

TENSAS RIVER NATIONAL WILDLIFE REFUGE

Tallulah, Louisiana

ANNUAL NARRATIVE REPORT

Calendar Year 1987

U.S. DEPARTMENT OF THE INTERIOR  
FISH AND WILDLIFE SERVICE  
NATIONAL WILDLIFE REFUGE SYSTEM

REVIEW AND APPROVALS

TENSAS RIVER NATIONAL WILDLIFE REFUGE

Tallulah, Louisiana

ANNUAL NARRATIVE REPORT

Calendar Year 1987

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7/25/88  
Date

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3-15-88  
Date

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3-15-88  
Date

## INTRODUCTION

In an effort to preserve the largest privately owned tract of bottomland hardwoods remaining in the Mississippi delta, Congress authorized the Secretary of the Interior to establish the Tensas River National Wildlife Refuge through Public Law 96-285 on June 28, 1980.

The refuge is located in the Tensas River Basin in northeastern Louisiana approximately 60 miles east of Monroe, Louisiana, and 25 miles west of Vicksburg, Mississippi. The project selection area encompasses portions of Madison, Tensas, and Franklin Parishes. The office/visitor center and maintenance facility are located approximately 8 miles southwest of Tallulah, Louisiana on the refuge.

The project selection area encompasses approximately 50,000 acres of land owned by the Chicago Mill and Lumber Company, and approximately 6,000 acres of private inholdings. The project area, locally referred to as the Singer Tract, is literally an island of woods in a sea of agriculture. The refuge is being acquired through a joint effort of the U. S. Fish and Wildlife Service and the U. S. Army Corps of Engineers. Eighty percent of the original funds used to acquire the lands within the refuge came from the Corps of Engineers to mitigate the loss of fish and wildlife resources associated with six flood control projects currently under construction or being planned in this portion of the state. The mitigation lands were recommended by the U. S. Fish and Wildlife Coordination Act which calls for the wildlife resources to be considered along with other values associated with water resource development projects.

One of the projects, the Tensas River Flood Control Project, has been planned concurrently with the establishment of the refuge. This project traverses the refuge area and represents a compatible solution to the need for flood control and bottomland hardwood habitat conservation.

The refuge is stretched out in two units. The northern section is the Judd Brake Unit and the southern section is called the Fool River Unit. The length of the refuge is in excess of 20 miles and the width approximately 10 miles at their respective extremes. The two units are roughly 1 mile apart at their closest point, but are almost 6 miles apart by road.

As of this date, 52,432 acres have been purchased.

INTRODUCTION

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K. FEEDBACK

## A. HIGHLIGHTS

Land acquisition/easement activities shift into high gear again with emphasis on inholdings and FmHA lands (Section C.).

Black bear research project initiated (Section D. 5 and G. 2).

George Chandler replaces Tuck Stone as Project Leader (Section E. 1).

Wintering waterfowl levels skyrocket to over 90,000 in response to moist-soil/ag units (Section G. 3).

Over 2,200 deer harvested during refuge hunts (Section G. 8).

Post-season mallard banding quota achieved for the first time at Tensas River (Section G. 16).

New office/visitor center opened to the public (Section H. 1).

Office/visitor center, maintenance facility and bridge construction completed in 1987 (Section I. 1).

## B. CLIMATIC CONDITIONS

Seasonal weather patterns were generally typical except for a few interesting developments during the year. The end of January was unseasonably warm with the mercury topping out at 75°F, prompting even alligators to bask in the sunshine. In February, 9.5 inches of rain fell in 14 days flooding the Mill Road, halting major construction projects, and drowning out the would-be Tensas turkey trappers from D'Arbonne NWR. March brought the year's only snow-flurry occurring on the 30th. April's high of 95°F on the 21st was the highest temperature ever recorded in northeast Louisiana for April. May 1, was a day of extremes as the month's high of 89°F and low of 52°F were both recorded on this day. Summer temperatures were not as torturous as some years; only 6 days with temperatures above 95°F were recorded.

November was characterized by foul weather as 14.71 inches of rain fell (7 inches on November 16) and a tornado ripped through the area causing minor timber damage on the refuge, but several millions of dollars in structural damages in nearby Tallulah. Once the refuge was secured, refuge staff responded to Tallulah's crisis by spending a day clearing roads of fallen timber and debris. December was relatively warm but extreme with a recorded high of 82°F on the 15th followed by a 75°F low on the 17th.

Maximum monthly high temperatures ranged from 75°F in January to 97°F in July and August. Monthly lows ranged from 23°F in January to 69°F in August. October was the driest month with 1.09 inches of rainfall while November received the most precipitation with 14.71 inches. February and May were also wet with 9.5 inches and 6.97 inches of rain, respectively. All climatological data were recorded at People's Water Service in Tallulah.

TABLE Summary of Monthly Temperatures and Rainfall on Tensas River NWR During 1987.

<u>MONTH</u>	<u>HIGH TEMPERATURE (°F)</u>	<u>LOW TEMPERATURE (°F)</u>	<u>PRECIPITATION (INCHES)</u>
January	75	23	3.91
February	75	27	9.50
March	83	28	6.34
April	95	28	2.34
May	89	52	6.97
June	89	58	4.00
July	97	55	4.09
August	97	69	2.86
September	93	51	2.98
October	89	37	1.09
November	83	30	14.71
December	82	25	4.75
			<u>TOTAL</u> 63.54

## C. LAND ACQUISITION

### 1. Fee Title

Land acquisition efforts shifted into high gear again in 1987. The following activities are noted by month:

January - During the week on January 12, Gene Repoff of the Division of Realty was on-site making offers to land owners of 10 of the refuge's highest priority tracts. By week's end, Gene had more takers than money available. A congressional inquiry was received from Senator Johnston's Office relative to refuge acquisition needs.

February - A response was provided to Senator Johnston's request for acquisition needs in FY 88 and beyond.

April - On April 29, Congressman Huckaby's Office asked for verbal briefing information for hearings later in the day before the Interior Appropriations Subcommittee relative to land acquisition at Tensas. The information was provided and Mr. Huckaby requested \$3 million for FY 88.

May - Deeds were received on the 384 acre Thomas Tract and 106 acre Ulmer property. The Nature Conservancy purchased the Brasher Tract, 143 acres in Lost Brake, for the refuge. The Nature Conservancy will be reimbursed with FY 88 acquisition funds.

June - Congressman Huckaby announced that the House of Representatives appropriated \$1 million for land acquisition at Tensas River in FY 88. He said that the final figure may be more as the Senate will likely ask for \$3 million and a compromise between the two figures is reached.

July - Updated land acquisition priorities were provided upon request to Congressman Huckaby's office and The Nature Conservancy. Negotiations for key inholdings, some with excellent waterfowl management potential, seem stalled in the Regional Office.

August - Acting Manager Ouchley met with State and national officials of The Nature Conservancy on several occasions to discuss their interest in purchasing the McGee Estate inholdings for the refuge. Additional legwork was conducted on the Ezell Tract for the Lafayette Ecological Service Office. This FmHA land adjacent the refuge is a candidate for the developing wetland easement and/or acquisition program.

September - Refuge personnel continued to assist Realty in acquisition efforts.

December - Congressman Huckaby advised that \$2.5 million would be available for land acquisition in FY 88. Final inspection and closing on the 293 acre McIntyre Tract was completed.

2. Easements

Tensas River NWR was selected to coordinate the FmHA wetland easement pilot program in Louisiana. The former Ezell Tract adjacent the refuge was selected as the initial property. Refuge and Lafayette Ecological Services personnel worked out easement terms agreeable to FmHA and permission was granted the Service to place water control structures on the area. The winter rains began before construction could start, necessitating the placement of temporary low-level dams to impound the sloughs. Hopefully, the legal mechanism to allow fee title transfers of these properties to the Service will soon be in place.

D. PLANNING

1. Master Plan

In February, a program evaluation team comprised of Ken Butts, Don Admas, Ken Chitwood, and Jim Tisdale spent two days on the refuge reviewing refuge goals and objectives. They were exposed to many aspects of the refuge program and the philosophy behind current priorities. There was a concensus at the concluding meeting that the comprehensive Master Plan process was unnecessary at this station. Established refuge objectives are as follows:

<u>REFUGE OBJECTIVES</u>	<u>UNIT</u>	<u>OUTPUTS</u>
Wildlife Interpretation	AH	200,000
Environmental Education	AH	2,500
Hunting	AH	80,000
Fishing	AH	10,000
Wildlife Observation	AH	20,000
Threatened Species Maintenance	UD	500
Waterfowl Maintenance	UD	
Geese        2,200 past year		300,000
Ducks       3,424,850 past year		15,000,000
Other Migratory Bird Maintenance	UD	50,000,000
Waterfowl Production	EA	5,000

#### 5. Research and Investigations

##### Tensas River NR 87 - "Migrant Insectivorous Birds in Bottomland Hardwood Forests: Ecology, Distribution, and Conservation" (43690-1)

Wylie Barrow, a Ph.D. candidate at Louisiana State University, completed his fourth and final year of research on the refuge. The objectives of his study are to:

a) investigate the ecology and distribution of small migratory insectivorous birds breeding in a bottomland hardwood forest in Louisiana, and to : b) investigate the ecology of seven of these small migratory birds in the Sierra de los Tuxtlas, Veracruz, Mexico.

Fieldwork on the refuge was conducted during the following periods: 13 March-24 July 1984, 31 March-6 September 1985, 22 May-27 July 1986, and March-July 1987. During this final phase, 30 breeding birds censuses were conducted in the Africa Flat, Fairfield, and Africa Lake areas of the Judd Brake Unit. Habitat selection was evaluated within the three study sites by sampling woody and understory vegetation. At this time, no statistical analysis has been performed on the relationship between brood habitat characteristics and avian relative abundance.

Foraging observations were continued in an effort to investigate patterns of habitat utilization. A total of 1,493 individual birds exhibiting over 4,000 foraging movements have been observed to date.

"Preliminary results using Correspondence Analysis (CA), a multivariate statistical technique, indicate that there are three major foraging guilds. The Eastern Wood Pewee is an aerial-hawk specialist. The Acadian Flycatcher, Hooded Warbler, American Redstart, Blue-gray Gnatcatcher, and Yellow-rumped Warbler are sally-gleaners. When CA was run on bird species with foraging height, distinct patterns of habitat use were evident. The Carolina Wren, Kentucky Warbler, and Swainson's Warbler used the ground and shrub layer (2m). The Acadian Flycatcher, Tufted Titmouse, White-eyed Vireo, and Hooded Warbler used the midstory (2-10m). The Prothonotary Warbler foraged in the understory and midstory with equal frequency. The other species primarily used the canopy layer (10m) of the forest while foraging".

