Review and Approvals

NORTH LOUISIANA REFUGES COMPLEX

FARMERVILLE, LOUISIANA

ANNUAL NARRATIVE REPORT

CALENDAR YEAR 1997

Ken Butts 3/16/98
PROJECT LEADER DATE

3/18/98
DISTRICT MANAGER DATE

ARD-REFUGES & WILDLIFE DATE

Columbus H. Brown 3/23/98
GARD - CLUSTER 1 DATE

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INTRODUCTION

D'Arbonne National Wildlife Refuge was established on May 19, 1975 in mitigation for the Ouachita and Black Rivers Navigation Project (U.S. Army Corps of Engineers). It encompasses 17,421 acres and is located in northeastern Louisiana (Ouachita and Union Parishes), approximately 23 miles south of the Arkansas border and 5 miles north of West Monroe, LA. This area marks the beginning of the floodplain of the Mississippi River (western edge) and its tributaries. Eight miles long and averaging 4 miles wide, the refuge consists of bottomland hardwood forest (10,286 acres), upland forest (3,000 acres), cleared bottomland (2,000 acres), and permanent water area (2,135 acres).

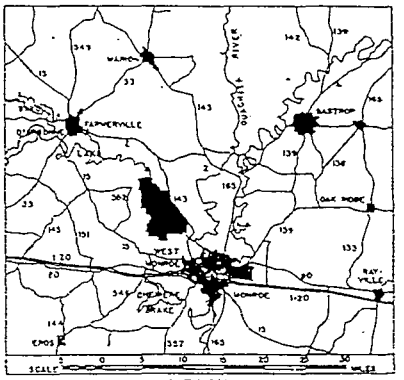
The central physical feature is the Bayou D'Arbonne, 13 miles of which lie within refuge boundaries. The Bayou meanders through a 2-4 mile wide floodplain characterized by alluvial soils deposited during the last several thousand years. Its elevation ranges from approximately 49 feet MSL to 70 feet MSL. Surrounding bluffs and hills rise to elevations as high as 170 feet MSL.

The permanent water area on the refuge includes oxbow lakes, side channels of Bayou D'Arbonne, and that part of the bottomland flooded on a year-round basis. This flooding results from backwater from the Columbia Lock and Dam on the Ouachita River, which is maintained by the U.S. Army Corps of Engineers. The level of the permanent pool has been maintained at 52 feet MSL. Levels exceeding this are normally the result of precipitation in the upper Ouachita River basin, usually occurring from January through May. However, high water levels may occur at other times of the year, depending on rainfall. They may rise as high as 82 feet MSL, which inundates approximately 87% of the refuge. This prevalent and dramatic change in water level imposes quite a challenge to refuge management activities.

The complex variety of environments on D'Arbonne NWR provide excellent habitat for a diversity of migratory birds and resident wildlife species -- the purpose for establishment of the refuge. Other objectives include: preserve bottomland hardwoods and provide wintering habitat for migratory waterfowl; provide habitat and protection for endangered species (red-cockaded woodpecker and bald eagle); provide opportunities for environmental education, interpretation, and wildlife-oriented recreation.

The refuge office is located six miles north of West Monroe on the refuge. The Upper Ouachita NWR, located 21 miles to the north, is also managed from this office.

D'ARBONNE NATIONAL WILDLIFE REFUGE



LEGEND

- REFUGE BOUNDARY
- STATE AND PARISH MAINTAINED ROADS
- IMPROVED REFUGE ROADS
- TRAILS
- GAS LINES
- PARISH LINE
- POWER LINES
- IMPOUNDED WATER
- PERENNIAL STREAM
- INTERMITTENT STREAM
- O OPEN LAND
- B Boat landing
- S Storage
- M Maintenance
- T Tower

PARISH ROAD 8812
PARISH ROAD 8806
PARISH ROAD 8802
ROCKY BRANCH
JONES LAKE
BAYOU D'ARBONNE
Jones Brake
Deep Well Rd.
Round Brake
LAKE DRAIN SLOUGH
Long Slough
Possaw Brake
Pine Woods
R C L W
Bob Field Road
5589
TO POINT
5588
Lake Drain Rd.
Carter Sl.
Big Cypress Slough
Long Sl.
IMC
S
Lick Branch
PARISH ROAD 5316
Rufus Creek
EAGLE LINE
Big Spring Slough
Holland's Bluff Road
Pipeline
Three Branch Ridge
PARISH ROAD 5314
PARISH ROAD 5315
Fee Slough
Southern Nat. Gas
Woodpecker Road
UNION PARISH/OUACHITA PARISH
RCW
MSMA
5506
TO WILLHITE
Saline Creek
LP&L
Good Land
Dog Pen
Mossy Brake
Duck Hole
CROSS BAYOU
PARISH ROAD 5506
Wolf Brake
Cross Bayou
Beanfield
Bald Prairie
Eagle Nest Rd.
Boggy Slough
Ducoe Slough
Pine Island
BAYOU CHOUDANT
Long Reach
Dry Slough
Cole's Point
Walnut Ridge
Mud Ridge
D'Arbonne Bayou
HWY 143
White's Ferry Rd.
TO WEST MONROE

UNITED STATES DEPARTMENT OF THE INTERIOR
UNITED STATES FISH AND WILDLIFE SERVICE

0 1/8 1/4 1/2 3/4 1 MILES
0 10 20 40 60 80 CHAINS

MAP COMPLETED JANUARY, 1980

HIGHLIGHTS

1. Beanfield in excellent condition.

2. State plugs and abandons gas wells.

3. Mercury contamination cleanup complete.

CLIMATIC CONDITIONS

Temperatures in northeastern Louisiana normally range between 20 and 70 degrees Fahrenheit in the winter and between 70 and 95 degrees during the summer. Mean annual precipitation is slightly more than 50 inches. The wettest months are February through April; the driest are August through October. Snowfall and ice storms are uncommon occurrences. Winter storm conditions on January 13 resulted in administrative leave for some employees. Nearly 2 inches of snow fell overnight on December 14, but melted by noon. A low of 12 degrees was noted in January and a high of 103 occurred in August.

1997 began and ended wet. Nearly 10 inches of rain in January created ideal waterfowl habitat. Annual precipitation was more than 20 inches above normal. Precipitation was recorded at the office. Other weather data were obtained from the Climatic Research Station, Northeast Louisiana University, Monroe, Louisiana.

Month	Temperature (deg. F)		Precipitation (inches)	
	Hi	Lo	1997	Avg.
January	81	12	9.74	4.94
February	78	32	8.91	4.54
March	87	36	6.71	5.22
April	87	36	9.06	5.03
May	91	48	5.47	5.14
June	96	60	2.36	3.33
July	102	65	3.22	4.64
August	103	61	3.25	2.60
September	96	54	1.91	3.42
October	91	34	6.71	2.37
November	78	23	4.72	3.98
December	74	32	8.23	4.96
		TOTAL	70.29	50.17

Listed below are the river stages for Monroe, LA.

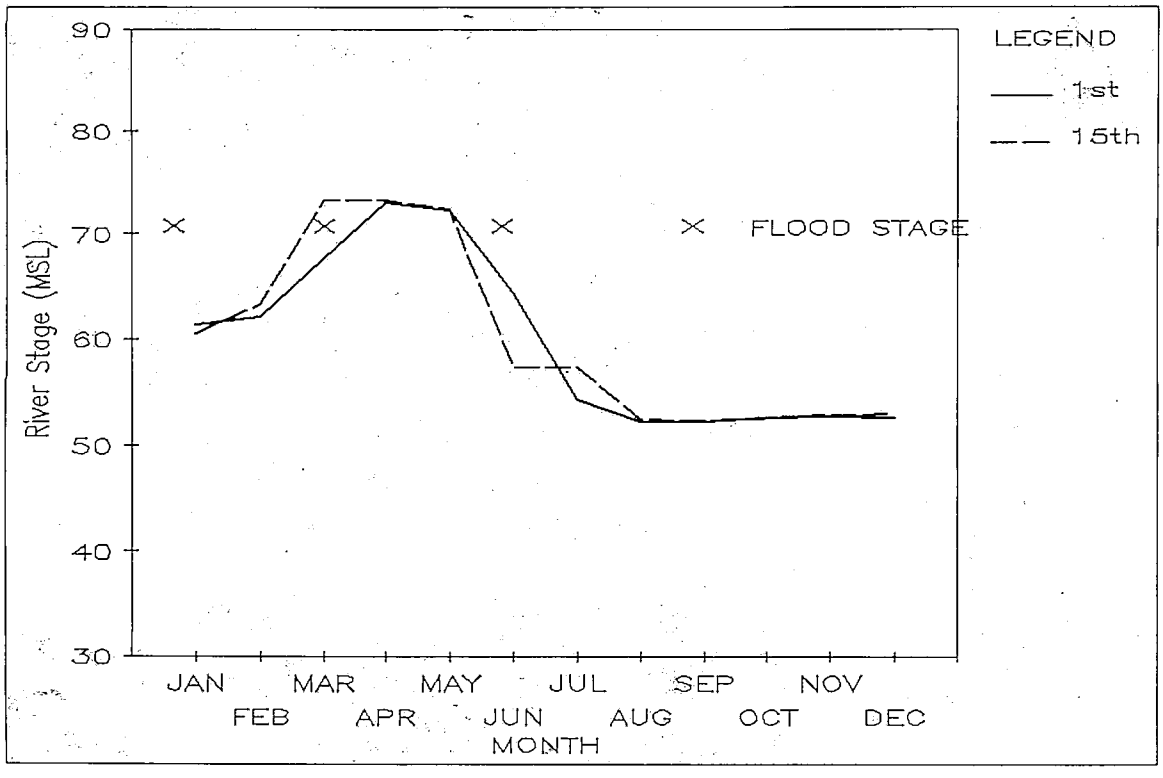


Figure 1. Ouachita River Stages for Monroe, La.

MONITORING AND STUDIES

1a. Surveys and Censuses

Winter presence and distribution of waterfowl on the refuge seems to depend primarily on water levels. Low levels favor dabblers because off-refuge agricultural lands and higher areas are dry, causing them to seek the permanently flooded areas and low, flooded moist soil areas on the refuge. As water levels rise and the shallow backwater moves into forest, mallards and other dabblers begin using the flooded bottomlands more. As open water becomes more deeply flooded, diving ducks are attracted until an excessive water depth is reached.

Budget and manpower limitations prevented regular aerial or ground surveys (usually conducted on a weekly basis). Water levels were ideal early in the year and waterfowl used the refuge's flooded forests extensively. In the fall, duck numbers slowly increased to 60,000 in the Beanfield, the primary moist soil management area. With mild temperatures, most waterfowl remained farther north. The relatively small numbers of birds that ventured this far south were widely dispersed on the plentiful surface water across Northeast Louisiana. When backwaters flooded the Beanfield late in December, waterfowl there dispersed into flooded refuge forest. Because of the mild weather, the normal influx of migrants didn't occur. As a result, in spite of fair acorn production and ideal water levels, refuge waterfowl numbers were lower than normal.

The mid-winter waterfowl survey covered three parishes. The results are listed below.

