) and 70% of the shot below 8" (20 cm) (Peters, 1991 progress report).

This study also looked at the impact these treatments would have on Chufa tuber production. Chufa is the number one waterfowl food plant produced on the Lake. The preliminary analysis indicates that average dry mass of Chufa tubers recovered from treatment 1 and 2 did not differ from untilled control plots, when

the entire soil column (0-40 cm.) was examined. However, there was a reduction in tuber mass for all treatments, when only the top 2 strata (0-20 cm) were analyzed (Peters, 1991 progress report). When this project is complete we should have a better idea of the long-term effects of these treatments on Chufa at Catahoula Lake.

Another ecological threat exist as a result of the extensive oil exploration on Catahoula Lake. The oil field is approximately 40 years old and the condition of many of the older pipelines and equipment was suspect. In recent years 3 relative minor oil spills have occurred on the lake, none of which have resulted in substantial damage. With the extensive utilization by ducks, geese and shore birds the potential of oil spills impacting large numbers of migratory birds exist. The LDWF has initiated efforts to look at this potential problem. The LDWF, USF&WS, La. Dept. of Conservation, La. Dept. of Natural Resources, and the Environmental Protection Agency (EPA) have met to formulate guidelines for oil companies operation on this important wetland. As a result of these initial meetings, the oil companies have replaced the older pipelines, installed pressure sensitive shutdown devices on the well heads, and removed unused or unnecessary oil field equipment from the Lake bed. When complete, these guidelines will require oil companies operating on the lake to upgrade their facilities, to install state of the art pollution control devices, and to upgrade their Spill Contingency Plans. A portion of this plan calls for an annual review, by these conservation agencies, of the oil companies Spill Contingency Plans and an update of the guidelines as new equipment and methods become available.

DEGREE OF PROTECTION: The entire lake bed is owned by State of Louisiana with state ownership being established at elevation 36' msl. Management authority of this wetland up to elevation 34' msl is vested with the Louisiana Department of Wildlife and Fisheries and a full time Wildlife Specialist is assigned to the lake. A tri-party management plan has been developed and has been operational since the 1970's. This management plan is jointly administered by the LDWF through the District 4 office and the U.S. Fish and Wildlife through the Catahoula NWR staff.

SCIENTIFIC RESEARCH AND FACILITIES: Various research projects concerning waterfowl and shore/wading birds use of Catahoula Lake are presently underway.

One on-going project, by the Louisiana Department of Wildlife and Fisheries involves an evaluation of the occurrence of lead and steel shot in the soils and duck gizzards from Catahoula Lake. A second research project presently underway involves the impact of deep tillage on the availability of lead shot. This project also will look at the impact of this practice on the natural vegetation. Institutions and agencies involved in this project include: Louisiana State University, Ducks Unlimited, Louisiana Department of Wildlife and Fisheries, U. S. Fish and Wildlife Service, and Catahoula Lake Conservation Club.

An inventory of shore/wading birds using Catahoula Lake will be conducted this fall. Project participants will be Louisiana State University and the Louisiana Department of Wildlife and Fisheries.

A number of studies have been completed or are in the planning stages concerning the increasing use of Catahoula Lake by diving ducks especially

canvasbacks and ring-necked ducks. The Fish and Wildlife Service, National Wetlands Research Center will coordinate these efforts.

No research facilities are available on Catahoula Lake; however, limited facilities are available at the Catahoula National Wildlife Refuge and at the Saline Wildlife Management Area both immediately adjacent to the lake.