Data analysis is being continued. Final results will be provided to the refuge when the dissertation is completed.

Tensas River NR 87 - "The Status of the Alligator Snapping Turtle (*Macroclemys temmincki*) in Louisiana (43690-2)

Principal investigator of this study is Dr. Neil H. Douglas, Professor of Biology and Director and Curator of Museum of Zoology, Northeast Louisiana University.

The alligator snapping turtle is the largest freshwater turtle in North America and is of considerable economic importance in Louisiana because of the demand for its flesh for turtle soup and table meat. Concern over the deleterious effects of waterway alteration, swampland drainage, clear cutting, egg predation, and harvest pressure on turtle populations has provided the impetus for this study. This species has been suggested for endangered species listing. Dr. Douglas, however, believes that population status must be scientifically documented before any such action should be considered.

The initial phase of the study entails field testing and evaluating various methods of capture, marking, and monitoring turtles in order to document reliable techniques for sampling turtle populations and determining age classes. Once reliable techniques have been identified, these methods will be employed in the second study phase, a statewide effort to determine the present status of this species.

Tensas River National Wildlife Refuge has been selected as one of the study areas for this investigation. Refuge personnel assisted in placing and checking turtle traps in the Tensas River and other likely habitat. Five alligator snappers were captured, marked, and released. Additional trapping areas were identified by refuge personnel. Fieldwork will continue by Dr. Douglas and a graduate student in 1988.

Tensas River NR 87 - "Population and Taxonomic Status of the Black Bear in the Tensas River Basin" (43690-3)

Due to the concern over human encroachment on bear range, dwindling bottomland habitat resources, and declining bear numbers, the U. S. Fish and Wildlife Service is conducting research to determine the status of the black bear in and around the Tensas River NWR. (For additional background information, please see Section G. 2). Refuge Biologist Keith Weaver will conduct the two year study that was initiated in late November.

Research objectives include: 1. Determine distribution and relative density of the black bear in the Tensas River Basin. 2. Attempt to determine whether the subspecies Ursus americanus luteolus still exists in the Tensas River Basin.

In addition to the above objectives, information will be gathered on food habits, movements, and home range, denning, and reproduction. Bears will be live-trapped with cable foot snares and/or culvert traps and fitted with metal ear tags and radio collars. Weight and body measurements will be taken, and a small upper premolar will be extracted for aging. Blood samples and tissue biopsies will be taken for genetic analysis through electrophoresis and mitochondrial-DNA techniques. Radio-instrumented bears will be monitored on a regular schedule and movements will be plotted on maps.

6. Other

On January 21-22, Manager Stone attended a planning meeting with other members of a newly appointed Wildlife Habitat Management Team, in Atlanta.

Stone attended a planning meeting with other Service personnel regarding the Farm Bill June 16-18, in Jackson, Mississippi.

E. ADMINISTRATION1. Personnel

9 4 1 12 5 3 10  
8 11 6 2 7

TR87-1

1. George Chandler, Refuge Manager	GS-12	PFT
2. Kelby Ouchley, Assistant Refuge Manager	GS-11	PFT
3. Elizabeth Sauselein, Assistant Refuge Manager	GS-7	PFT
4. Lawrence Moore, Administrative Forester	GS-11	PFT
5. Ernest Williams, Jr., Maintenance Mechanic	WG-10	PFT
6. Keith M. Weaver, Wildlife Biologist	GS-7	PFT
7. Rod A. Cobb, Maintenance Worker	WG-7	PFT
8. Samuel D. Hunter, Maintenance Worker	WG-6	PFT
9. Renford T. Williams, Biological Technician	GS-7	PFT
10. Shirley Whitney, Refuge Secretary	GS-5	PFT
11. Leslie D. Watson, Forestry Technician	GS-5	PFT
12. John C. Posey, Biological Technician	GS-5	TFT

There were several personnel changes this year. Three vacant and one new position were staffed and a new project leader came on board in September. The three vacant positions included a GS-9 Assistant Refuge Manager, GS-5 Forestry Technician, and WG-6 Maintenance Worker. Elizabeth Sauselein from Mississippi Sandhill Crane NWR was selected for the Assistant Refuge Manager position (Public Use) in January. Leslie Watson was selected for the Forestry Technician position the end of July. Samuel Hunter was selected for the Maintenance Worker position in August.

During the fall, a black bear research study was funded on the refuge, and a GS-9 Wildlife Biologist position was created. Keith M. Weaver, who worked previously on the refuge as a Forestry Technician, was selected for the position. Weaver came from the Department of Agriculture and reported for duty in late November.

Tuck Stone, Refuge Manager, was selected as Project Leader of Wheeler NWR in Alabama during the summer. Kelby Ouchley served, once again, as Acting Project Leader from August 2 through September 26. George Chandler from Mississippi Sandhill Crane NWR was selected as the new Project Leader for Tensas River. Manager Chandler arrived just in time for our busy hunting season.

Other personnel actions included the following: an extension of John Posey's not-to-exceed one year appointment in March, and the promotion of Maintenance Worker Rod Cobb from WG-6 to WG-7 in June.

## 2. Youth Programs



2 4 3 1

TR87-2 EAS

1. Andrew W. Claxton, Youth Leader
2. Charles L. Whitehead, Enrollee
3. Evon R. Jones, Enrollee
4. Juan D. Hendon, Enrollee
5. Pamela D. Williams, Enrollee (Not Pictured)

The 1987 YCC camp was limited to only five enrollees this year. A youth leader was selected from the 1986 camp and the other four enrollees were randomly selected from the local community. A local carpenter was hired for part of the summer to assist with the construction of a boardwalk nature trail. Most of the work for the kids involved the trail project. The boardwalk meanders through a small tract of hardwoods near the visitor center. Wet gumbo soils, mosquitos, hot temperatures, and sore backs were just a few of the obstacles the enrollees overcame during the project. Once the crew became familiar with the framing methods, they would work on their own initiative. Over 75 percent of the boardwalk was completed by the camp's end.



YCC enrollees and staff begin the first section on the boardwalk wildlife trail.



Over 800 feet of boardwalk were completed this summer by the YCC crew. TR87-4 EAS

Other projects completed included: painting of 10 miles of boundary lines and timber compartments, construction of a 30' x 60' duck trap, routine maintenance of shop and office/visitor center, and litter pickup. Once again, however small the size of the crew, the camp provided valuable labor intensive work. We were also happy to have no reportable accidents for a second consecutive year.



Construction of a 30' x 60' duck trap was another project for the YCC enrollees. TR87-5 EAS

### 3. Other Manpower Programs

Wiley Barrow, a doctoral student from Louisiana State University served as a co-op student for 8 weeks during the spring. Mr. Barrow has a familiar face on the refuge as he conducted his doctoral research for the past 3 years throughout the Tensas woods. Mr. Barrow's co-op projects included duck trap construction, direct seeding, beaver dam removal, and assisting with mechanical repairs and maintenance of vehicles and equipment.

### 4. Volunteer Program

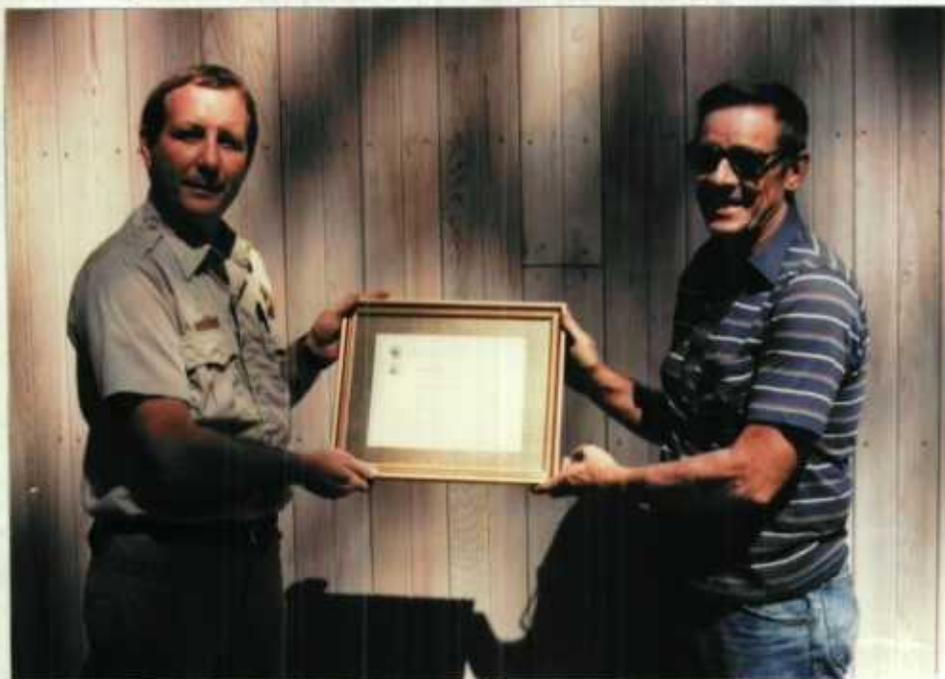
There were 14 refuge volunteers during the year. Dr. Robert Hamilton of Louisiana State University continued to conduct monthly roadside bird counts and owl surveys in an effort to gather baseline data on refuge avifauna and to complete a bird list. Amy Ouchley wrote several news releases regarding refuge activities. Christine Drane provided a green thumb in our visitor center landscaping efforts. Seven wildlife students from Louisiana Tech University assisted at the deer check stations throughout the gun season. Mike Foster provided invaluable carpentry assistance on various projects. Howard Gruchow, an employee of an oil company operating on the refuge, provided the most volunteer hours by grading roads in the Fool River Unit. A volunteer Service pin and certificate was presented to Mr. Gruchow for his many hours of refuge service.

### 5. Funding

Tensas River National Wildlife Refuge now has a new office/visitor center, maintenance facility and a new bridge over the Tensas River. We also have a full complement in staffing. Therefore, we refuse to complain about funding. However, it is very obvious that some money is going to have to be available in the future for proper maintenance of the new facilities that we are so proud of now. FY 88 funding gives us some discretionary funds which we plan to use for further moist-soil development. We also should receive a \$60,000 add-on for water well development in existing moist-soil management areas.



Volunteer Christine Drane donates several hours planting flowering trees to landscape the visitor center parking area. TR87 - EAS



Howard Gruchow receives a 300 hour volunteer pin and certificate from Manager Chandler. TR87- EAS

The following chart reflects annual funding for the past five years.