	Ducks	Geese	Coots
D'Arbonne NWR	400	0	0
Upper Ouachita/Mollicy	47,500	15,000	300
Burress/King*	15,100	0	0
Lake D'Arbonne **	3,100	0	50

* LA WMD tract
** Lake upstream of the refuge

The mid-winter bald eagle survey was flown in conjunction with the waterfowl survey. Four eagles were seen on Mollicy Farms adjacent to Upper Ouachita NWR. Although two eagles were seen frequently on D'Arbonne NWR, they were not observed during the survey.

The double-crested cormorant population continues to increase. During the winter months, the refuge hosts about 2,000. While we don't get as many calls from irate catfish and minnow farmers as we used to, this is probably because they now know to call the Animal Damage Control Office. The farmers aren't happy that these birds fatten themselves in the farmers' fish ponds.

White pelicans stop over occasionally during their fall and spring migrations. Great blue herons, little blue herons, great egrets, and wood storks are common, especially during the summer, after the nesting period. No rookeries are known to occur on the refuge. These birds normally are dispersed on wooded brakes, and sloughs. However, when the Beanfield is dewatered, approximately 8,000 wading birds congregate there to feed on fish and crayfish.

Because of deep flooding of their preferred habitat, shorebird use is low. However, with the installation of the Beanfield pump, summer/early fall flooding of a portion of the field is possible. The wet summer prevented the disking necessary to provide significant shorebird habitat. With tall moist soil vegetation dominating, the area was not attractive to shorebirds. Even so, killdeer and sandpipers were commonly seen in the field. Most shorebird use occurs from May through July and is usually restricted to the Beanfield.

The refuge hosts a variety of birds of prey. American kestrel, red-tailed hawk, red-shouldered hawk, barred owl, great horned owl, screech owl, and turkey and black vultures are all common sights throughout the year. On occasions an osprey ventures onto the refuge.

Twenty-four point count plots have been established to monitor the relative abundance and composition of avian species in various refuge habitat types. A volunteer birder and staff surveyed the plots. A total of 450 individuals of 45 species was recorded during the sampling period.

Quail are present but their habitat is patchy and as a result, numbers are not high. The refuge hosts an estimated 12 coveys.

The annual gobbler survey was conducted on April 4 and two birds were heard on the refuge. An additional four turkeys were heard by State biologist adjacent to the refuge. While this number is considerably less than previous years, less than ideal weather conditions may have contributed to the low numbers heard.

Data gathered from deer taken during the refuge gun season indicate the herd was in about the same condition as last year and doing well. Average yearling buck live weights dropped slightly to 123 lbs. The yearling spike rate was 48% with adult does having a 65% lactation rate. Several nice bucks were taken during the hunt; the largest being a 190 lb. ten point. No sign of disease was evident from the external appearance of the deer. Listed below is the data for the 99 deer brought into three check stations and the data from the past ten years.

		No. Checked	% of Class	% of Total Harvest	Average Live Weight
6 months					
	male	18	66%	18.0%	47.0
	female	9	34%	9.0%	58.0
Total		27		27.0%	
1 ½ year					
	male	29	72%	29.0%	123.0
	female	11	28%	11.0%	85.0
Total		40		40.0%	
Over 1 ½ years					
	male	12	38%	12.0%	144.0
	female	20	62%	20.0%	102.0
Total		32		32.0%	

COMPARISON OF D'ARBONNE NWR DEER GUN HARVEST DATA 1988-1997

YEAR	NUMBER CHECKED	%DOES IN HARVEST	%11/2 YEAR MALE W/SPIKE	AVERAGE LIVE WEIGHT 1 ½ YEAR MALES
1988	14	37	100	85
1989	47	65	89	122
1990	20	55	0	105
1991	64	41	53	110
1992	74	54	18	131
1993	53	40	41	105
1994	69	45	50	116
1995	69	48	82	107
1996	55	47	45	130
1997	99	40	48	123

The annual Christmas bird count was held on December 27. Fifteen local birders recorded 98 species and 16,225 individuals.

1b. Studies and Investigations

A research project on cross-fostering red-cockaded woodpeckers (RCW) to maintain genetic diversity was initiated. Monica Wallace, a graduate student from Northeast LA University, is heading up the project. The study involved three timber companies and two national wildlife refuges, D'Arbonne and Felsenthal. Plum Creek, Georgia-Pacific, and Potlach Timber Companies allowed us to monitor and exchange nestlings from their groups. One major obstacle was encountered early on. Flying squirrels proved to be a much bigger competitor/predator than we had realized. A removal program resulted in 103 flying squirrels being evicted with extreme prejudice from the five RCW clusters on D'Arbonne NWR. Squirrels were removed only from trees which the RCWs were actively using (averaged 6.8 squirrels/tree. Despite our efforts, group C's nest was destroyed by flying squirrels, group D abandoned, and group E failed to nest. Even with the flying squirrel problem four cross-fosterings took place. All four young successfully fledged. Ironically, the timber company with a no management policy had the highest nesting success.

This project required a lot of Assistant Refuge Manager Stroeh's time. Stroeh was the only individual certified to handle nestlings. Therefore, he had to be present for all bandings and transfers. With 40 clusters being monitored, Michael spent most of his waking hours on RCW work. Fortunately, by the end of the season Ms. Wallace and Felsenthal's biologist were certified.

FS-SRS-4155-xxx: "Discovering the Main Factors Contributing to the Decline of Willow Oaks on Certain Sites on the D'Arbonne NWR".

On July 10 Fulton, Pagans and Langford met with a group from the U.S. Forest Service, Southern Hardwood Laboratory, Stoneville, Mississippi. Ted Leininger, Kurt McCasland and Keith Wilson came to look at dying willow oak stands. They agreed the dieoff had research potential and soon began establishing study plots. The tentative cause for the dieoff is oak decline. Oak decline is brought on by unfavorable environmental conditions. On September 15th Fulton, Pagans and Langford met with doctors Bob Johnson and John Hodges to review the willow oak dieoff problem. Both gentlemen probably have over 30 years of bottomland hardwood experience. Ted Leininger and Kurt McCasland also attended. It was confirmed that there was a strong correlation between areas affected by the dieoff and soil conditions.

Mortality is also linked to excessive flooding, low soil ph (3.8), and shallow topsoil (one foot or less) overlying sand. Mortality in 50 to 60 year old willow oaks continued. We expect continued dieoff problems for an indefinite period of time. Bottomland hardwood treatments since 1992 have primarily dealt with oak decline of willow oak stands. Treatment of dying stands entail heavy thinnings to accelerate advancement of hardwood regeneration that will replace dying trees.

HABITAT RESTORATION

2a. Wetland Restoration: On-Refuge

No activity for 1997.

2b. Upland Restoration: On-Refuge

In February and March, Pagans worked with volunteers planting National Tree Trust donated seedlings on two different sites on the west side of the refuge. Sites planted will be gradually converted from pine to pine/hardwood. Working with individual volunteers, Bayou State Bowhunter Association members, Cub Scouts and parents, prison inmates and refuge staff, 15,950 upland hardwood seedlings were planted (via dibble bar) on 49 acres. Volunteers contributed over 32 man days. Compared to previous years, volunteer time was significantly improved as a result of preseason scouting (for volunteers) and news releases. Many volunteers indicated an interest in coming back next year.

Forester Pagans explaining the reasons for reforestation. DRB 97-1; 2/97; RL

2c. Wetland Restoration: Off-Refuge

No activity in 1997.

2d. Upland Restoration: Off-Refuge

No activity in 1997.

HABITAT MANAGEMENT

D'Arbonne Bayou remained at or below pool stage during the summer and fall. Even though the bayou remained within its banks, the abnormally wet spring and summer did not allow an early start for field work in the bottoms. However, the low water levels should help the stressed bottomland hardwoods. Crown die back has been observed for several years, particularly at lower elevations. We're confident that this stress is aggravated by a combination of the permanently elevated water levels caused by the Columbia Lock and Dam and the back to back long duration flooding that has occurred.

3a. Water Level Management

Eagle Lake is a 60 acre water body located in the north central part of the refuge, adjacent to D'Arbonne Bayou. It provides good waterfowl and wading bird habitat and is an excellent fishery. Water control is impossible during the flood season. Historically, beavers have inundated associated drainages. The lake was drawn down to expose mud flats for moist soil plant development. The flats exposed by the 18" drawdown were very narrow and therefore the potential to grow moist soil plants was limited. On the negative side, the wet summer kept water levels fluctuating, hampering the development of any moist soil vegetation. On a positive note, the drawdown relieved water stress on adjacent trees and prevented beaver from making any progress in further impounding the drainages.

3.b Moist Soil Management

The focus of our wetland management is the "Beanfield". This 1,800-acre area consists of 500+ acres of permanent water; 500 acres of young bitter pecan and willow and overcup oak forest and 800 acres managed for moist soil plants. Water level management is possible on 560 acres of the latter. The Beanfield is so named because several (failed) agricultural attempts were made there. Portions of this area are slightly higher in elevation than others and there succession is proceeding more rapidly. Annual flooding limits plant species occurring at lower elevations and we are winning the battle with encroaching buttonbush, planer tree, and red vine. A few scattered young cypress trees were left in otherwise open areas as future raptor perches and cavity trees.

Mowing and disking have been our most viable techniques for maintaining the desired stage of plant succession. Because the entire area consists of low, wet soils, the window of opportunity in regard to habitat manipulation is never very large. Approximately 50% of the field was mowed once ground conditions allowed. The wet summer would not allow any disking. The good soil moisture yielded excellent seed production throughout the field. Small patches of Sesbania, have been a problem for the past few years. The plants are pulled by hand prior to seed maturation.

3c. Graze/Mow/Hay

No activity in 1997.

3d. Farming

No activity in 1997.

3e. Forest Management

The refuge has more than 11,000 acres of bottomland hardwood and 2,500 acres of pine and upland hardwood forest. In addition, there are flooded swamps containing baldcypress and water tupelo. Bottomland hardwood areas provide habitat for bald eagles, neotropical migratory birds, waterfowl and many indigenous species.

Most pine areas on the east side of the refuge are managed for RCW. Under "normal" conditions thinning overstocked stands and establishing replacement stands would be basic treatments. However, pressing needs in dying willow oak areas and a delay in finalizing the new RCW management guidelines on NWRs have stalled treatments (except for prescribed burning).

During spring and summer, Pagans and Langford re-marked two bottomland hardwood timber sales and marked three new bottomland hardwood timber sales. All of these sales dealt with dying willow oak stands. On September 15th, Spearsville Timber Company moved on to finish two hardwood sales in compartment 3. Givens Timber Company and J & L Timber Company loggers moved onto hardwood sales in compartments 5 and 6, respectively, the week of September 22nd. Both had to leave because of wet weather on November 7th without completing the sales. Logger C.A. Albright and Sons moved onto a compartment 9 hardwood sale about October 14th and had to quit logging by the second week of November without completing the sale.

Butts, Pagans and Langford went to Tensas Refuge for a one-day reforestation workshop in June.

Two compartment 1 pine areas (totaling 34 acres) that are scheduled for regeneration cuts were treated with a hydroaxe at a cost of $3,910.00 to control hardwood brush that fire could not control.