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Selected Literature

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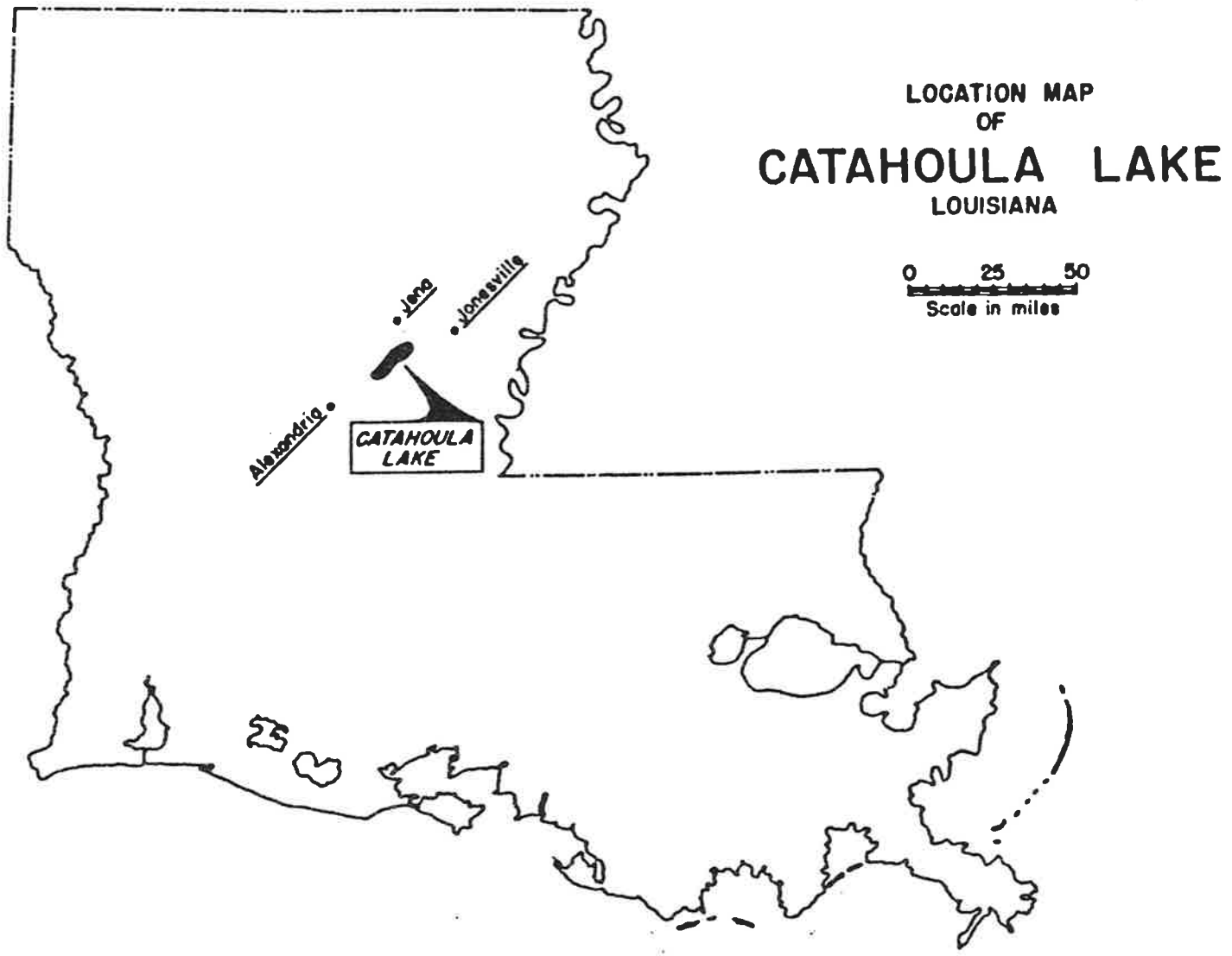
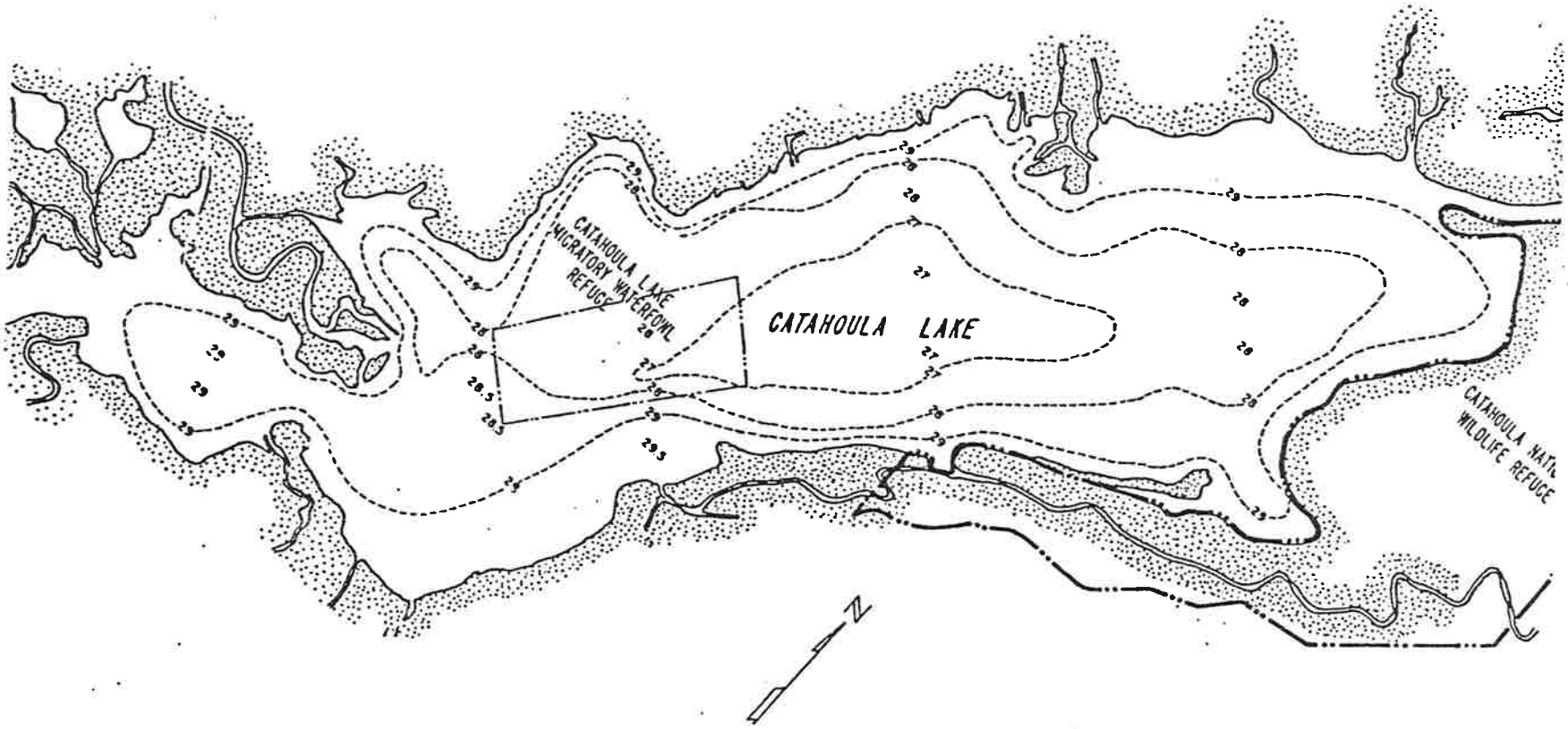

LOCATION MAP
OF
CATAHOULA LAKE
LOUISIANA
0 25 50
Scale in miles
Jena
Jonesville
Alexandria
CATAHOULA LAKE
25


CATAHOULA LAKE
CATAHOULA LAKE OIL FIELD
CATAHOULA LAKE
CATAHOULA LAKE
Indian Bluff
Big Point
Routh Point
Saline Point
Big Bend


CATAHOULA LAKE MIGRATORY WATERFOWL REFUGE
CATAHOULA LAKE
CATAHOULA NATL. WILDLIFE REFUGE
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