	<u>Operations and Maintenance</u>	<u>Construction</u>
FY 88	\$ 431,000	
FY 87	377,300	
FY 86	382,500	
FY 85	383,900	\$ 2,500,000
FY 84	192,000	

#### 6. Safety

Safety meetings were held on a monthly basis, usually in conjunction with staff meetings. Several safety films were shown and discussed. Also, during meetings personnel were encouraged to review any unsafe acts or conditions on present work projects that could be corrected. In July, a CPR course was held by personnel from the local emergency medical facilities. Everyone passed leaving poor Annie exhausted.

During the year, only two reportable accidents occurred. Both cases involved personal injury while lifting objects. Minor medical expenses were incurred for both cases and four days recovery were required for one employee. The YCC program safety record was unblemished for a second year. Considering the nature of the labor intensive work by the mostly urban youths in a hostile environment, this is indeed an accomplishment.

#### 7. Technical Assistance

Several adjacent landowners were advised of beaver control techniques by Forester Moore.

#### 8. Other

For the second year, revenue sharing checks were issued to local police juries. For the first time the figures were based on approximately 53,000 acres of Federal ownership (last year's checks were based on 35,000 acres). In April, Manager Stone presented checks to the Madison and Tensas Parish Police Juries for \$103,571 and \$42,842 respectively.

## F. HABITAT MANAGEMENT

### 1. General

With the exception of approximately 2,400 acres of agricultural lands, Tensas River National Wildlife Refuge is exclusively bottomland hardwood habitat located adjacent to and in the vicinity of the Tensas River. Although considered bottomland, much of the area is of sufficient elevation to be free of annual overflow from the Tensas River and its associated bayous, sloughs, and lakes. The heavy clay soils, however, retain moisture and wooded flats are flooded by rainfall much of the year, particularly during the winter-spring period.

Plant communities on higher elevations consists of sweet pecan, sweetgum, water oak, Nuttall oak, willow oak, and cherrybark oak, grading into water hickory, green ash, overcup oak, swamp red maple, sugarberry, and finally black willow and baldcypress on the lowest sites. Understory consists of ironwood, palmetto, red haw, rough-leaved dogwood, switch cane, buttonbush, swamp privet, and water elm.

### 2. Wetlands

Tensas River National Wildlife Refuge was subject to the annual overflow of the Mississippi River and its tributaries prior to the construction of levees after the flood of 1927. The Tensas River itself has never been straightened or channelized, although it is heavily contaminated by agricultural wastes in the form of silt and pesticides. It meanders like a snake throughout its watershed-the bends almost coming together in places. Some of the tributary streams have been ditched in sections to provide for agricultural areas. Drainage easements are present on Mothiglam Bayou, Buck Lake, Judd Brake, Lick Bayou, and Indian Lake. There are many lakes from less than 1 acre to 300 acres in size. There are also several cypress brakes with the most prominent being the Lost Brake-Judd Brake complex. A number of lakes have excellent fisheries potential, and if siltation could be controlled a significant amount of fishable water could be made available to the public.

The quality and quantity of desirable waterfowl food plants in moist-soil units declined in general this year. The impoundments have not been tilled for at least 2 years. The lack of disturbance may have resulted in the decline of such species as smartweeds and millets.

Most impoundments were drained in March to facilitate adjacent co-op farming. Stop-logs were installed again in early November to catch the seasonal rains.

The large erosion control structure installed in the Wilderness Field in August (Section I. 1) restored natural water levels to Ridge Lake.

### 3. Forests

Logging operations conducted by P. E. Barnes and Sons, LTD of Eudora, Arkansas continued for the fourth year on the refuge. Approximately 15,108 acres of the Fool River Unit were under three timber contracts. These contracts were negotiated between Chicago Mill and Lumber Company and Barnes prior to U. S. Fish and Wildlife Service acquisitions of ownership deeds.

Two of the contracts were completed during September and officially released December 15, 1987. These contracts encompassed some 11,643 acres which converts to refuge ownership and management. Another 2,830 acres has been released under the third contract known as Mack Bayou. There remains approximately 700 acres on which timber contracts will be completed during the summer of 1988.

With the release of 14,471 acres of refuge ownership, we will now be able to carry out our normal management activities without being encumbered by timber contract limitations.

Anytime a timber contract is allowed to be continued over a 4 year period, many factors affect the overall quality of the work. For example, lumber markets fluctuate, gas and diesel prices change, chip and stumpage prices and logging conditions vary, etc. These factors become very apparent when looking back over the scale areas. As the contracts developed, all timber 16" DBH and larger was to be cut. One can look at the different cuts and see when the timber

markets were good or bad. Some areas were strictly high graded by cutting only good grade red oak and ash while others were totally clear-cut. The changes in logging techniques cannot be considered all bad as it tends to create a mass of diversity, rather than a 15,000 acre clear-cut, but it sure makes for intense forest management for many years to come.

During 1987, the forestry staff was able to acquire maps and data provided by Chicago Mill to re-establish a continuous forest inventory system for the entire refuge. Chicago Mill's data goes back to 1960 and will provide us with very valuable information on stand development, species composition, growth and volumes throughout the refuge. Hopefully all of the plots can be relocated, especially in the cut over areas so stand development can be followed for the years to come.

The CFI system involves relocating or re-establishing 134 permanent plots throughout the refuge on 3/4 mile grids. Most of the plots have been relocated on the Judd Brake Unit which was outside the timber sale contracts.

With the Forest Habitat Management Plan due in FY 88, alot of time during 1987 was spent gathering baseline data, setting up compartments, re-establishing old section lines, stand mapping and accumulating this data into some legible form.

New aerial photos were taken during November 1987, which will greatly improve stand mapping abilities. There has been alot of changes made on the Tensas since the initial photos were taken prior to acquisition, not only in land-form appearances, but development within the refuge.

In a continuing effort to restore much of the 2,500 acres of refuge agricultural lands to their original forested state, another 643 acres were direct seeded and hand planted this year. A total of 3,589 pounds of water oak, willow oak, and Nuttall oak acorns were direct seeded and 1,300 seedlings of water oak, Nuttall oak, sawtooth oak, green ash, cherrybark oak, and cypress were planted.

Normal direct-seeding operations with a two row converted soybean planter allows approximately 10 acres per hour to be planted. On one particular day with ideal conditions and no breakdowns, the crew was able to plant 140 acres in 8 hours.

Total cost for gathering acorns (mostly through purchase from local residents), equipment, labor and planting ranged between \$9.10/acre to \$14.10/acre for direct seeding. We have found this to be our most cost efficient means of reforestation and thus far have had good to excellent results. All germination checks taken during November on last year's planting show very good to excellent results. All plantations were stocked with a minimum of 380 stems per acre or more. Some areas require more stems per acre during early development in order to survive and compete with the heavy herbaceous cover.

In preparation for the 1988 planting season, a total of 2,100 pounds of Nuttall acorns and 1,511 pounds of willow-water oak acorns were purchased from local residents.

Quite a lot of interest has been generated over the past year in relation to our direct seeding program. During July 1, a group from the Corps of Engineers and a landscape architect group from New Orleans visited the refuge to look over our planting to see if direct seeding would be adaptable on some of their spoil bank restoration projects.

On July 4, Ron Haynes and Howard Poitevint from the Regional Office and personnel from National Wetlands Research Center in Slidell, LA. visited the refuge to discuss direct seeding and hardwood plantation development.

During October, a group of 35 people from the Louisiana Forestry Association visited the refuge to discuss forest and wildlife management on the Tensas River Refuge.

#### 4. Croplands

The two major agricultural/moist-soil units, Wilderness Field and Greenlea Bend, were co-op farmed again in 1987. The 225 acre "new ground" field off of Sharkey Road was direct seeded to oaks and thus taken out of farm production.

Walter and Joe Scott farmed Greenlea Bend again on an 80%:20% agreement. They planted 720 acres of soybeans for themselves and 140 acres of corn and 40 acres of winter wheat for the refuge.

In order to maintain management continuity in the Wilderness Field the share ratio was temporarily reduced. This allowed us to keep farmers B. J. and Bill Allen for a second year after having changed farmers there for three consecutive years. This unit is severely infested with rhizome Johnsongrass which contributed to financial losses for all previous farmers. The temporary rent reduction allowed the Allens to invest more in herbicides to control the grass. Hopefully this treatment will lessen the problem to manageable levels for future years. The Allens planted 820 acres of soybeans for themselves and 100 acres of corn and 40 acres of winter wheat for the refuge.

Winter wheat was plowed under in February as green manure. Corn was planted in March and early April. No-till methods were used here for the first time in Wilderness Field. Soybeans were planted in May. The frequent June showers assured a bountiful corn and Johnsongrass crop and the best soybean crop ever on the refuge. Dry October weather allowed a soybean harvest which averaged 40 bushels per acre.

Refuge agricultural/moist-soil areas provide for a diversity of species not characteristic of monotypic woodlands. In addition to a host of waterfowl, shorebirds, wading birds, raptors, passerines, rodents, furbearers, deer and turkeys utilized Wilderness and Greenlea Bend fields at various times throughout the year.

Co-op farmers are required to fill two grain bins with dry corn for refuge banding operations. In addition corn for banding was provided to Lacassine National Wildlife Refuge.

#### 6. Other Habitats

Although the refuge provides a diversity of wildlife habitat, one of the most important is in short supply. Natural openings in the forest are scarce. In 1986, an Interim Forest Openings Management Plan was completed. A system of small openings, usually less than 1 acre in size and scattered throughout the forest, are being established. Areas such as log loading sites and abandoned oil well locations will be treated periodically with various techniques by prescription to set back succession. The entire process will be

incorporated into the Forest Management Plan when it is developed. In September, several openings on the Judd Brake Unit were mowed and/or disced.

8. Haying

An effort was made to locate an area farmer interested in mowing refuge roadsides in return for haying rights on approximately 20 acres of former pastureland near the new visitor center. The effort was unsuccessful.

9. Fire Management

One wildfire occurred on the Fool River Unit during 1987. The fire was apparently started by a disgruntled hunter. Approximately 8 acres were burned. Although very little damage was caused by the fire, it could have been very serious as the fire was started around several oil wells. One fire unit from the refuge, one from Crystal Oil and a firetruck from the city of Winnsboro responded to the fire due to the potential problems that could have occurred.

During the summer and fall of 1987, two personnel from the refuge were dispatched to assist other agencies with fire suppression. Kelby Ouchley, Assistant Manager, served as a crew member for initial attack on the Seiad/Kelsey Complex fires in northern California from September 26 to October 14, 1987. Larry Moore, Refuge Forester, served as crew member for initial attack on the Sykes Creek fire in southern Oregon from August 31 to September 12, 1987. Larry also served as a crew member during the period November 5 to November 10 for initial attack on several fires around Clayton, Georgia.