The foresters are also responsible for the forestry program on 6,532 acre Catahoula NWR near Jena, Louisiana. Catahoula has about 5,150 acres subject to forest management. Most of the forest had been heavily cut over by the previous landowner. Dense patches of swamp privet that prevent the establishment of desirable bottomland hardwood species are common. More pressing duties on D'Arbonne and a limited Catahoula forestry budget has prevented timely work on Catahoula.

Pagans traveled to Catahoula at the end of January to complete a survival check on a portion of the hardwood seedlings planted in December, 1994. It appeared that the planting failed. Langford and Pagans returned to Catahoula on September 18th and 19th to do a follow up survival check on the rest of the plots planted 1994. They determined that most seedlings had disappeared. It is suspected that herbivores -- rabbits, rats, beaver and nutria -- destroyed many of the seedlings and poor growing conditions took care of the rest.

3f. Fire Management

Beginning on March 29th, the staff did prescribed burns on six days, the last being April 9th. A total of 541 acres were burned in D'Arbonne compartments 1, 2 and 4 at an average cost of $15.88 per acre.

Prescribed burning in RCW areas; DRB-97-2; 4/97; SP

Table 1. Forest managements cuts in 1997 on D'Arbonne Refuge.

SUP	Permittee	Bid ($)	Revenue	Sawtimber (bf) Pine	Sawtimber (bf) Hardwood	Pulpwood (cord & ton) Pine	Pulpwood (cord & ton) Hardwood	Sale Area	Acreage
D-12 (fy95)	Spearsville Timber Co.	4.1/ton hwd	13,531.80				3,300 tons	compartment 3	101
D-17 (fy95)	Spearsville Timber Co.	4.1/ton hwd	5,042.24				1,230 tons	compartment 3	102
D-03 (fy97)	Givens & Co. Inc.	6.43/ton hwd	25,438.17				3,956 tons	compartment 5	138
D-04 (fy97)	J & L Timber Company	8.02/ton 255/mbf	43,788.80		9,438		5,160 tons	compartment 6	158
D-01 (fy98)	C.A. Albright & Sons	150/250/mbf hwd/cypress	4,302.40		28,210			compartment 9	10
Total			92,103.41		37,648		13,646 tons		509
	Firewood Cutters (60)	na					75 cords	compartment 7	35

In May, Pagans and Langford met with Steve Nipper, Natural Resource Conservation Service, to consider methods to reduce soil erosion on fire breaks. A plan is being developed. Preliminary soil analysis indicated an obvious need for lime prior to fertilization and seeding. With highly acidic soils in the area, that was a given. In September, Langford and Littleton worked seven days to clear firebreaks in compartment 1 for liming. A contractor spread 30 tons of lime (3 tons per acre) on firebreaks showing erosion problems. Cost was $60 per ton for a total of $1800.

3g. Pest Plant Control

Pagans and Langford were recertified and certified, respectively, for pesticide application. Langford used Garlon 4 to treat exotic plants.

FISH AND WILDLIFE MANAGEMENT

In a variety of habitats, ranging from cypress and water tupelo in small backwaters to white oak and pine above the flood plain, D'Arbonne provides refuge for 250 birds, 43 mammals, 86 reptile and amphibian species, and 150 species of fish. Management is aimed at maintaining diversity.

4a. Bird Banding

Historically, our preseason wood duck banding builds slowly and peaks in September. However, this trend seems to be changing with most banding taking place in July and August. After only a few days of baiting in June, woodies were seen on our rocket net sites. This was the sixth year that a refuge site has been productive. In the past, fluctuating flood waters often hampered success, forcing the use of off-refuge sites. Twenty-eight hens were banded in nest boxes and 406 were banded on rocket net sites. The refuge reached or exceeded its quota of 125 for the sixth consecutive year, thanks to Michael Stroeh's dedication and help from the LA Wetland Management District which banded 27 hens in boxes.

Age and sex break down is given below:

HY		AHY		U
M	F	M	F	
190	134	9	127	0

One hen hooded merganser was also banded in a nest box.

Banding and monitoring the RCW groups continued through most of the summer. Seventeen individuals were banded. Of these, 14 were nestlings. Five birds were recaptures from previous years. Many refuge RCWs weren't roosting in cavities because flying squirrels had them occupied. Such free roosting birds couldn't be captured.

4b. Disease Monitoring and Treatment

Raccoons suffered another periodic distemper outbreaks. This disease seems to decimate the population about every 5-6 years. When raccoon pelts were more valuable and trappers and hunters were taking significant numbers, distemper was rarely observed.

4c. Reintroductions

No activity in 1997.

4d. Nest Structures

The refuge currently has 32 bluebird boxes in place. A refuge volunteer and birder, Joan Brown, monitored the boxes on a weekly basis during the nesting season. She found that 63% (20) of the boxes were used, several more than once, yielding 29 nests. The results are listed below.

Bluebirds	10/12 successful = 83%
Tufted titmouse	2/2 successful = 100%
Carolina wrens	4/6 successful = 66%
Carolina chickadees	4/7 successful = 57%
Prothonotary warblers	0/2 successful = 0%

The refuge currently has 67 wood duck nest boxes. Only 36 boxes were available for most of the season due to inundation by flood waters. Flood waters flooded many boxes early in the season and many floated away. Thirty one boxes went under water, 29 of which had active nests. Of the 36 boxes available 97% were used; again several boxes produced more than one brood. Listed below are the results.

52 nests with 922 eggs
Average of 17.7 eggs/nest

556 hatched - 60% of eggs hatched

9 nests destroyed/abandoned - 85% success rate
Three nests were destroyed by predators (mink, raccoon). The remaining six boxes were abandoned, probably due to severe dump nesting.

4e. Pest, Predator, and Exotic Animal Control

The refuge allows trapping of all legal furbearers. A $10 fee is charged. The refuge season is January and December of even numbered years. Two permits were issued. Trapping results were as follows:

Raccoon	72	Beaver	77	Opossum	6
Nutria	41	Mink	1		

Both permits were issued to James Littleton. He has been a long time refuge trapper and currently the only one. With beaver being an ever present problem and almost no interest in trapping them, we have been allowing Mr. Littleton to trap them outside the regular refuge season via special use permit. In the past two years he has removed 263 beaver. His efforts are paying off. Sloughs that have not been dry in many years are now beaverless.

The staff periodically remove beaver by shooting when time and water levels permit. After intensive control efforts for the past decade, a more desirable population level has been reached. However, constant control is needed to keep their numbers in check.

COORDINATION ACTIVITIES

5a. Interagency Coordination

No activity in 1997.

5b. Tribal Coordination

No activity in 1997.

5c. Private Lands Activities

No activity in 1997.

RESOURCE PROTECTION

6a. Law Enforcement

While the number of cases increased slightly, we suspect this is due to the increased use of the refuge. There is still a strong need for enforcement. Listed below are the cases made during the year.

Vehicle Trespass	1
No Refuge Hunting Permit	6
Carrying/Possessing a Firearm	2
Hunting in a Closed Area	6
Leaving Personal Property	1
Failure to Check Deer	2
Total Citations	18

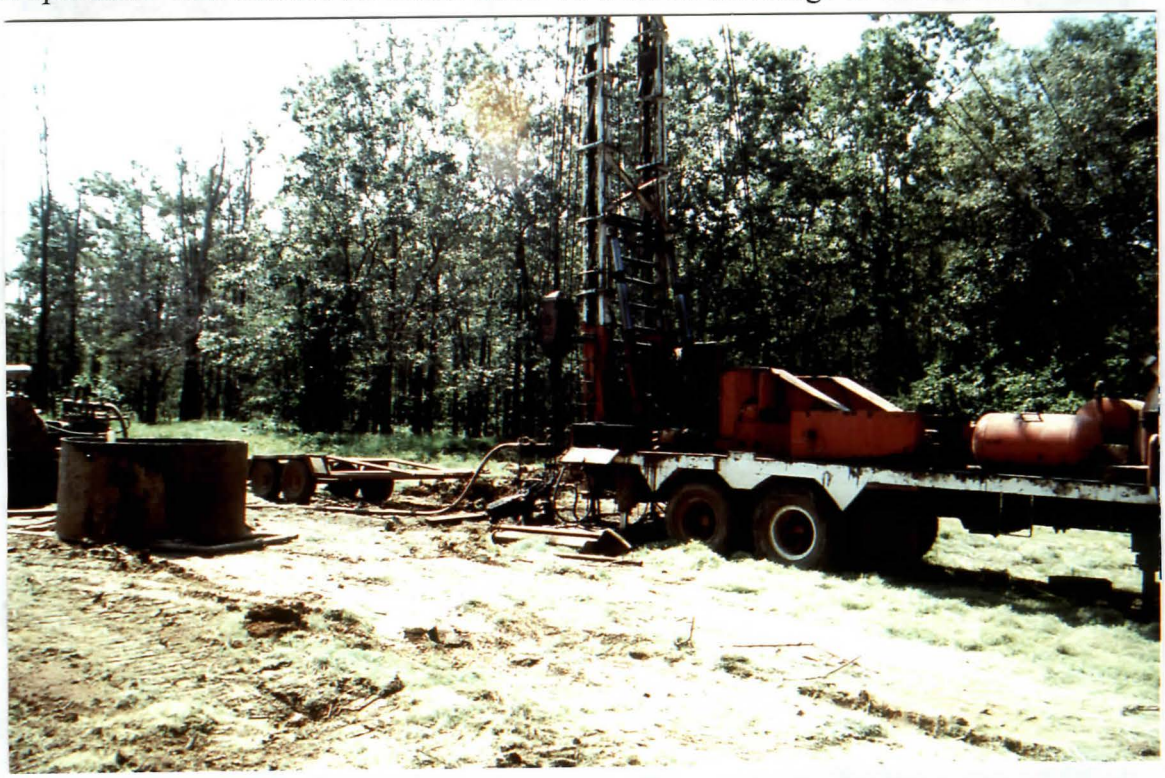
6b. Permits and Economic Use Management

Twenty six recreational fishing permits were issued at no charge to those who use hoop nets or slat traps. This procedure mirrors the state's approach to "recreational" fishermen using such tackle. Because of elevated levels of mercury in refuge fish, commercial fishing was eliminated in 1994. The Service recommends that no refuge fish be eaten.

For the 15th consecutive year, firewood cutters thinned forested areas to enhance wildlife habitat. Issuance of firewood permits began July 21 and ran until November 7. Bottomland hardwood was marked for thinning by public firewood cutters on 35 acres in compartment 7. The station issued 60 permits and permittees removed about 75 cords.

6c. Contaminant Investigation

The natural gas industry's impact on the refuge seems to be diminishing. The price of natural gas remains low, production continues to decline and some of the worst operators have either sold out or appear headed for bankruptcy. In FY 1996, the state agreed to pool their orphan well funds with special funding we received and cooperatively plug a number of wells on the refuge that had been abandoned. Weather and red tape delayed the project until August when 18 wells were plugged. Several of these wells had been leaking gas and, periodically, brine for some time. In addition to those plugged by the state, at least 12 others were plugged by gas well operators. This reduces the total number of wells on the refuge to about 130.



Plugging abandoned gas wells; DRB-97-3; 8/97; MS

6d. Contaminant Cleanup

Earlier analysis of refuge fish and fish eating birds and mammals revealed elevated levels of mercury in these species. Levels were sufficiently high that reduced hatching and sterility in several species of birds are likely. Just where the mercury comes from isn't completely understood. However, available evidence implicates both naturally occurring and man generated airborne sources. Elemental mercury isn't very water soluble. Methyl mercury is. Methyl mercury is rapidly taken up into the aquatic food chain and is responsible for the elevated levels seen in refuge wildlife. When elemental mercury, either from mercury bearing rocks and soils or from the atmosphere, reaches a water body, water chemistry determines how much may be converted to methyl mercury. Poorly oxygenated water bodies with low pH, high sediment and little current (typical of refuge waters) are conducive to the methylation of elemental mercury.

Mercury manometers (meters) used to measure gas production are a known source of mercury contamination on the refuge. A group of gas companies, led by Coho/Mid Louisiana Gas Company, worked with the Service on developing a plan to clean up refuge meter sites. The companies paid for the cleanup and hired International Environmental Trading Company, which specializes in mercury cleanup, to remediate the sites. Average cost per meter site is $950 At year's end, all known mercury meter sites (approximately 30) had been cleaned to less than 10 ppm of mercury.

Who knew the well was leaking before we found it? Someone had wrapped duct tape around the holes in the pipe. Who owns the well? The Louisiana Office of Conservation (in theory) regulates the petroleum industry. Their records indicate that the well, Pennzoil 20-8, serial number 171095, belonged to Bayou Gas. Bayou Gas said it wasn't theirs. Turns out Bayou Gas hadn't paid taxes on the well, it went to the parish, they included it as part of a tax sale to an unsuspecting operator along with other wells and later Bayou Gas bought it back from them! Here Ginger Graham with the Louisiana Dept. of Environmental Quality (DEQ) takes a brine sample. DRB-97-4;7/97;LF

Bayou Gas has had more brine (concentrated salt water that is a by-product of natural gas extraction) leaks on the refuge during the last several years than all other gas companies combined. Most leaks are adjacent to previous ones. Note the current leak spewing salty mud from the hole in the foreground, the pile of disturbed dirt over the pipeline and the short length of PCV pipe in the background that marks the previous leak location. Vegetation hasn't had time to become reestablished on the soil dug up to fix the series of leaks on this section of line. We wonder if a short seminar on how to glue PVC would help alleviate our problems with this company. Having lost patience with notifying them of the leak, them coming out and fixing it and then repeating the process a short time later, we have begun notifying DEQ. When we provided DEQ copies of our correspondence with Bayou Gas documenting the frequency of the leaks, they indicated that they would approach it as a chronic problem rather than an isolated incident. Hopefully, Bayou Gas will decide to either improve or cease operating. DRB-97-5; 7/97; LF

6e. Water Rights Management

No activity in 1997.

6f. Cultural Resource Management

No activity in 1997.

6g. Land Acquisition Support

No activity in 1997.

PUBLIC EDUCATION & RECREATION

7a. Provide Visitor Services

Fishing is the most popular public use activity on the refuge. The confirmation of elevated levels of mercury in refuge fish has reduced fishing pressure somewhat. When flood waters recede, fishing picks up. Hundreds of fishermen can be on the bayou and it's backwater during this time. Most streams, lakes, sloughs, and bayous are replenished annually by backwater flooding, maintaining an excellent fishery.

In 1992, the Andy Anders memorial observation tower was constructed overlooking the Beanfield. Since it's construction, the tower has seen thousands of visitors. This area provides an excellent opportunity to see deer, waterfowl, and other migratory birds.

Two individuals reportedly damaged their boat trailers while launching at the lower Holland's Bluff boat ramp. In order to work on the damaged Columbia Lock downstream, the Corps of Engineers had lowered water levels in D'Arbonne Bayou at least a foot below normal minimum pool. We checked the ramp and found that a crescent shaped chunk about two feet wide and 18" deep had broken off the end of the south ramp. As the water level rose (and/or the coffer dam settled) we hurriedly repaired the damage, extending the ramp as far as available equipment would allow and set concrete parking logs at the end of the ramp to prevent trailers from going off the end. Within five minutes of finishing, the coffer dam decided it was easier to accede to water pressure than fight it. The solicitor's office initially denied the tort claims but the claimants requested a reconsideration.

Hunting dog field trials, especially for raccoon hounds, were once very popular. However, with the decline in price for raccoon pelts, demand has dwindled. No trials were held in 1996.

The entire refuge was open to hunting, with some hunts limited to specific areas. The first split of the 1997-98 waterfowl season opened on November 15 and closed December 14. With most ducks concentrated in the Beanfield (a no waterfowl hunting area) hunters found few ducks and less than optimum water levels. The second split opened December 20 and closed January 18. The bayou did not rise significantly above pool stage and flood the willow oak flats before the end of the year. With a colder winter, no doubt more ducks would have been present. Refuge hunters experienced the third consecutive year of poor success in spite of much improved national waterfowl populations.

Archery deer hunting opened on October 1, 1997 and continued until January 31, 1998. As usual, participation was highest during the first several weeks of the season. A few avid archers continued to use the refuge on a regular basis. The entire refuge was open to archery

hunting except the Beanfield during the gun hunts. Although hunter success is not intensively surveyed, a number of hunters reported success in the bottomland hardwood die-off areas. These areas produced a lot of browse.

Two either-sex deer gun hunts were held. The first hunt was November 8-9 and hunting pressure was heavy. The second hunt ran November 28-30. A total of 1,950 hunter use days was estimated for all five days.

Some refuge hunters would like us to institute trophy deer management. However, the refuge is surrounded by hunting clubs that shoot any legal buck but discourage taking does. The off refuge gun season is 69 days in length. Since annual flooding forces most refuge deer onto these clubs during the hunting season, they have a highly significant impact on the herd. Until the clubs become more selective, having trophy-quality refuge deer will be difficult. Even with the odds stacked against us, we seem to be seeing a trend toward larger, older, bucks.

Quail habitat is primarily limited to the pine areas that are burned periodically. Burning has stimulated extensive stands of beggar lice, beggar ticks, and other quail foods. Coveys are usually widely scattered and therefore more difficult to hunt than in more optimum habitat. Hunting pressure is correspondingly low but there are several determined hunters who pursue refuge quail.

Rabbit and squirrel seasons opened October 4th. Success was moderate with most hunters getting a few squirrels but few limits of eight. Most rabbits are taken incidental to squirrel hunting except when dogs are allowed for rabbit hunting (after the refuge deer gun season ends).

Horseback riding is still a favored pastime for some. Five special use permits were authorized for such purposes on the refuge. Most of the designated horseback riding trails are also open to vehicles.

7b. Outreach

The LA Ornithological Society held their annual winter meeting in Monroe, LA. Stroeh assisted with the planning and field trips. Field trips were taken to Mollicy Farms and D'Arbonne NWR. Approximately 65 people attended.

We participated in Earth Day activities at the Monroe Zoo by having an endangered species display and distributing 900 cypress trees. This event was sponsored by many organizations and attracted over 1,400 people.

The third annual Bayou State Bowhunters Association 3D shoot was held on the refuge. Sixty individuals competed and helped raise money for refuge reforestation efforts.

The Northeast LA Bird Club held activities for International Migratory Bird Day on the refuge. Twenty individuals participated and they saw 101 species.

Volunteer Amanda Price started an Explorers program. This program is in conjunction with the Boy Scouts. The program is for 16-20 year old students. It is designed to explore careers in resource management. There are only six conservation related Explorer groups nationwide.

The refuge hosted a Bowhunter Safety Course. Twenty six individuals attended.

Fulton presented environmental education programs to 40 girl scouts at the Indian Creek Girl Scout Camp. He also gave a presentation on endangered species to 30 day care enrollees.

Thirteen cub scouts and eight adults visited the refuge to learn about tree identification.

In observance of National Hunting and Fishing Day, a multi-organization event took place at the Louisiana Dept. of Wildlife and Fisheries office in Monroe. A display on the Service in general and these refuges in particular was the focus of our booth. Many questions were asked about the upcoming hunting seasons and the refuge in general. More than 2,500 people attended.

In observance of National Wildlife Refuge Week, staff set up a display at a local bank, staffed a booth at the mall, provided brochures and posters to local schools, gave talks to fraternal groups and conducted environmental education activities for 130 Girl Scouts.

Laney gave an environmental education program to Sterlington elementary students.

PLANNING AND ADMINISTRATION

8a. Comprehensive Conservation Planning

No activity in 1997.

8b. General Administration

Personnel

D'Arbonne operated with eight employees for most of the year. Forester Langford entered on duty March 3. He has been a welcome addition to our staff. There is no replacement in sight for the equipment operator or assistant manager positions lost several years ago.

Several On the Spot Awards were given during the year. Assistant Refuge Manager Stroeh received an award for his invaluable contributions to the RCW research project. Office Assistant Laney received an award for her efforts on the environmental education front. Project Leader Butts was recognized for an outstanding year of accomplishments.

Back Row: 12,6,10,13,7,5,3,2,9
Front Row: 11,8,1,4 DRB-97-6; 12/97; LF

Name	Title	Grade	EOD	Status
1. Kenneth Butts	Project Leader	GS-13	11/10/96	PFT
2. Lee R. Fulton	Refuge Manager	GS-12	4/29/84	PFT
3. Kelby Ouchley	Refuge Manager	GS-12	9/9/90	PFT
4. Michael Stroeh	Asst. Ref. Mgr.	GS-11	3/24/91	PFT
5. Andrew Hammond	Asst. Ref. Mgr.	GS-11	10/30/97	PFT
6. Steve Pagans	Forester	GS-11	7/03/77	PFT
7. Harry Cook	Wildlife Biologist	GS-11	11/17/91	PFT
8. Russ Langford	Forester	GS-09	3/20/97	PFT
9. Elizabeth A. Laney	Office Assistant	GS-06	2/09/92	PFT
10. Carolyn Richardson	Office Assistant	GS-06	2/10/92	PFT
11. Bill Littleton	Equip. Operator	WG-10	8/28/78	PFT
12. Steve (Buck) Wender	Equip. Operator	WG-08	4/21/91	PFT
13. Danny Cain	Equip. Operator	WG-08	5/12/96	PFT
14. Huey Rhodes	Refuge Officer	GS-08	5/06/79	PFT

Again this year, if it wasn't for volunteers, many projects would not have been completed. They spent long hours in the field enabling our staff to move onto other projects. The intern program was extremely successful. Both interns were excellent workers with good attitudes in spite of the chiggers, humidity, mud and heat .

Funding

The level of funding over the past five years is listed below. D'Arbonne and Upper Ouachita NWR's have a combined budget. The Louisiana Wetland Management District is still funded separately.

Subactivity	FY-97	FY-96	FY-95	FY-94	FY-93
1261	438,600	502,400	260,300	252,200	271,700*
1262	47,000	32,900	126,500	296,000**	140,400
6860	50,000	50,000	50,000	50,000	50,000
9120		1,000	1,800	31,400	13,300
9110		4,000	10,000		
4600			10,000		
7201	1,185	3,600			
5820		8,266			
2957	110,000				
9252	4,000				
9251	1,000				
Total	651,785	602,166	448,600	629,600	485,400

*$26,000 for contaminant study
**$164,000 for new grader and above ground storage tanks

1261-operations, 1262-maintenance, 4600-contaminants, 5820-NAWCA grant, 6860-expenses for sales, 7201-contributed funds, 9110-fire equipment, planning and training, 9120-prescribed burning, 9251-fire maintenance, 9252-prescribed burning, 2957-Flood Money.