The step test was given to refuge personnel which have fire related job activities and red cards issued during 1987.

A new 100 gallon slip-on tanker was received during 1987 to be used for fire suppression activities.

## 10. Pest Control

Approved pesticides are used only on an as-needed basis on refuge crops. In 1987, Pydrin was applied to approximately 100 acres of corn to head off a neighboring chinch bug infestation.

Beaver control activities are discussed in Section G. 15.

## G. WILDLIFE

### 1. Wildlife Diversity

Development of moist-soil units, forest openings, maintenance of rights-of-way and trails, and reforestation efforts provided habitat for many different wildlife species. An increase in avian diversity was especially noticeable in the Wilderness and Greenlea Bend Fields.

### 2. Endangered and/or Threatened Species

The bald eagle and probably the peregrine falcon are the only endangered species which occur fairly regularly on the refuge. The Bachman warbler may be a rare transient. Extinct or endangered species formerly of the area include the red wolf, Florida panther, and ivory-billed woodpecker. Panthers are still reported but their existence has not been verified by biologists. A neighbor reported a panther near the refuge in December and claims to have filmed the cat with his video camera. We have not yet been able to run him down and view the tape. An immature bald eagle was observed near the refuge on January 26. Another immature bird was seen feeding on a deer carcass on March 10. An adult was seen on November 24, and two bald eagles were reported in the Christmas Bird Count on December 30.

Two mounted ivory-billed woodpeckers obtained from Cornell University's Museum of Ornithology and a red wolf and panther were incorporated into the visitor center displays this year.

The black bear has much historical and ecological significance in Louisiana. Considered by many to be the epitome of "wildness" in the swamplands, the bear that once attracted the recognition of Theodore Roosevelt, Ben Lilly, and William Faulkner is again receiving considerable attention. Bottomland habitat destruction and dwindling populations numbers have prompted concern over the fate of the bear in Louisiana. This concern for responsible management has not been without controversy however. Most of the controversy centers around the population and taxonomic status of the black bear in Louisiana.



An abandoned deer stand was found to be chewed and clawed probably by bear. Bears seem to like the creosote treated wood.

TR87-6 JP

A subspecies of the black bear, *Ursus americanus luteolus*, is thought to exist in Louisiana. This subspecies was originally described in 1893 by C. H. Merriam based on measurements of skulls from northeast Louisiana. Most recently this subspecies has been described by Dr. Ron Nowak of the Endangered Species Office in Washington, a renowned expert on large carnivore, through

literature review and examination of many skulls of both U. a. americanus and U. a. luteolus. The historic range of this bear, commonly known as the Louisiana bear, was eastern Texas, all of Louisiana, and southern Mississippi. Its present range is now believed to be confined to Louisiana in the Tensas Basin of northeast Louisiana and the Atchafalaya Basin in south central Louisiana.

From 1964 to 1967, Louisiana Department of Wildlife and Fisheries (LDWF) trapped and transplanted 163 Minnesota black bears into Louisiana in order to increase bear numbers and produce future huntable populations. Thirty-one bears were released into the Tensas River Basin in Madison and Tensas Parishes and 132 were introduced into Point Coupee Parish in the upper Atchafalaya Basin where native bears had long since vanished. It appears that the introduction into the upper Atchafalaya Basin was successful because marked individuals from the release were recovered in the area for several years, reproduction was observed, and some bears established home ranges.

Dr. Nowak believes that the introduction into the Tensas Basin was unsuccessful and no hybridization occurred with the native Louisiana bear. He bases his position on the fact that many of the bears were recovered far from the release area soon after the introduction. He also has examined skulls obtained from the Tensas Basin from the post-release period and claims that they fall within the statistical ranges of U. a. luteolus. He also suggests that the Louisiana bear may still exist in the pure state in the lower Atchafalaya Basin, due to reproductive isolation from the introduced upper Atchafalaya Basin population of Minnesota bears.

The controversy mentioned earlier exists because the LDWF, and more recently the Jackson field office of Endangered Species maintain that the Tensas Basin introduction was successful and that hybridization occurred in Tensas Basin. They believe hybridization also occurred in the Atchafalaya Basin because it is unlikely that the introduced population in the upper basin and native population in the lower basin have remained reproductively isolated over the past 20 years with only 50 miles of suitable habitat separating the two groups. Therefore, they believe that a viable population of pure U. a. luteolus no longer exists in the state, although it is possible some pure individuals may still be surviving.

Dr. Nowak believes that endangered species listing for U. a. luteolus could be warranted based on his taxonomic findings, severely reduced bear habitat, and declining population size. The LDWF and Endangered Species field office oppose listing because it would supposedly do little for the protection of the subspecies if it still exists, recovery plans would not be feasible, and listing of this subspecies would be a low priority in light of other listing proposals. In addition, the LDWF is against any listing action because they feel that the subspecies no longer exists as a viable population, and also because it may interfere with an annual 9 day bear season in parts of the upper Atchafalaya Basin. The LDWF is even considering opening bear seasons in the lower Atchafalaya and Tensas Basin.

These issues have generated considerable public and private interest in the state's bear resource and indeed how it should be managed. Conservation groups such as the Sierra Club and Lafayette Sportsmen Association favor endangered species listing. Others think that bears that occur on private lands in the Tensas Basin should be trapped and relocated to Tensas River NWR. Others think that all bear hunting should stop. Some would like to see more bears introduced into the state. Still others feel that the bears are a nuisance to bees, crops, and a detriment to deer hunting in bear-inhabitated areas.

The upshot of all this clamor has been favorable thus far. Not only has the attention of the public and the federal and state government focused on the bear management issue, but both the U. S. Fish and Wildlife Service and the Louisiana Department of Wildlife and Fisheries have decided to investigate the population and taxonomic status of the black bear in Louisiana. The USFWS and the LDWF have funded research projects for this purpose. The USFWS will study the Tensas River Basin population in and around Tensas River NWR, and LDWF will fund a graduate student through the Louisiana Cooperative Fish and Wildlife Research Unit to gather data from the lower Atchafalaya Basin population.



State Biologist and Bio-tech Williams collect bear scat samples during initial phases of the black bear research study. TR87-7 GC

Dr. Mike Pelton, University of Tennessee Professor of Wildlife and the nation's leading authority on black bear, will act as technical advisor to the USFWS on their bear research project. Dr. Pelton has already offered guidance on the bear bait transect program used by refuge personnel in 1985 and 1986 as an index to bear distribution on the refuge. For details of the objectives and status of the USFWS study please see Section D. 5. "Research and Investigations".

### 3. Waterfowl

It is most gratifying to see the waterfowl population increase from several hundred in 1983 when no active management was conducted to over 90,000 after 4 years of intensive management. Most use occurs in the Greenlea Bend and Wilderness Fields, although for the first year substantial numbers of mallards used the flooded woodlands. Corn production was adequate for wildlife while that of native moist-soil plants was

good but less than in 1986. There is little doubt that the value and waterfowl use of these areas will continue to increase as co-op farming, moist-soil management, and water manipulation techniques are fine tuned. The best is yet to come.



One of the largest concentrations of waterfowl observed to date using the agriculture/moist-soil areas. TR87-8 EAS

On January 6, the Midwinter Waterfowl Survey revealed 30,872 ducks including 21,417 mallards. Except for lingering blue-winged teal and resident woodies, most had departed by mid-March. Small numbers of returning teal were observed first on August 26, on the few sloughs that held water. The deluges of late November filled most sloughs to capacity just in time for the bulk of the migration. The late December estimate of 90,000 included over 60,000 mallards. There appeared to be a definite shift of duck use from the Wilderness Field to Greenlea Bend, perhaps in response to cleaner corn fields.

Wintering woodduck populations increased significantly over the 2 previous "bust" years. Although mast production was moderate there seems to be other unknown factors which drive the dramatic fluctuations. Over 5,000 woodies were counted in the Wilderness Field roost in December. Also for the first year small numbers of geese began wintering on the refuge. As many as 600 snow/blue geese, 300 white-fronts, and 100 Canada geese used the wheat in the Wilderness Field.

#### 4. Marsh and Water Birds

The large Rainey Brake rookery was active again in 1987. Although a survey was not conducted this year, the rookery appeared to be equal in size to that of the previous year when over 1,000 birds were counted in May 1986. Species included cattle egrets, little blue herons, great egrets, yellow-crowned night herons, and anhingas. Great blue herons are common throughout the year. Woodcock and snipe are seen occasionally. Three roseate spoonbills were observed on July 6-7, about one mile north of the refuge on the Scott Property. Extremely rare in this area, some spoonbills are now thought to disperse from coastal nesting sites in mid-summer similar to wood storks.



Rare sighting of Roseate spoonbills was made in early July.

TR87-9 KO

5. Shorebirds, Gulls, Terns, and Allied Species

The Wilderness and Greenlea Bend Fields now provide most of the shorebird habitat on the refuge. Greater yellowlegs and killdeers are the most common of this group. Several species of sandpipers are usually observed during spring and fall migration.

6. Raptors

The red-tailed hawk, red-shouldered hawk, Cooper's hawk, sharp-shinned hawk, broad-winged hawk, American kestrel, barred owl, barn owl, screech owl, great horned owl, and Mississippi kite are common residents or visitors to the refuge. Dr. Robert Hamilton of Louisiana State University has established permanent transects to census owls with mechanically recorded calls. His preliminary work suggests owl populations at densities greater than ever recorded in the literature. The largest raptors found on the refuge are bald and golden eagles which are occasional winter visitors. An immature golden eagle was observed in the Wilderness Field on April 12, and on several occasions near waterfowl concentrations in December. The first returning Mississippi kite was seen on April 12, and the first returning harrier was noted on September 22. The only documented nest of peregrine falcon in Louisiana was found by Roger T. Peterson on lands now in the refuge in 1942.

The establishment of this refuge can be considered significant by its contribution to the welfare of passerine birds alone. The area serves as a critical migration corridor and island in the vast Mississippi delta sea of agriculture. It might be sobering to know how many birds are lost forever with the clearing of a single thousand acre block of bottomland hardwoods.

Louisiana State University ornithologists and refuge personnel are compiling a refuge bird list. To date, over 200 species have been observed on the refuge. The fifth annual Tensas Christmas Bird Count was a success as 14 participants recorded 102 species on December 20, six less than the 1985 record.