Four grants were received during the year. Entergy donated $500 for bottomland hardwood restoration in conjunction with the $185 raised by the Bayou State Bowhunters Association. Two grants came from

Entergy ($300) and Northeast LA Bird Club ($100) to provide fuel to pump water for early migrants. The third grant was from the National Rifle Association ($2,000) for an accessible hunting trail.

In August, Coho Petroleum Company provided $2,000 worth of culvert for the road and also provided equipment and operators for road work.

Revenue sharing payments were well received by officials for Ouachita ($18,360) and Union ($73,659) Parishes this year. This payment was an increase from last year and represented 72% of the full share value.

Safety.

One accident occurred during the year. In July, Intern Fortier was bitten by a black widow spider. A trip to the emergency room fixed the problem.

Boat Safety training was provided to staff members in April.

Butts, Fulton, and Stroeh completed aviation safety training.

Equipment and Facilities

The office phone system was upgraded at a cost of $2,700. We now have direct line access to the LA WMD and can transfer calls.

A new 6X6 ATV was purchased at a cost of $5,767. This ATV will be used extensively during fire season to transport the foam unit.

The TD-20 engine was replaced at a cost of $28,363. The replacement Detroit engine has increased power, is more fuel efficient, is more reliable than the original, and parts are more readily available . Rebuilding the old engine would have cost over $20,000.

A new 4x4 pickup was purchased for the forester at a cost of $19,000.

Four refuge roads were regravelled and culverts were replaced at a cost of $27,950. The extensive flooding we experienced over the years had degraded our roads. Finally, special appropriations came through for these repairs.

A new disk was purchased for work in the moist soil units at a cost of $6,495. DRB-97-7;MS

A new 15 foot bat-wing mower was purchased for moist-soil management at a cost of $9,150.. DRB-97-8;MS

A Project Leader that does more than paperwork! DRB-97-8; 6/97; LF

Credits:

Stroeh: All sections except those below, typing and assembly.

Pagans: 3e, 3f, 3g

Fulton: 6c, 6d, editing

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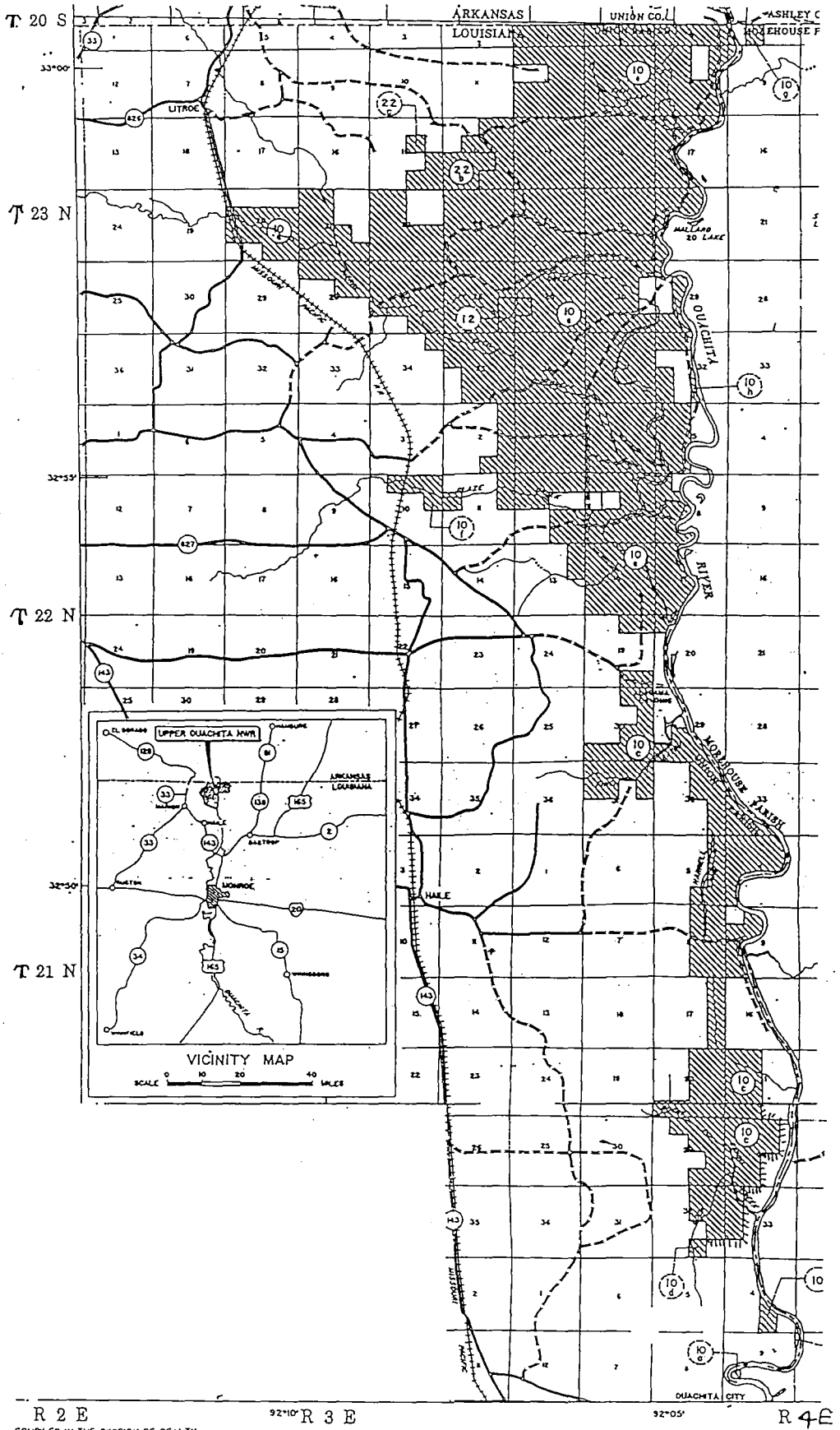

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INTRODUCTION

Upper Ouachita National Wildlife Refuge was established on November 20, 1978. It is located in Union and Morehouse Parishes in north- central Louisiana. The 20,905-acre refuge is bounded on the north by the Arkansas state line, on the east by the Ouachita River and on the west and south by private land. From north to south it measures approximately eighteen miles and varies in width from one to six miles. One half mile of private land divides the refuge into northern and southern units.

The topography is flat in the Ouachita River flood plain, with rolling hills present along most of the western boundary. Elevations range from 52 feet MSL at the river's edge to almost 85 feet MSL in the northwest portion of the refuge. Approximately three-fourths of the area is inundated annually by backwater flooding from December to June.

The major habitat type is 14,500 acres of seasonally-flooded bottomland hardwood forest. Other habitat types include 2,000 acres of open water, 1,870 acres of shrub swamp, 1,600 acres of wooded swamp, 400 acres of upland forest, and 160 acres of cleared bottomland (formerly agricultural lands). The balance of the refuge is composed of roads, pipeline rights-of-way, and gas well clearings.

Acquisition was authorized by the Migratory Bird Conservation Act and the Wetlands Extension Act. Current acreage is only part of the proposed 36,000. The land was purchased from the Pennzoil Producing Company, and no additional lands have been acquired since refuge establishment. Approximately 1,000 acres of private inholdings lie within the current boundary. Approximately 375 natural gas wells are located on the refuge; no mineral rights were obtained in the land transfer.

The surrounding area is predominantly rural. Union Parish's population totals 21,167 (1980 census). The economy of the area is based on forest products, natural gas production, agriculture, and light industry.

Upper Ouachita NWR was primarily established to protect bottomland hardwood habitat and provide habitat for wintering waterfowl. Other objectives include providing wildlife-oriented recreation. It is administered from the D'Arbonne NWR office, 21 miles to the south near Rocky Branch, LA. A shop building is located on the refuge, 4 miles east of Haile, LA.

MONITORING & STUDIES

1a. Surveys & Censuses

Bald eagles commonly use the Maize Field and Finch Lake during the winter, especially when large numbers of waterfowl are present. Numbers of eagles usually do not exceed three. No eagles were observed during the year.

Use by red-cockaded woodpeckers (RCWs), which roost and nest in mature living pines, is very limited. A few are occasionally seen foraging within refuge boundaries. Limited pine habitat makes establishment of any colonies unlikely. However, just inside our boundary is one active tree. This tree is part of a colony shared with Plum Creek Timber Company. Assistant Refuge Manager Stroeh met with Plum Creek about developing a memorandum of understanding regarding RCWs. During the meeting land acquisition became the main topic. They are very willing to work with us, however they are interested in land swaps rather than purchase. The Nature Conservancy may have to assist in acquisition.

The presence and distribution of wintering waterfowl seems to depend primarily on water levels. Low levels favor dabblers, because off-refuge agricultural lands and higher areas are dry, causing birds to seek the permanently flooded areas and low, flooded fields on the refuge. As water levels rise, and the shallow backwater moves into forest, mallards and other dabblers begin using the flooded bottomlands more.

Distribution patterns for waterfowl were similar to those reported for D'Arbonne NWR.

Thousands of double-crested cormorants are usually present during the winter months. Populations of this bird have increased tremendously in the past decade.

Great blue herons, little blue herons, great egrets, and wood storks are common, especially during the summer, after the nesting period. No rookeries are known to occur on the refuge. These birds use the Maize Field, wooded brakes, and sloughs.

Because of flooding of their preferred habitat, shorebird use is low. Most shorebird use occurs from May through July and is usually restricted to the Maize Field.

The refuge hosts a variety of birds of prey. American kestrel, red-tailed hawk, red-shouldered hawk, barred owl, great horned owl, screech owl, and turkey and black vultures are common sights throughout the year. Occasionally, ospreys are seen.

Backwater forces deer onto private land and makes access difficult. This makes it hard to obtain deer herd management information. However, this year was no different. Wet ground conditions prevented access and surrounding hunting clubs denied access to the refuge.

During low water years, turkeys are very common on the refuge. Flocks of 20 to 40 birds have been seen. During the spring gobbler survey, 9 gobblers were heard.

1b. Studies & Investigations

No Activity in 1997.

HABITAT RESTORATION

2a. Wetland Restoration

The majority of the forest was cut over by the previous landowner. Although hardwood regeneration is present, most is not free to grow. The release of young oaks ranks as a high priority. Using a dozer with a shearing blade to cut brush and thereby release hardwood regeneration was theoretically the best method to achieve refuge goals. In 1996 our KG (shearing) blade was refurbished and shearing was going well when the dozer engine blew after treating only 25 acres. This year the engine was replaced and shearing was resumed again in the same area. After shearing only about 25 acres, guess what happened? A stout limb found a "chink" in the bulldozer's armor -- an access hole for oil changes in the belly pan. The limb went in at an angle and speared the radiator. The repair cost about $2,500. Because of a delay in the repair work and early fall rains, shearing was over for the year. We hope next year is an improvement.

2b. Upland Restoration

In February, refuge staff and volunteers planted upland hardwoods on 12 acres south of the shop and 12 acres on a tornado damaged area of the refuge. Both areas are subject to gradual conversion from pine to pine/hardwood. National Tree Trust donated 4,650 seedlings for the planting.

2c. Deepwater/Riverine Restoration

No Activity in 1997.

HABITAT MANAGEMENT

The refuge lies within the Ouachita River Basin, which encompasses much of southern Arkansas and northeast Louisiana. A series of three major reservoirs are located on the Ouachita River in Arkansas. The U. S. Army Corps of Engineers operates a lock and dam at Felsenthal, Arkansas approximately six river miles north of the northern refuge boundary. Another dam at Columbia, Louisiana, ninety-eight river miles downstream, controls the pool in which the refuge is located. These dams exert considerable influence on river stages at Upper Ouachita.

The normal low water elevation of the Ouachita River during summer is 52 feet (Monroe gauge). Rainfall in the Ouachita Basin upstream from the refuge may produce river stage differences as

great as 30 feet. At 75 feet MSL approximately 95 percent of the refuge is inundated. These conditions have tremendous impact on the refuge's bottomland hardwood habitat.

3a. Water level Management

Steep Bank Creek drains Fish and Moss Lakes, two interconnected lakes on the refuge's north end, into the Ouachita River. About 1963, prior to refuge establishment, previous landowners placed an earthen plug in the creek, permanently impounding five to six feet of water in Fish and Moss Lakes. The impounded water, with the assistance of beaver, flooded and killed many acres of bottomland hardwood trees. On several occasions the plug reportedly either washed out or was dynamited. It was rebuilt following these events. Because the plug was over a quarter of a mile from the mouth of the creek, when the Ouachita River was too low to allow boat access to the plug, fishermen had to either portage their boats overland or leave a second boat moored at the plug. In addition, some fishermen used an overland short cut to access Fish Lake rather than motoring through several sinuous miles of the creek and Moss Lake.

As a result, the area from the mouth of the creek to the plug and on to Fish Lake acquired an assortment of discarded carts used to trolley boats to and from the river. The plug area had a collection of boats in various stages of repair. If submerged by flood waters, they might be struck by boats passing above. If boats were tied to trees during periods of high water and not tended, they were left hanging in the trees when the water receded. Frequently, trees were damaged by permanent mooring lines. Some fishermen would clean their catch and dispose of the offal in the boats.

The refuge was established in November of 1978. In 1980 the public was required to moor boats left in the Steep Bank Creek area at two designated sites. Compliance with this regulation was haphazard at best and many of the problems mentioned above remained. In 1983, a dam and small water control structure were constructed at the mouth of the creek and the earthen plug was removed. Fishermen no longer needed to portage their boats. However, at certain water levels, those individuals that didn't have a boat they could leave moored on the refuge still had to drag their boat over the dam as they previously had to do at the plug. Because the best fishing, and most public use, occurs as the river falls back into its banks, the wet clay face of the plug and dam made for treacherous footing. In 1986, boaters motoring over the dam as flood waters receded created a trench that eventually washed out much of the dam. The dam height was elevated that year as part of the repair effort. In 1987, a ditch was cut between the creek and the short cut to Fish Lake. That same year, a metal boat roller system was installed to facilitate access over the dam. When the roller system was completed, permits to leave boats moored on the refuge were no longer issued.

Several times since 1986, falling flood waters enlarged small prop cuts near the mouth of Steep Bank Creek. Each time this occurred, the refuge was able to access the cut and repair the damage before it became excessive. In the spring of 1996, another cut formed. Due to wet weather, the heavy equipment needed for repairs could not reach the site. As a result, by 1997 the cut grew to the point that repairs would involve a significant commitment of the refuge's limited resources.

A permanent solution to the cutting problem would require a much larger water control structure and possibly "hardening" the riverbank with concrete, riprap or similar material.

Impromptu dam; UO-97-2; 8/97;MS

The washout at Steep Bank Creek; UO-97-1; 7/97; MS

The duck hunters and fishermen who used the lakes were not pleased that the lake level was not being maintained at the customary level. Concerned citizens built a makeshift dam in the cut to hold water in the lakes. Since this minimized erosion in the cut, we had no problems with their efforts. However, we were trying to relieve pressure on the cut by letting water out of the stop-log structure. We weren't getting much water out through the structure and figured beaver had it blocked. When the water in the creek finally fell to a level that we could check the structure's intake pipe, we discovered that person's unknown had placed a 1/4" steel plate over it! The plate was removed with only minor injuries to the refuge manager but serious damage to the ozone layer and the reputation of those responsible.

When the cut grew to a size that major repair work would be required, the staff began to discuss available options. When the public learned that one option was to remove the dam and not replace it, tar and feathers were quickly gathered and the refuge manager was invited to be the guest of honor at a specially called meeting. The local congressman was also invited. There were many opinions put forward by the attendees and, when he could get a word in edgewise, Manager Fulton addressed all concerns. When the irate rhetoric reached a peak, the congressman told the audience that he had faith in the Service and any decisions would have to be based on fact, not opinion. At that point, Fulton developed a strong urge to hug the congressman but was able to suppress it. Those attending the meeting were kept appraised of developments through periodic mailings. As demonstrated by recent aerial photography, the dam continued to adversely impact bottomland hardwood forest both on and off the refuge. Probably over 1,000 acres were impacted. Ultimately, we decided the best thing for the resources we were charged with

protecting was to remove the dam. We are still reaping the resulting whirlwind but have been able to maintain support for the decision.

Mouth of Steep Bank Creek sans dam UO-97-3; 9/ 97; LF

3b. Moist soil Management

No activity in 1997.

3c. Graze/Mow/Hay

No activity in 1997.

3d. Farming

No activity in 1997.

3e. Forest Management

The refuge has approximately 18,000 acres of bottomland hardwood and baldcypress swamp, and 500 acres of pine and upland hardwood. Forest management in the bottoms is primarily for waterfowl, with consideration given to bald eagles, neotropical migrants, and resident wildlife. Current plans are to selectively thin and release oak regeneration. Large portions of the hardwood areas were cut over under previous ownership. Extensive work is required to restore these areas to their full potential for wildlife.

Forest management in two pine areas (about 200 acres) is primarily for red-cockaded woodpecker (RCW) forage habitat. This species does not presently nest on the refuge but does occasionally forage. Overall, pine stands are being thinned to lessen competition and reduce the risk of pine beetle infestations. Pine areas not utilized by RCW will be gradually converted to pine/hardwood and hardwood.

In January, Pagans submitted a Delta Post Oak (Quercus similis) to the Louisiana Forestry Association as a potential state record tree. It was accepted. The tree had the following dimensions: circumference, 10' 6.5"; height, 85'; crown spread, 56'; total points, 226.

Pagans and Langford re-marked two bottomland hardwood timber sales and finished marking one new pine timber sale. Four volunteers helped at least one day on re-marking. An ARK-LA-MISS Timber Company logger moved onto a hardwood sale in compartment 1 south of the shop on August 7th to start logging and completed the sale by September 22nd. The Spearsville Timber Company logger moved back on a compartment 2 hardwood sale in August and completed it within a few weeks. A Plum Creek Timber Company logger moved onto a pine sale south of the shop in October, cut for about two weeks and moved off without completing the sale.

3f. Fire Management

No activity in 1997.

3g. Pest Plant Control

Langford used Garlon 4 to treat exotic plants.

FISH & WILDLIFE MANAGEMENT

In a variety of habitats, ranging from cypress and water tupelo in small backwaters to white oak and pine above the flood plain, Upper Ouachita provides refuge for 250 birds, 43 mammals, 86 reptile and amphibian species, and 150 species of fish. Management is aimed at maintaining such diversity.

SUP	Perm	Spea Timl	ARK-) Timl	Plum Timl	
UO-01 (fy96)					
D-09 (fy96)					Total
UO-03 (fy97)					

4a. Bird Banding

Sixty wood ducks were banded on a newly established banding site on Finch Lake. In addition, 10 hens were banded in wood duck boxes.

Volunteer Amanda Price Assisting with Wood Duck Banding; UO-97-3; 9/97; MS

4b. Disease Monitoring and Treatment

No activity in 1997.

4c. Reintroductions

No activity in 1997.

4d. Nest Structures

Thirty-eight wood duck boxes have been erected on the refuge. Twenty eighty were available during the nesting season. To our amazement 100% of the boxes were used compared to only 36% in 1996. We did have an 60% nesting success. Listed below are the results.

42 nests with 757 eggs
Average of 18 eggs/nest

327 hatched - 43% of all eggs hatched

17 nests destroyed - 60% success rate

Coons were the biggest predator, due to flood waters overtopping the predator guards. Fifteen nests were unsuccessful due to abandonment.

Dumping nesting was a major problem early in the year; however as additional boxes were erected dump nesting declined tremendously on D'Arbonne. However this was not the case on Upper Ouachita NWR which still had major dump nesting throughout the season. These results are probably due to the lack of nesting habitat during high flood periods.

4e. Pest, Predator, and Exotic Animal Control

The refuge allows trapping for all legal furbearers and the season is January and December of even-numbered years. A $10 fee is charged. One permit was issued to a refuge neighbor who has been successful in removing beaver on his property and adjacent refuge land. He has consistently kept numerous areas beaver free for several years. The staff also removes beaver periodically by shooting when time and water levels permit.

COORDINATION ACTIVITIES

5a. Interagency Coordination

No activity in 1997.

5b. Tribal Coordination

No activity in 1997.

5c. Private Lands Activities

No activity in 1997.

RESOURCE PROTECTION

6a. Law Enforcement

The number of law enforcement violations detected increased slightly.

Hunting in a Closed Area	6
Vehicle Trespass	6
Unplugged Shotgun	1
Leaving Personal Property	1
No Fishing License	3
Hunting in a Closed Season	2
Possession of Alcoholic Beverages	2
Total	21

6b. Permits and Economic Use Management

No activity in 1997.

6c. Contaminant Investigation

Testing by the Service and state agencies in Louisiana and Arkansas has revealed elevated levels of dioxin and mercury in Ouachita River fish. The Georgia Pacific paper mill in Crossett, Arkansas is a known source of dioxin. The mill has been moving to a chlorine (dioxin) free bleaching process and now claims that it no longer produces detectable quantities of dioxin. No one has proposed a cleanup of the dioxin already in the river.

Upper Ouachita has mercury contamination problems similar to those at D'Arbonne NWR.

6d. Contaminant Cleanup

Approximately 12,000 refuge acres overlie the Monroe Gas Field. The natural gas industry hasn't disappeared from the refuge, but is fading somewhat. The price of gas is low, production continues to decline and one of the worst operators sold out. Other fly-by-night operations appear headed for bankruptcy. The former D.J. Simmons company was bought by a much more responsible operator. Because so many of the D.J. Simmons wells were in poor shape, the new operator plugged several of them. This reduces the total number of wells on the refuge to about 330.

Upper Ouachita was the first site in Louisiana where mercury was found below a number of meters used to measure natural gas production. The gas companies agreed to clean refuge sites and have been working towards that goal for the last few years. Only one refuge site remains and it will be done when the backwater recedes in 1998. Approximately 160 meter sites were found on the refuge. The Service will not knowingly purchase lands with contaminant problems. For

several years, we have been working towards fee title acquisition of Mollicy Farms as an addition to Upper Ouachita NWR. We notified the landowner and the gas companies of our plans and all 140 known meter sites at Mollicy were cleaned this year.