## 8. Game Animals

White-tailed deer are the most important game animals on Tensas River NWR in terms of management and recreation. The area is renowned for large numbers of deer. The pre-hunting season population estimate was one deer per 8-10 acres. Prior to acquisition, lands now within the refuge were leased by hunting clubs, most of which had policies against shooting antlerless deer. For this reason, the population contains a disproportionate ratio of adult does. Other symptoms of an unhealthy, overpopulated herd including record high abomasal parasite counts, poor antler development, and low fawn/adult doe ratios were also inherited. Political intervention into the 1984-85 hunting proposals precluded mitigation of these problems. The 1985-86 season, though far from being perfect, was definitely a step in the right direction. The elimination of buck-only hunting was a critical cornerstone in restructuring the dynamics of the herd. The 1986-87 season was improved further with an additional 2 days of general gun hunting. The 1987-88 season was similar.

Tensas River National Wildlife Refuge probably experienced one of the largest big game harvests (per acre) to occur on a national wildlife refuge. Approximately 50,000 acres were hunted and 2,017 deer were known to have been harvested. Data gathered from check stations indicated progress toward a healthier herd particularly on those areas of the refuge that have had either-sex hunts for 5 consecutive years.

The Fool River Unit accounted for the majority of the deer harvest with 1,365 deer being checked (784 during Muzzleloader and 581 during the General Gun hunts). The Judd Brake Unit figures totaled 652 (62 during the Youth Hunt and 590 from the General Gun hunts).

Average live weights of adult bucks increased from 145 pounds in 1983 to 178 pounds this year. Average live weight of fawns increased from 57 pounds in 1983 to 61 pounds in 1987. The percentage of adult bucks with 8 or more antler points increased from 21 percent in 1983 to 37 percent in 1987. The percentage of does in the herd decreased from 69 percent in 1983 to 59 percent this year. In spite of current management, or because of it, things are getting better. Compliments from hunters about improved herd quality and praise for our deer management program are becoming common.



This proud hunter was the envy of every passerby at one of the refuge's deer check stations. TR87-10 KW

Even with this significant improvement, it is likely that large harvests will be necessary for the next 2 to 3 years in the Fool River Unit just to maintain status quo. The deer population's explosive response to extensive timber cutting operations in this area will be difficult to check.

Two statistics that warrant discussion are fawn/adult doe ratio and percentage of  $1\frac{1}{2}$  old males with spike racks. Examination of the harvest data presented in Table 4 reveals that fawn/adult doe ratios decreased from 1.0 in 1986 to 0.69 in 1987, i.e. less fawns were produced per doe in 1987 as compared with 1986. This

data may be misleading because we believe that the reason for this situation is that hunters are consciously selecting against fawns and/or small deer. This is evidenced by the comments of hunters at check stations that they saw small deer (fawns) and did not shoot them, or that they observed a doe and fawns together and shot the largest deer in the group. High deer numbers present on the refuge and the number of deer a hunter has the opportunity to see while hunting, reduces the pressure of having to shoot any deer seen rather than choosing a "better" deer. In addition, greater than 80 percent of the harvested adult does examined at hunter check stations showed evidence of lactation this year. This would indicate that in reality the fawn/adult doe ratio is higher, unless there were widespread pre-hunt fawn mortality of which we have no evidence.

The second harvest statistic that merits discussion is the percentage of 1½ year old males with spike racks. The harvest percentage increased from 68 percent in 1985 and 65 percent in 1986, to 83 percent in 1987. See Table 4 .

Tooth replacement, development, and wear in many of the deer aged in the 1½ year old age class indicated that they were born late in the year (1986). These deer often had antler development (2 spikes just broken through the skin and less than one inch long) typical of an early-born 6 month old deer.

Archers had harvested a total of 282 deer by the close of the 1986-87 refuge bow season in mid-January. The 1987-88 season was off to a good start with approximately 200 deer taken with a bow by the end of December. Most of the deer were harvested on the Fool River Unit where hunter interest is increasing almost as fast as the deer herd. The first fawn was observed in late June.

The turkey trap and transfer from Tensas River NWR to D'Arbonne NWR was not successful this year. Prospective capture sites in the Judd Brake Unit were identified, baited, and armed with rocket nets by Tensas River NWR personnel. D'Arbonne NWR personnel were then called in for the actual netting. Unfortunately no net shots were made due to skiddish birds, and then 7 inches of rain in 14 days put the final damper on the project. Hopefully the scheduled relocation in 1988 will prove more fruitful.

Table 1. Number and (percent) of deer harvested by age class Nov. 21-Dec. 6, 1987.

	$\frac{1}{2}$ Year		$1\frac{1}{2}$ Year		$2\frac{1}{2}$ Year *	
	M	F	M	F	M	F
Judd Brake Unit	59(9)	96(15)	113(17)	71(11)	88(13)	225(35)
Fool River Unit	149(11)	175(13)	170(12)	154(11)	245(18)	472(35)
Total Refuge	208(10)	271(13)	283(14)	225(11)	333(17)	697(35)

\* Deer aged  $2\frac{1}{2}$  years and older were lumped into one category for analysis purposes.

Table 2. Average live weight of deer harvested by age class Nov. 21-Dec. 6, 1987.

	$\frac{1}{2}$ Year		$1\frac{1}{2}$ Year		$2\frac{1}{2}$ Year *	
	M	F	M	F	M	F
Judd Brake Unit	65	57	130	109	182	125
Fool River Unit	63	60	119	103	176	121
Total Refuge	64	59	123	105	178	122

\* Deer aged  $2\frac{1}{2}$  years and older were lumped into one category for analysis purposes.

Table 3. Antler development of checked bucks by age class for deer killed Nov. 21-Dec. 6, 1987.

Points	2	3	4	5	6	7	8	9	10	10
1½ Year	214(83)	20(8)	15(6)	4(2)	3(1)	1(Tr)	2(Tr)			
2½ Year*	22(7)	12(4)	37(11)	15(5)	60(18)	35(11)	121(37)	11(3)	9(3)	3(1)

\* Deer aged 2½ years and older were lumped into one category for analysis purposes.

Table 4. Comparison of Tensas River National Wildlife Refuge deer harvest data 1983-87.

	Deer Kill Per Acre	Acres Hunted	Number Harvested	% Does in Herd	Fawn/Adult Doe Ratio	1½ Year Male w/spike	% 2½ Year* Male w/8 or More Points	Average Live Weight 2½ Year Males*
1983	1/35 acres	17,000	485	69%	0.79	81%	21%	147 lbs.
1984	1/39 acres	36,000	909	64%	0.33	94%	23%	154 lbs.
1985	1/45 acres	50,000	1,109	63%	0.90	68%	26%	162 lbs.
1986	1/28 acres	50,000	1,800	58%	1.0	65%	45%	176 lbs.
1987	1/25 acres	50,000	2,017	59%	0.69	83%	37%	178 lbs.

\* Deer aged 2½ years and older were lumped into one category for analysis purposes.

Gobbler call counts were conducted in early March just prior to the start of the turkey season. Counts indicated fewer calling birds in 1987 than reported in previous years. Spring seemed a week or two later than usual, so this may have affected gobbling. Forty-three gobblers were reported harvested during the month long turkey season. The majority of turkeys were harvested in the Fool River Unit. In the past, the vast majority of birds were killed on the Judd Brake Unit. Hunting effort appears to be increasing on the Fool River Unit for turkey and other species. Total number of visits (720) was consistent with the 1986 season.

The first turkey poults to be observed in 1987 were seen in widely scattered areas on May 19.

Hunter bag surveys indicate that squirrel populations were at a low point in their cycle in 1987 in contrast to the bumper crop in 1985-86. Poor mast crops in 1986 may have contributed to this situation.

Six raccoon field trials (chase only) were conducted on the refuge under Special Use Permit. Delta Coon Hunters Association held weekend PKC trials in January and September, Morehouse Coon Hunters Association conducted PKC chases in March and September, and Turkey Creek Coon Hunters, Inc. held UKC trials in February and March. During the 9 day raccoon season in early February, 222 hunter visits were recorded and the average harvest was 1.3 coons per visit.

Hunting season for rabbits was held in January (with beagles) and in October-November with moderate success reported by hunters. Cottontail and swamp rabbit are both hunted and are in plentiful supply.

Common furbearers are coyote, nutria, muskrat, beaver, bobcat, otter, mink, and gray fox. Beaver numbers continue to increase. Public trapping was not permitted.

#### 10. Other Resident Wildlife

Alligators are common throughout the refuge and representatives of all size classes are observed during warm months. Africa, Judd, Buck, and Rainey Lakes were surveyed during the 1987 Cooperative Alligator Survey. On 5 miles of transects, 8 alligators were observed. This is considerably less than last year's results and likely reflects inactive alligators during the survey period.

Bio-tech Posey completed a refuge reptile and amphibian list.

11. Fisheries Resources

Fisheries Biologist John Forester delivered 5,000 bluegill fingerlings in December to stock the impoundment and refurbished Ridge Lake resulting from installation of the large water/erosion control structure in the Wilderness Field. He also completed the refuge Fisheries Management Plan in 1987.

In April 1986, Rainey Lake was treated with Aquathol K to control coontail. The treatment was immediately effective, although we had doubts as to the longevity of the results. Our apprehensions were allayed as the lake remained nearly free of the vegetation throughout most of 1987.

15. Animal Control

Beaver control is a year round effort in order to contend with the increased activities of nuisance animals on the refuge. Problems caused by beavers on the refuge include: 1) flooding of timber, crops, roads, trails. 2) plugging of drainage culverts, ditches, water control structures. 3) timber girdling. 4) decimation of cypress reproduction. 5) road cave-in due to burrowing activities. Beaver population management on the refuge involves the fine line between having enough beavers to impound water to increase habitat diversity and provide habitat for wintering waterfowl, and yet maintaining the population at a level that does not conflict with accomplishment of refuge objectives.

The beaver population appears to be on the increase, especially in areas recently logged under the Chicago Mill contracts. In an area such as Tensas where the primary drainage pattern is by sheet drainage, any logging debris which hampers the lateral movement of water encourages new beaver impoundments.

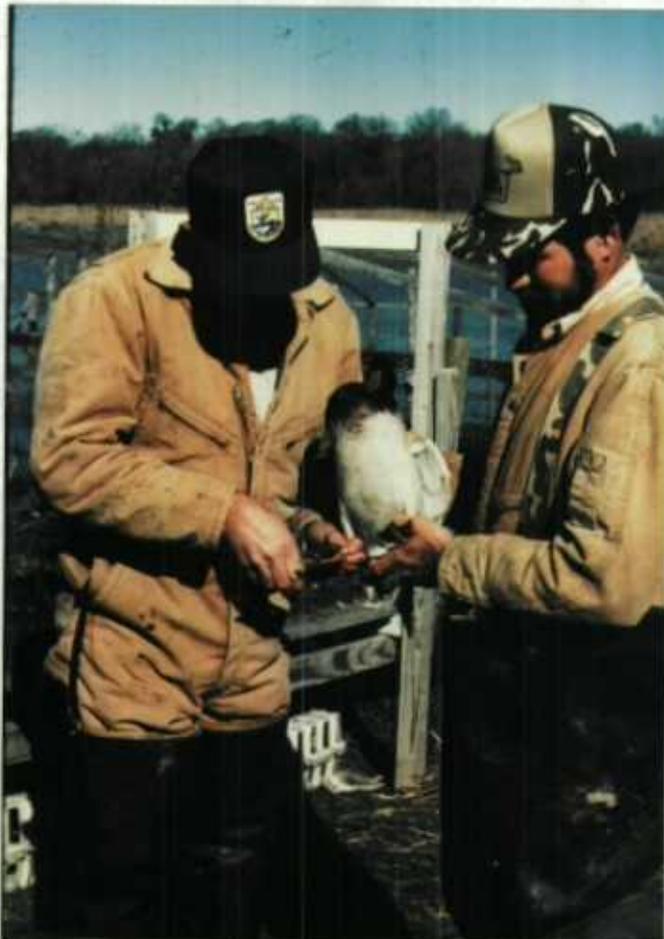
Major control efforts are concentrated on drainage of beaver impounded timber and agricultural units. Most

dams were broken with the use of hand tools, explosives, and bulldozers. Trapping with No. 330 Conibear traps was conducted at dam breaks and lodges to prevent rebuilding of dams during drainage. Over 27 beavers and 15 nutria were moved from these areas.

#### 16. Marking and Banding

For the first time in the history of the refuge, the mallard banding quota was achieved. Banding began at the close of the waterfowl season in late January and continued into February. The post-season quota of 400 mallards was exceeded as 721 mallards, 8 green-winged teal, 3 ring-necks, 2 pintails, and 2 black ducks were banded. Most were captured in the 64' x 64' swim-in trap in the Wilderness Field. This was the first year that water levels were at adequate levels to make this trap operable.

In spite of considerable effort the pre-season wood duck banding quota was not met. Two portable traps were built, set up, and baited. Very few birds were attracted and the sloughs soon dried up. No woodies were banded.



A total of 721 mallards were banded exceeding the 400 post season quota for the first time.

TR87-11 EW

## 17. Disease Prevention and Control

In general, the condition of the refuge deer herd seems to be improving (see Section G. 8 and Table 4). Of particular note is the fact that no deer with sloughing hooves were observed at check stations. This indicator of EHD or bluetongue was noted in about 30 deer in 1985.

### H. PUBLIC USE

#### 1. General

During the year, the refuge was able to make positive progress in developing the public use program. An assistant manager with responsibilities primarily in public use was selected in February. The office/visitor center complex was completed in late July and contributed to the refuge's interpretive program. The addition of the contact station has made information and guidance on refuge programs more accessible to the public. A general refuge brochure was drafted this year and should be printed early in 1988. Hunting and fishing remains the largest public use of the refuge. The gun hunts for deer are attracting more and more hunters from all over the state. Thousands of applications are received each year for the limited deer hunts.

The wet season of the year will be the limiting factor on general public visitation to the refuge. During the wet season, the 12 mile gravel road leading into the visitor center will have deep potholes, flood, or become very muddy sometimes requiring a four-wheel drive vehicle. The problem will continue to exist until federal or state funding becomes available for road construction.

A public use review team visited the refuge during the summer to develop a public use plan. The review was conducted by Dan O'Neal and Richard Mattison from the Regional Office; and Robin Will from St. Marks NWR. Future developments include: a wildlife auto tour, primitive boat launching site, improved parking areas

for hunters, and interpretive pull-over areas along the river. These projects will be completed as funding permits.

Numerous inholdings exist within the boundaries of the refuge. As the refuge came on line, access to these private parcels was allowed on the basis of a handshake. With the increase in popularity of the area and camp development came problems of unauthorized road maintenance and vehicle trespass. For these reasons, efforts were made to issue "access" Special Use Permits to all inholders. Fifteen such permits were implemented in 1987.

## 2. Outdoor Classrooms - Students



The displays received alot of use with each visit from the local school groups.

TR87-12 AO

A formal environmental education packet has not been assembled as to date, but attempts are being made to encourage school groups to visit the refuge. The new facilities provide a rare outdoor educational opportunity for students and civic groups in the local area.



Local boy scout troop considered themselves lucky to help band and release mallards. TR87-13 AO

The refuge offers a view of what most of the land in northeast Louisiana used to resemble. Today, much of the surrounding local community is in agriculture.

The first organized group to utilize the new visitor center consisted of 45 second graders and their teachers from Tallulah Elementray School. The kids viewed a film on the NWRS pushed the audio display buttons 10,000 times, tracked mud all over the building, took a nature hike, cleaned us out of brochures, and ate lunch in the parking lot. We were glad to have them, but we were better prepared for the next batch.

#### 4. Interpretive Foot Trails

The YCC crew constructed a good portion of a 1,200 foot boardwalk wildlife trail located behind the visitor center. The trail is through bottomland hardwood habitat complete with flooding during the wet season. Visitors will eventually follow the trail and end at a 10 foot observation tower looking over an agriculture/moist-soil area. These sites will be flooded in the winter attracting thousands of ducks for our visitors to see. Interpretive panels will be installed along the trail and at the tower explaining topics such as bottomland hardwood habitats and migratory waterfowl.



The first elementary class stops along the boardwalk to look, listen and point upon command from the photographer.

TR87-14 EAS

6. Interpretive Exhibits/Demonstrations

Marvin and Lee Cook of Wilderness Graphics in Tallahassee, Florida installed the exhibits in the new visitor center facility. The main display topics were bottomland hardwoods, a rookery, moist-soil impoundment areas, and endangered species. Wilderness Graphics completed the installation in about three weeks during the early summer.

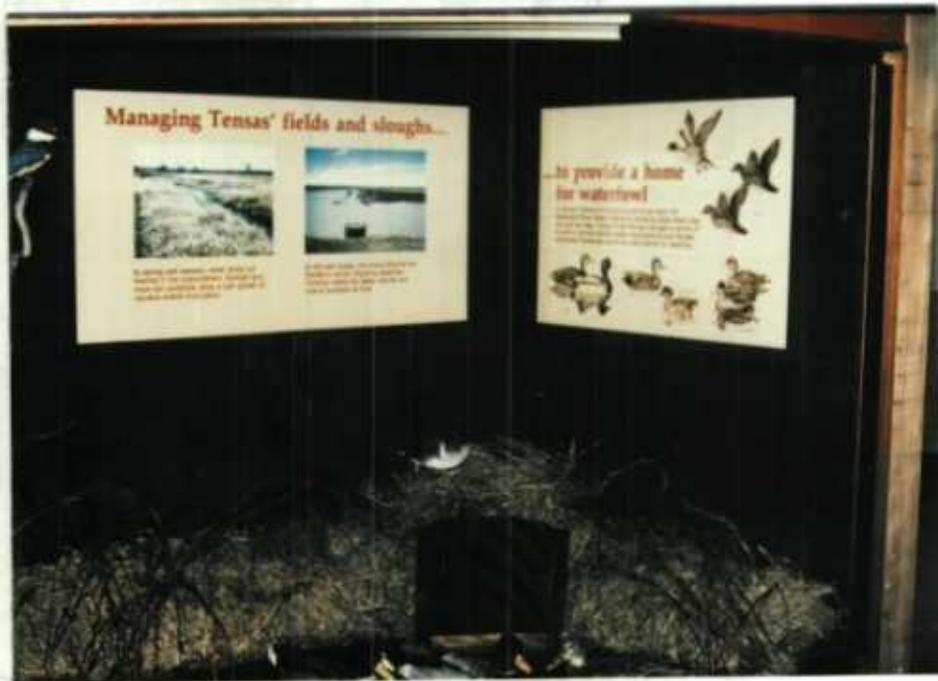


A Wilderness Graphics employee installs the framework for the visitor center rookery display. TR87-15 EAS



TR87-16 EAS

The completed bottomland hardwood display is full of wildlife specimens, such as the black bear, wild turkey, barred owl, and water moccasin.



The waterfowl diorama discuss the objectives and operations of the refuge's moist-soil agriculture areas.

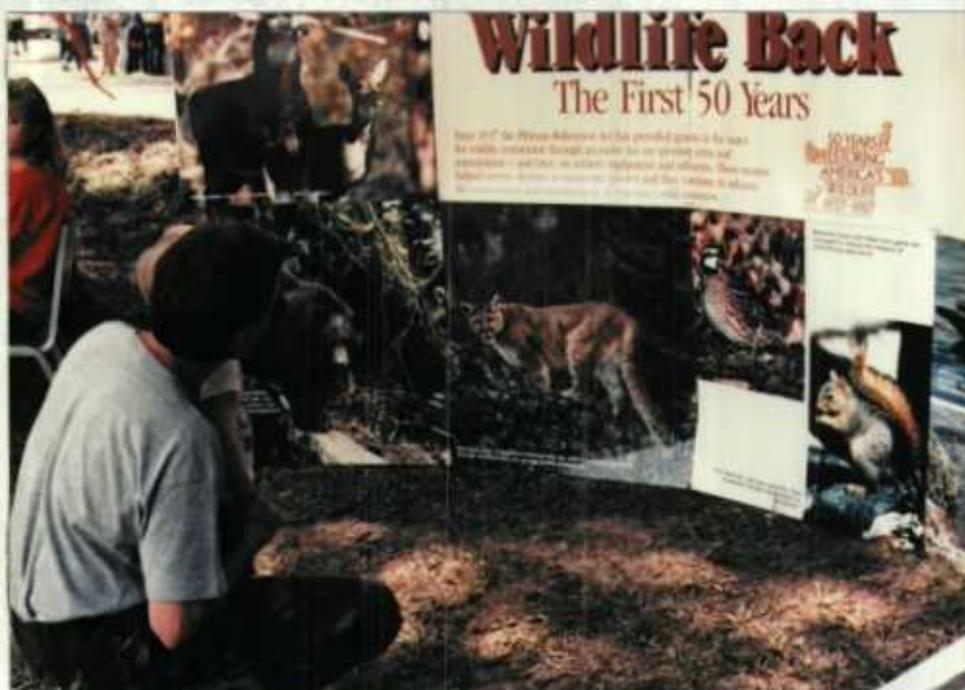
TR87-17 EAS

The life sized exhibits and dioramas have been described as being of the highest quality in Region 4. Once the facilities were complete, news traveled throughout the local area and visitors came to the refuge. In the fall, hunting season commenced and visiting hunters with families toured the center with real interest. The majority of the visits were during the hunt season and the center was open on the weekends. Several school groups from the local area toured the center and viewed refuge films in the auditorium. Heavy visitation during next spring is hoped for and the center will be open again seven days a week.