6e. Water Rights Management

No activity in 1997.

6f. Cultural Resource Management

No activity in 1997.

6g. Land Acquisition Support

Plum Creek Timber Company has shown interest in a land for land exchange for the lands within our acquisition boundary. We are currently working with the Nature Conservancy in locating possible exchange lands. These areas have up to five RCW groups. Acquiring these lands would also expand our deer and turkey management programs.

PUBLIC EDUCATION AND RECREATION

7a. Provide Visitor Services

A population in excess of 245,000 (five surrounding parishes, 1980 census figures) lies within a sixty-mile radius of Upper Ouachita NWR. The population hub is the community of Monroe/West Monroe (pop. 72,590). Hunting, fishing, boating, and wildlife observation are the most popular activities. The entire refuge is open to the public. Access to many locations is a problem, however, especially during the flood season.

The refuge contains 10 miles of roads that cannot support all-weather travel. Only during extended dry periods are most roads passable. To compound the problem, oil and gas company personnel using 4-wheel drive vehicles attend the 300+ gas wells as soon as flood waters recede. This leaves the clay roads rutted and delays regular road maintenance. Until the road system is improved, public use will remain low.

Adequate public access to the main portion of the northern unit is also lacking. Fee title land purchase or easements will be necessary to remedy this problem.

No facilities for the purpose of wildlife observation have yet been developed. Until better access is possible, nonconsumptive recreation will be low.

Fishing is the most popular public use activity. When the water level drops, fishing picks up. Hundreds of fishermen can be on the river and its backwater during this time. Most streams,

lakes, sloughs, and bayous are replenished annually by the Ouachita River, maintaining an excellent fishery. Commercial fishing was common on the refuge. However, contaminants in fish caused us to eliminate commercial fishing. In line with state policy, free recreational permits were issued to those who use hoop nets or slat traps.

7b. Outreach

No activity in 1997.

PLANNING AND ADMINISTRATION

8a. Comprehensive Conservation Planning

No activity in 1997.

8b. General Administration

Manager Fulton received an award for his handling of the Steep Bank Creek Dam issue.

EQUIPMENT AND FACILITIES

The Maizefield Road (1.2 miles) and the road south of the shop (.8 miles) were repaired with supplemental appropriations for storm damage at a cost of $30,000.

Credits

Stroeh: All sections except those below.

Pagans: 2b, 3e, 3g

Fulton: 3A, 6c, 6d, editing

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INTRODUCTION

- The Louisiana Wetlands Management (WMD) was established in September 1990, in response to growing Fish and Wildlife Service land-based responsibilities off traditional refuges. These include Farm Services Agency (FSA, formerly FmHA) easements and fee title tracts, leases, and work on private lands. The WMD encompasses 20 parishes in the northern half of the state: Caddo, DeSoto, Sabine, Natchitoches, Red River, Bossier, Webster, Bienville, Winn, Grant, Jackson, Lincoln, Claiborne, Union, Ouachita, Caldwell, Richland, Morehouse, West Carroll, and East Carroll. Most of the 37 FSA easements, 10 fee title tracts and 4 leases are concentrated in northeastern Louisiana. In 1988, the first fee title transfer of an FSA tract in Region 4 resulted in the establishment of Handy Brake National Wildlife Refuge (NWR). In 1997, Black Bayou Lake NWR was created via a 99 year lease with the City of Monroe. Also in 1997, the first purchase of the 19,000 acre Mollicy tract, a unit of Upper Ouachita NWR, occurred. These areas are managed by the WMD office because of location and historical involvement. The WMD currently oversees FWS interests on about 30,000 acres not including Partners agreements. In 1996, this station combined with D'Arbonne and Upper Ouachita to form the North Louisiana Refuge Complex. The office is located on D'Arbonne NWR 3 miles south of Rocky Branch.

HIGHLIGHTS

- Black Bayou Lake National Wildlife Refuge is established. Development begins and a "Friends" group is formed. (Sections 6h, 8b-Volunteer Program)

- After years of hard work and fluctuating hope, the first parcel of the 19,000 acre Mollicy tract is purchased. (Section 6h)

- For the first time in over 2 years all approved positions are filled. (Section 8b-Personnel)

CLIMATIC CONDITIONS

- Temperatures in northeastern Louisiana normally range between 20 and 70 degrees Fahrenheit during the winter months and between 70 and 95 degrees during the summer months. Mean annual precipitation is slightly more than 50 inches. The wettest months are February through April; the driest are August through October. Snowfall and ice storms are uncommon occurrences.

- 1997 began and ended wet. Nearly 10 inches of rain in January created ideal waterfowl habitat throughout the WMD. Mollicy was in especially good shape. Total precipitation was more than 20 inches above normal.

- Winter storm conditions on January 13 resulted in administrative leave for some employees. Nearly 2 inches of snow fell on December 14, but quickly melted. A low of 12 degrees was noted in January and a high of 103 occurred in August.

- 1997 precipitation was recorded at the WMD office. Other weather data were obtained from the Climatic Research Station, Northeast Louisiana University, Monroe, Louisiana.

Month	Temperature (deg. F)		Precipitation (inches)	
	Hi	Lo	1997	Avg.
January	81	12	9.74	4.94
February	78	32	8.91	4.54
March	87	36	6.71	5.22
April	87	36	9.06	5.03
May	91	48	5.47	5.14
June	96	60	2.36	3.33
July	102	65	3.22	4.64
August	103	61	3.25	2.60
September	96	54	1.91	3.42
October	91	34	6.71	2.37
November	78	23	4.72	3.98
December	74	32	8.23	4.96
		TOTAL	70.29	50.17

MONITORING AND STUDIES

1a. Surveys and Censuses

- In a normal year waterfowl use of the various tracts within the WMD is monitored by ground and aerial surveys throughout the fall and winter. The absence of an Assistant Manager for most of the year and more pressing obligations (Mollicy and Black Bayou Lake issues) precluded aerial surveys and ground counts were only cursory. The year began with larger than average waterfowl populations on most tracts. At least 125,000 ducks and 30,000 geese were present on Mollicy in January. The Creasy and Burress tracts held 30,000 ducks and Handy Brake NWR peaked at 8,000. Fall precipitation across north Louisiana was scattered and most areas were relatively dry, especially Mollicy. A December census revealed only 31,000 waterfowl there. The situation was aggravated by the failure of aging irrigation wells on other tracts. Increasingly the WMD is dependent on rainfall to provide wintering waterfowl habitat.

- Bald eagles commonly winter at Mollicy. In early December 7 immature and 2 adult birds were noted there.

- At least 1 red-cockaded woodpecker colony was discovered on the boundary of Black Bayou Lake NWR.

- Fisheries Biologist John Forester collected fish samples at Black Bayou Lake NWR on December 10, in a preliminary assessment of those resources on the new refuge.

1b. Studies and Investigations

- This office encouraged a Northeast Louisiana University (NLU) grant proposal entitled *Integrated Multidisciplinary Environmental Investigation of the Black Bayou Watershed, Ouachita Parish, Louisiana.* If funded by the Louisiana Board of Regents the $200,000 grant will provide critical baseline data needed to plan and manage Black Bayou Lake NWR.

- A Special Use Permit was issued to Dr. John Carr of NLU in June to conduct a study entitled *Turtles of Black Bayou Lake National Wildlife Refuge.* His stated objectives are to: 1) assess the composition of the turtle community inhabiting the lake; 2) examine the terrestrial phase of the annual life cycle, emphasizing the nesting ecology of the various species; and 3) obtain eggs of Spiny Softshells (*Apalone spinifera*) for use in a study of the ontogeny of sexual differentiation. Work began in 1997 and a preliminary report is pending.

- Handy Brake NWR is 1 of 26 NWRs included in a study to determine contaminant inputs into the Lower Mississippi River Alluvial Ecosystem. The study conducted by North Carolina State University is entitled *Effects of Contaminants on Fish and Wildlife in the Mississippi River Alluvial Plain.* A progress report released in October lists analysis of sediment samples. The sum of combined DDTs at 3 sites at Handy Brake ranged from 3.04 ng/g to 12.45 ng/g. Combined PCBs ranged from 0.00 ng/g to 10.83 ng/g.

HABITAT RESTORATION

2a. Wetland Restoration:

(1) On-refuge

- A total of 673 acres were replanted to bottomland hardwoods on FSA fee title and easement lands during the year.

Tract	Parish	Acres Reforested
Harden	East Carroll	22
Love	East Carroll	113
Adcock	Richland	400
Brown	Morehouse	36
King	Morehouse	102

The Brown tract was planted as a result of the landowner illegally clearcutting the easement. Much of the Love tract was replanted due to the failure of a direct seeding effort several years ago.

- Historically, native cane was a critical ecosystem component in the Lower Mississippi Valley. In November a cane restoration project was implemented when a contractor planted a 1 hectare cane stock plot on the Burress tract in Morehouse Parish.

Native cane restoration project. LWD97-1; 12/97; KO

(2) Off-refuge

- A total of 604 acres on 6 tracts were replanted to bottomland hardwoods through the Partners for Wildlife program.

Tract	Parish	Acres Reforested
Cajun Electric	DeSota	423
Griffin	Ouachita	20
Scott	Natchitoches	85
Carver	Natchitoches	41
Welch	Claiborne	15
Barksdale AFB	Bossier	20

Natural species diversity is a goal of reforestation. LWD 97-2; 12/97; KO

- A 36 inch water control structure was installed on the Cajun Electric project to restore 40 acres of wetlands. Two water control structures were installed on Barksdale Air Force Base to create an 85 acre moist soil unit.

Cain and Cook - Barksdale Air Force Base wetland restoration. LWD 97-3; 8/97; JH

2b. Upland Restoration

- No activity in 1997.

2c. Deep Water/Riverine Restoration

- No activity in 1997

HABITAT MANAGEMENT

3a. Water Level Management

- A contractor for the city of Monroe completed construction of a water control structure on the outlet of Black Bayou Lake. The city will operate this structure as per a written management plan that utilizes the lake as a secondary source of municipal water. Implementation of the plan should have no significant impact on the refuge.

- Management of other water levels throughout the WMD is associated with moist soil units.

Pumped shorebird unit, Burress FSA tract. LWD 97-4; 8/97; KO

3b. Moist Soil Management

- Numerous impoundments, water control structures, wells and miles of levees exist on fee title tracts and easements scattered across the WMD. Much of the summer field work involves maintenance of these facilities. Drawdowns of impoundments are staggered throughout the spring and early summer to provide a continuum of shallow water habitats and to stimulate production of desirable moist soil plants. Drawdowns began in May and as usual others held water until late June. Moist soil units on Creasy and Burress/King tracts were disced for shorebird use and pumps were turned on July 24. In October structures throughout the WMD were closed in anticipation of winter rains and in early November the waterfowl unit at Creasy was pumped up. In general moist soil units were in good shape although failing irrigation wells on critical tracts precluded timely flooding.

3c. Graze/Mow/Hay

- No activity in 1997

3d. Farming

- Much of the acreage within the WMD consists of former marginal croplands. Most of this area is being converted back to forest lands by plantings or natural succession. Mollicy is presently a 19,000 acre farm. As acquisition there continues co-op farming will be a major strategy until much of the area is reforested.