#### 7. Other Interpretive Programs

Throughout the year, several interpretive talks were presented to local civic groups. An update on the refuge development, hunting and fishing regulations and completed work projects were some of the topics covered. In October, requests were made for specific presentations and refuge personnel provided the information. Assistant Manager Ouchley and Forester Moore gave a wildlife tour and hosted a barbecue dinner for the Louisiana Forestry Association. Assistant Manager Ouchley also gave a presentation to the Louisiana Chapter of the Wildlife Society's fall meeting on the wetlands management on Tensas River NWR. Assistant Manager Sauselein and Maintenance Worker Cobb attended the Louisiana Bowhunters Association semi-annual meeting to answer questions concerning refuge hunts and locations of the trophy bucks. Assistant Manager Sauselein also was requested to attend meetings on a public tourism committee. The goal of the tourism group was to increase public visitation in Madison Parish with an emphasis on the refuge. Presently, a building in Tallulah has been acquired to serve as a visitor contact station directing folks to local attractions such as the refuge.

National Hunting and Fishing Day was held in Monore and the refuge was represented by Assistant Manager Sauselein and Bio-Tech Williams. A new display representing the 50th Anniversary of Pittman-Robertson Act was used during the day long event and received many compliments. The event was attended by well over 2,000 people.



Several people attending National Hunting and Fishing Day complimented the new display honoring the 50th Anniversary of Pittman-Robertson.

TR87-18 EAS

## 8. Hunting

Hunting in the Texas swamps has long been regarded as ranking with the best anywhere. Until establishment of the refuge only members and guests of private hunting clubs were privileged to hunt the area. There is substantial interest in the public hunts.

In 1984, a controversy with Louisiana Department of Wildlife and Fisheries surfaced over refuge deer hunts. LDWF was adamantly opposed to limiting hunter numbers by permits issued via a public drawing (for reasons still unclear). Politics prevailed and hunts contrary in nature to sound wildlife and people management were conducted. Since this time Region has taken a firm stance on the Service's right to administer hunts as deemed appropriate and the situation has improved considerably. Hunts are now by limited permit.

The annual hunt meeting with the Louisiana Department of Wildlife and Fisheries was held on February 25, at Sherburne Wildlife Management Area following a day of inhouse meetings in Baton Rouge. Hopes for progress on the longstanding deer hunt controversy were dashed as the State refused to concur on our requested hunt dates. The bottom line continues to be the State's opposition to limited quota hunts. The following deer seasons were set:

Youth Hunt - Judd Brake Unit only. Either-sex.  
November 21-22

Muzzleloader Hunt - Fool River Unit only. Either-sex.  
November 21-24

General Gun Hunt - Limited pre-application type permit.  
Refuge Wide. Either-sex. For  
purpose of drawing, consists of two  
hunts. (1) November 27-28, and  
(2) December 5-6

A total 9,964 permit applications for the general gun hunts were received by the deadline of September 28. This exceeded the previous year's figures by over 2,000. Trey Nelson, an aide of Congressman Huckaby, conducted the drawing with assistance from the refuge staff. A total 5,000 permits (2,500 for each of two hunts) was drawn, processed and mailed.

Participation in the Youth Hunt was good as 300 visits were recorded and 62 deer harvested. There was some confusion associated with minimum hunting age and hunter safety course requirements. Minimum hunting age was 8 and although in adjacent Mississippi youths could be certified at that age, Louisiana minimum age for certification was 10. Interest in the muzzleloader hunt continues to grow rapidly as 3,750 visits were recorded in four days. The increasing popularity of this hunt will predicate changes either by issuing limited permits or juggling hunt dates to maintain management and safety objectives. This hunt continued to be particularly valuable as a publicly accepted tool to harvest antlerless deer. Blackpowder hunters checked 784 deer.

An estimated 5,000 hunter visits occurred during the four days of the general gun hunts. During these hunts 1,171 deer were checked.

The estimated number of bowhunter visits was 3,500 and the estimated harvest 200-250 deer.

Turkey season was concurrent with the State season, March 21 through April 19. Although the total numbers of visits, 720, remained about the same as in 1986, the harvest was down slightly from 57 to 43 gobblers reported.

Squirrel and rabbit season ran October 3 through November 18. Squirrel populations, in response to last year's poor mast crop, and hunter success were low. Rabbits were taken incidentally by squirrel hunters at this time. A later rabbit season, allowing the use of beagles was held January 19-February 1. A raccoon hunt was held February 2-10. Participation in both hunts was moderate.

Waterfowl season ran concurrent with the State season on Tuesdays, Thursdays, Saturdays and Sundays until noon except closed on gun deer hunt days. Only that part of the refuge west of the Tensas River in the Judd Brake Unit and east of the river in the Fool River Unit was open for hunting. Participation is growing as Lake Nick and Lost/Judd Brake continue to be the most popular hunting areas.

Daily permits formerly required of all hunters (except those with quota permits for the general gun deer hunts) were eliminated for the 1987-88 seasons. They were initially required to gather baseline data for this new refuge. A new Hunter Bag Report system was instituted for bowhunters and turkey hunters. Successful participants in these hunts are required to complete and submit a bag report card with each kill. Manned check stations are still operated during all gun deer hunts.

The number of violations observed during the 1987 hunts were up slightly over the previous year. Although the "routine" violations are decreasing due to the public's increasing familiarity with refuge regulations, we are just beginning to get a handle on the more hard-case violators.

In general, the hunts went smoothly with no major problems and numerous comments and letters expressing satisfaction and appreciation were received.

9. Fishing

Sport fishing was open year-round on Africa, Judd, Buck and Rainey Lakes. The remaining of refuge waters was open to fishing March 1-October 31. Fishing success for bream, crappie, and bass was excellent throughout the spring and early summer. Participation was light.

10. Trapping

Trapping was prohibited on the refuge in 1987. There has been little pressure to open the area to trapping.

11. Wildlife Observation

The wildlife boardwalk trail and roads throughout the refuge offer the best opportunities to observe wildlife. Deer, hawks, owls, alligators, and many songbirds can be seen readily along the roadsides.

As additional lookout points along the river, improved parking areas, and primitive trails are developed, visitors can enjoy more opportunities.

12. Other Wildlife Oriented Recreation

The demand for chase-only coon dog trails continued in 1987. Six were conducted under Special Use Permit during the year. To eliminate conflicts with other activities and refuge objectives, the following guidelines were developed:

## SPECIAL CONDITIONS FOR CHASE ONLY RACCOON HUNTS

ON

## TENSAS RIVER NATIONAL WILDLIFE REFUGE

1. Sponsoring clubs must be fully sanctioned by UKC or PCA.
2. Each club may conduct a maximum of two hunts per calendar year on the refuge, maximum of 2 nights per hunt.
3. No hunts will be conducted June 15-August 15 or during any gun deer hunts. Other time restrictions may apply.
4. Requests for hunts must be received in the refuge office in writing 14 days prior to the hunt date.
5. No firearms of any type are allowed on the refuge during the hunt.
6. All vehicles are restricted to main gravel roads. No ATVs are permitted during hunts.
7. Injury and/or destruction of any plant or animal (including raccoon) life is prohibited.
8. Littering and fires are strictly prohibited. All signs, markers, etc. must be removed from the refuge within 24 hours of the close of the hunt.
9. Horses and mules are prohibited.
10. Permit fees may be assessed.

15. Off-Road Vehicling

All terrain vehicles (ATVs) are restricted to designated trails. Such trails are further limited to those vehicles with maximum normal tire pressure of 5 pounds p.s.i. The trails were established primarily to allow for an adequate deer harvest in the inaccessible areas of the refuge. All trail entrances were marked with new signs informing the public of the restrictions for ATV use. During major hunts, ATV use is high and damage to some trails extreme. Although several cases of ATV trespass are made each year, compliance is at acceptable levels. During the summer, dozer work was performed to fill in the badly worn areas of the trails caused from 1986-87 hunt season. A draft ATV Management Plan was completed this year.

17. Law Enforcement

Major law enforcement activities occur in the fall and winter, and are associated with refuge hunts. Although some problems are persistent the number of violations are not out of line with the amount of public use. Refuge officers from other stations provided critical assistance during major hunts. Tensas River Refuge officers assisted Special Agents in the area during dove and waterfowl seasons. All cases are handled in the U.S. Magistrate's Court in Monore. The following violations were noted in 1987 and January 1988:

Hunting without permit	10
Hunting in closed area	2
Vehicle trespass	3
Hunting without hunter orange	3
Exceeding field possession limit of ducks	5
Taking doves with aid of motor vehicle	2
Shooting from a public road	2
Taking ducks after legal shooting hours	4
Hunting ducks in closed season	2
Taking doves with bait	6
Hunting deer over bait	3
Hunting waterfowl w/o Migratory Bird Stamp	1
Hunting without State license	2
Trespass in closed area	2
Theft of Government property	1
	<u>48</u>

Penalties for those cases processed to date ranged to several hundred dollar fines, probation and community service work. Three off-refuge duck hunters were caught in the field with 47 ducks. A court date has not yet been set for these folks.

All refuge officers attended law enforcement refresher training at Quincy, Florida, and completed semi-annual firearms requalification in Jackson, Mississippi.

## I. EQUIPMENT AND FACILITIES

### 1. New Construction

The 1984 add on funding allowed for major construction of an office/visitor center, maintenance facility, and bridge. Work on all three projects was initiated in 1986 and completed in 1987.



TR87-19 TS

The newly completed office/visitor center.

The office/visitor center was essentially completed in 1986, however, it was not accepted and occupied until March 1987. The final contract price, after modifications, was \$643,511.20. The quality of the workmanship in the building was good and we have been satisfied except for a few items yet to be worked out. The water system was added after the building and the water tends to have a very unpleasant odor, especially the hot water. Also, we are experiencing a few problems with the operation of the sewage treatment system.

The maintenance facility, which includes a shop, fueling facility and pole shed was completed and accepted in October. There are few complaints about this facility since Assistant Manager Ouchley visited several refuges and combined the best features of their shops in the design of ours. The only serious complaint is the lack of head room in the storage area above the shop office. Total cost of the maintenance facility was \$508,263.



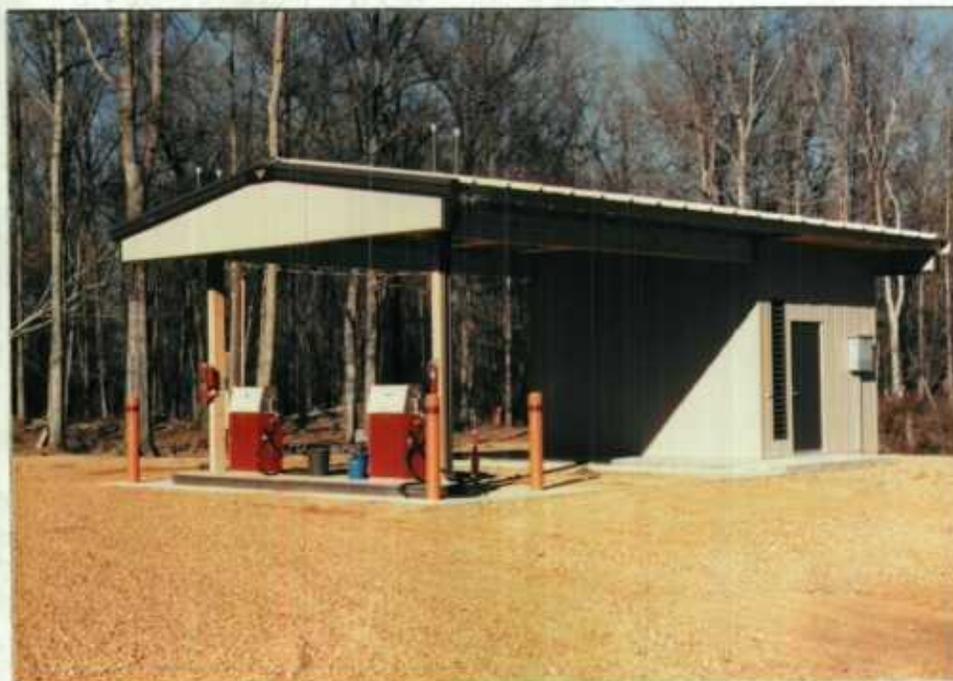
Concrete being poured for the floor to the shop building.

TR87-20 EAS



TR87-21 EAS

The shop building was completed in December and eagerly occupied by our maintenance crew.



The fuel building was a tremendous improvement over our past use of external overhead fuel tanks.

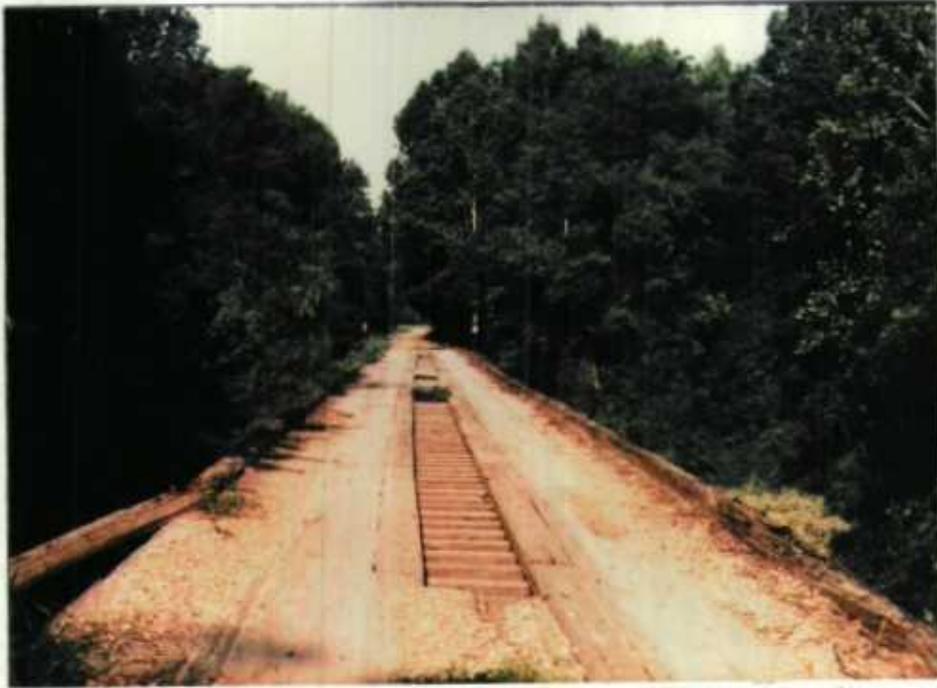
TR87-22 EAS



The new pole shed was quickly filled upon completion.

TR87-23 EAS

The new bridge over the Tensas River near the maintenance facility was also completed in August of this year and opened to traffic. This alleviated a serious safety problem with the old bridge. By force account, the refuge staff will realign the road approach on the east end of the bridge. It would have been completed in 1987, except that the money could not be released due to an exception filed by the contractor. Total cost of the bridge was \$362,532.82.



TR87-24 TS

The old bridge crossing the Tensas River was in desperate need of replacement.



The new bridge completed in August provided a much safer crossing of the Tensas River.

TR87-25 EAS

Marvin and Lee Cook of Wilderness Graphics, Inc. completed installation of exhibits in the visitor center. Dan O'Neal and Frank Podriznik conducted the final inspection on August 6. The exhibits have been described as being of the highest quality in Region 4. Total cost of the contract was \$119,000.

In June, with the start-up of YCC, work began on a 1,200 foot boardwalk behind the visitor center. Wet weather halted work in the fall. This is discussed further in Section E. 2.

James Braswell and Associates, LTD. began work in January on surveying 26 miles of refuge boundary. They submitted their finished maps in July. Corners were established and marked as required in the Service Realty Manual. Talbert Williams worked with them on marking the boundary to become familiar with the boundary changes. Total contract price was \$42,226.88.

A significant force account construction project was completed with installation of large water control structures in the Wilderness Field. The project, aimed at curtailing massive erosion, included placement of five structures, the largest of which was 110 feet long with a 30 feet high riser. Yazoo NWR loaned us a dragline and Mike Wells came down from Big Lake NWR to operate it. Enough can't be said of the dedication and effort of the Tensas crew when tackling such a challenging project. Cost of the structures was \$10,019.



Massive erosion was occurring in one of our moist-soil/agriculture areas.

TR87-26 KO



Installation of one of five structures used  
in the erosion control project. TR87-27 KO



Nearly completed erosion control project will  
prevent further habitat loss and provide a  
new deep water wetland. TR87-28 KO

Yazoo refuge transferred a radio tower to us to be used at the new office. It was erected in April.

## 2. Rehabilitation

In April, approximately \$5,000 worth of pit run and washed gravel was placed in the worst holes in the road to the office/visitor center. In September, work began on rehabilitation of Mill Road and Rainey Lake Road. Work was done by Rod Cobb and Sam Hunter utilizing \$30,000 of pit run and washed gravel. This proved to be an insufficient amount once again.

Also in September, several ATV trails were rehabilitated by filling holes and placing 16" pipe culverts where needed.

## 4. Equipment Utilization and Replacement

A new chevrolet S-10, 4x4 club was received on March 18.

A backhoe attachment deemed unsafe by the Service was transferred to the State of Oklahoma in March.

D'Arbonne NWR borrowed our TD-20 dozer and Felsenthal NWR borrowed the acorn planter in May.

In June, a new 100 gallon slip-on pumper unit and a trailer to haul it were received. In July, audio-visual equipment including 2 projectors, dissolve unit, and slide cabinet were received.

Two Yamaha ATVs were received during September.

A new Massey-Ferguson agricultural tractor was received in November. It has dual wheels and an air-conditioned cab. Almost the entire staff immediately volunteered to operate it.

In December, we received our locally-built wood heater for the shop. It was constructed from a length of 36" pipe and has an automatic blower. We also picked up our new camcorder in December.

5. Communications Systems

In addition to the new base radio tower at the office, we also installed mobile radios in new vehicles as needed.

Madison Parish furnished us with a four channel sheriff's radio for use in a refuge vehicle.

6. Computer Systems

A new computer was ordered for the refuge in September. By December, we had the printer and all the software but it appears that the computer order fell through. These machines seem to be awfully difficult to obtain.

8. Other

In June when the first electric bill was received for the new office it seemed that someone miscalculated as it was about double the projected amount. The contractor and electricians claimed such usage to be impossible. There was much discussion among all parties concerned. Finally, in September, the power company sent an employee to put a test meter on the system to check usage. He immediately found that the electric meter originally installed by the utility company was wired incorrectly. In fact, the wiring caused the meter to double the usage. The utility company was very cooperative and allowed us credit on all past bills.

J. OTHER ITEMS

1. Cooperative Programs

The Louisiana Department of Wildlife and Fisheries requested the use of refuge facilities to conduct the Hunter Education Safety Course. Youth hunting on the refuge serves as an incentive for local youths to be certified. Two classes were held at the refuge and over 60 youths were certified for the 1987-88 hunt season.

2. Other Economic Uses

The Government owns no mineral rights on Tensas River NWR and an extensive producing oil and gas field exists on the Fool River Unit. Two companies, Fina and Crystal Oil, operate on the refuge. In 1986, both companies completed their first year of operation under the refuge's Special Use "Production" Permit. With some minor exceptions, all terms of the permit were met and compliance was acceptable. The permits were renewed in October.

Although both companies are fairly reliable and conscientious, oil and gas activities on this refuge require constant monitoring. The following spills occurred during the year, half as many occurrences as in the previous year.

- 04/02 - 15 barrels crude oil spill at Crystal's D-3 well; excess sand abraded fittings.
- 09/03 - 50 lbs. saltwater spill at Newlight Field.
- 05/10 - oil well blew out at Newlight Field.

A Special Use Permit was also issued to Jordan, Kaiser and Sessions to survey a well location and layout a rig facility.

#### 4. Credits

This narrative is attributed to the following personnel:

- George - Sections E. 5; I and K.
- Kelby - Sections A; C; D. 1-4, 6; E. 7-8;  
F. 1-2, 4-8; G. 1-6, 10-12, 16-17;  
H. 8-10, 17; J. 4. and editing.
- Elizabeth - Sections E. 1-4, 6; H. 1-7, 11-12,  
15; J. 1-2.
- Larry - Sections F. 3, 9; G. 15.
- Keith - Sections B; D.5; G. 2,8.
- Tina - Typing and assembly.

#### K. FEEDBACK

I arrived here in mid-September, but I was familiar with most of the staff at Tensas River since I had worked several details here in the past years. The crew had a reputation for being real go-getters; however, they are even better than I had heard. It is a real pleasure to work with them.

The crew at Mississippi Sandhill Crane, where I just left, was also outstanding and I know other managers in the Region who feel the same way about their staff.

It gives me a great deal of pride to work with an organization so "chock-full" of outstanding individuals.