3e. Forest Management

- Most forests on the WMD were planted by the staff and are thus less than 8 years old. Judicious cuttings will be reserved for the next generation of managers. Some older forest occurs in riparian areas around Black Bayou Lake and adjacent the Ouachita River on Mollicy. Harvest for conservation purposes is unnecessary at this time.

- In February a landowner illegally clearcut several acres of timber on a Morehouse Parish easement (see Section 6a).

3f. Fire Management

- No activity in 1997.

3g. Pest Plant Control

- Years of neglect prior to the establishment of the refuge at Black Bayou Lake resulted in a serious infestation of exotic water hyacinth (*Eichhornia crassipes*). Limited force account spraying with Rodeo began in late July. La. Dept. of Wildlife and Fisheries personnel assisted

with 2,4-D in October. A concerted effort to control this pest is necessary within the next 2 years if the refuge is to reach its potential.

- Several species of native plants are pests in moist soil units, ditches and impoundments. Willow, cocklebur, coffeeweed and baccharis are notorious. Control is via mechanical means.

FISH AND WILDLIFE MANAGEMENT

4a. Bird Banding

- The North La. Refuges Complex was assigned a pre-season wood duck banding quota of 125. WMD folks banded 27 adult hens in nest boxes. D'Arbonne NWR personnel completed the quota using rocket nets.

4b. Disease Monitoring and Treatment

- No activity in 1997.

4c. Reintroductions

- No activity in 1997.

4d. Nest Structures

- About 70 wood duck nest boxes are maintained on various tracts across the WMD. A MOU with Riverwood International included provisions to place 400 boxes on their lands in north Louisiana. Most are still functional. At least 200 more boxes have been distributed to the public in the past 5 years through the Partners for Wildlife program. In January Biologist Cook completed coordination of a nest box program on Lake Providence and Swan Lake in East Carroll Parish where 40 boxes were installed.

4e. Pest, Predator and Exotic Animal Control

- No activity in 1997.

COORDINATION ACTIVITIES

5a. Interagency Coordination

- The nature of the work and the geographic area involved in the daily business of this office requires constant coordination with many entities, especially other government agencies. In 1997 we conducted business with: Army Corps of Engineers, U.S. Air Force, EPA, La. DEQ, La.

Dept. of Wildlife and Fisheries, FSA, NRCS, U.S. Attorney's Office, GSA, Forest Service, several police juries, school boards, municipalities, local law enforcement agencies, and others.

- Manager Ouchley spent considerable time at city council meetings and coordinating with Monroe city officials during and after the establishment of Black Bayou Lake NWR.

- A $24,000 grant for start-up development at Black Bayou Lake was solicited and received from the National Fish and Wildlife Foundation.

- Meetings were held with researchers from the National Wetlands Research Center and Louisiana State University (LSU) to seek assistance in developing restoration plans for Mollicy.

- Assistance was provided to Dr. Joe Saunders, the Louisiana regional archaeologist, in the location and recording of archaeological sites throughout the WMD.

- Biologist Cook continued coordinating an extensive research effort conducted by the Louisiana Tech University (La. Tech) Forestry Department to monitor reforestation on the Cajun Electric Partners project.

- Cook also provided input into several wetlands related studies on Barksdale Air Force Base conducted by LSU. The WMD office provides technical assistance to Barksdale on a routine basis.

- Cook served on the La. Tech Environmental Advisory Council.

- Ouchley served on the Ouachita Loop Major Investment Study Steering Committee.

5b. Tribal Coordination

- No activity in 1997.

5c. Private Land Activities

- Biologist Cook spent a considerable amount of time in 1997 coordinating a significant Partners project with Cajun Electric Company on a 4,200 acre tract of farm and pasture lands in Red River

River and DeSoto Parishes. The company originally purchased the site to build a coal fired generating plant but later dropped the plans. They have agreed to reforest most of the tract to native bottomland hardwoods which will make the project the largest private venture of this type in the country. In 1997, Cook supervised site prep work and planting contractors to complete Phase 3 (423 acres) of the project. Cajun Electric received a national "Partner of the Year" award in the corporate division in July for the project.

Contractor planting seedlings on Cajun Electric Partners project. LWD 97-5; 1/97; HC

- A private lands program review at this office was conducted in April by Ronnie Haynes and Jim Brown from RO and Andy Dolan from Lafayette ES. Several FSA and Partners projects in northeastern Louisiana and in the Red River valley were evaluated. The resulting report indicated that all was in good order.

- A comprehensive Memorandum of Understanding with Riverwood International Corporation was signed in 1994. Riverwood owned over 500,000 acres of forest lands in north Louisiana and south Arkansas. The MOU contains elements of resource protection (protecting rare plants, scenic stream enhancement, committing to BMPs), resource enhancement (providing $5,000 to be matched with FWS funds to install 400 wood duck nest boxes on Riverwood lands), and resource education (providing $1,500 per year to be matched with FWS funds to conduct annual Project WILD/Learning Tree workshops for area teachers). In 1996, Riverwood's forest lands

to Plum Creek, a timber company from the Pacific Northwest and new to the South. Initial contacts with Plum Creek are encouraging and they appear willing to abide by the MOU. In 1997 they funded the fourth annual environmental education workshop.

- Through the Partners for Wildlife program 604 acres were reforested in 6 projects in 1997.

- Numerous small scale requests for habitat related technical assistance on private lands were addressed.

RESOURCE PROTECTION

6a. Law Enforcement

- Until October the Assistant Manager position had been vacant for 2 years. The person in this slot is responsible for addressing law enforcement problems specific to FSA fee title tracts and easements, particularly farming trespass and destruction of survey markers and signs. For 2 years the program deteriorated significantly. AM Hammond began to address the problems immediately upon his arrival..

- Law enforcement issues in 1997 include the following:

In January a hunter brought in an injured peregrine falcon that he found on the Mollicy levee. The bird had been shot. She was carried to a local rehaber who sent the bird to a professional facility in Minnesota where she was eventually euthanized. Leg bands determined that she had hatched on a skyscraper in Minneapolis in the spring of 1996.

On February 27, this office was notified of ongoing timber trespass on the former Brown easement (currently owned by Dennis Martin) in Morehouse Parish. An immediate investigation revealed a logging contractor in the process of removing all merchantable timber from the tract. Five loads of pulp wood and logs had already been delivered to mills and a large pile of logs were awaiting transport. The contractor was ordered off the area, all logs and loading slips were seized, and payments to the landowner were short-stopped. Charges were filed against the owner who had been warned of other easement violations in the past. When the defendant failed to appear for arraignment the U.S. Magistrate issued a warrant for his arrest. He was arrested in November and posted bond. A new arraignment is pending.

Ouchley completed law enforcement refresher training and semi-annual firearms qualification during the year.

The outboard motor restriction (50 horsepower limit) at Black Bayou Lake NWR was controversial when first implemented. Support for the regulation was in the majority however by at least a 3 to 1 margin.

In April neighbors at Handy Brake NWR were warned about minor but continuing farming trespass.

In August arsonists attempted to burn the Handy Brake NWR observation tower. The Morehouse Parish Sheriff's Office, using a paid informant, apprehended 7 people involved in the crime. Because most were juveniles, the District Attorney declined prosecution. The facility was repaired at a cost of $750 and re-opened to the public.

Refuge specific fishing regulations for Black Bayou Lake NWR were published in the September 9, edition of the Federal Register.

In late November an easement violation on the Prissock tract in West Carroll Parish was discovered. It involved illegal earth removal.

Two old civil cases involving fires on the Adcock easements resurfaced in a new solicitor's office in November.

Easement violation (earth removal) on Prissock tract. LWD 97-7; 11/97; AH

with Black Bayou Lake, a shallow cypress-studded lake lying about 4 miles north of Monroe. Initial acquisition efforts began but soon halted when the La. Dept. of Wildlife and Fisheries indicated an interest in acquiring the property. Politics, escalating land values and other factors

intervened and the State eventually backed out of the project. From an FWS perspective the issue resurfaced in May 1996, when the City of Monroe contacted this office about managing the area if they bought it. Black Bayou Lake serves as the city's secondary source of water and they had funds to protect such areas. However, they had no interest in managing the property. Numerous meetings resulted in a plan to create an overlay refuge on the city's property via a 99 year lease. In October 1996, the city purchased nearly 1,700 acres of the core area for $1.725 million. On January 14, 1997, the Monroe City Council voted to lease the property to FWS for 99 years for $1 to create Black Bayou Lake NWR. The refuge was formally established on June 16, 1997, when ARD Haskett signed the lease.

- In August, 200 acres were added to Black Bayou Lake NWR with the finalization of a free lease with heirs of the Phillips estate.

- Numerous meetings were held during the year with realty personnel, adjacent landowners, and local politicians to lay the groundwork for acquiring other tracts within the Black Bayou Lake NWR acquisition boundary by fee title, lease or easement.

- On September 17, the Migratory Bird Conservation Commission approved acquisition of Mollicy Farms to become a unit of Upper Ouachita NWR. On September 30, a purchase agreement with the landowner was signed to buy 6,920 acres and lease the remaining 12,000 acres in the tract. On December 17, years of hard work and fluctuating hopes at this office came to fruition with the first purchase at Mollicy. A second parcel is scheduled for acquisition in early 1998.

- Transfer of FSA tracts in fee title to FWS in this area has virtually ceased. Only 1 small tract has been conveyed in the past 4 years. Fee title (FSA) tracts as of December 31, 1997, include:

Tract	Parish	Acres
Harden	East Carroll	31
Lewis	West Carroll	609
R&A Farms	Richland	120
A. Adcock	Richland	306
W.R. Adcock	Richland	356
Handy Brake NWR	Morehouse	466
King & Iverson	Morehouse	876
King	Morehouse	332
Burress	Morehouse	668
Creasy	Morehouse	1,480
	TOTAL	5,244

- The 1,567 acre Caldwell tract was dropped from the "free lease" program in 1997 because the tenant farmer repeatedly failed to abide by terms of the lease which required him to provide 250 surface acres of water for wintering waterfowl.

with International Paper Co. exists on land adjacent Handy Brake NWR and affords public access. The Pipes and Blanks leases provide excellent wintering waterfowl habitat on agricultural land and the Norris lease protects a large wood duck roost. Leases excluding those associated with Black Bayou Lake NWR include:

1997 Lease	Parish	Acres	Cost
International Paper	Morehouse	35	Free
Mollicy	Morehouse	15,000	$30,000
Pipes	Morehouse	320	Free
Blanks	Morehouse	320	Free
Norris	Ouachita	960	Free
Caldwell (term.)	Caldwell	1,567	Free
	TOTAL	18,202	$30,000

- No new FSA conservation easements were acquired in 1997. The unrecorded J.B. Johnson tract in West Carroll Parish continues to be mired in contaminant survey problems. Currently the WMD oversees 38 easements totaling 2,271 acres.

- The 1996-97 lease on 15,000 acres of the Mollicy tract expired in September. A 35 acre lease with International Paper Co. exists on land adjacent Handy Brake NWR and affords public access. The Pipes and Blanks leases provide excellent wintering waterfowl habitat on agricultural land and the Norris lease protects a large wood duck roost. Leases excluding those associated with Black Bayou Lake NWR include:

1997 Lease	Parish	Acres	Cost
International Paper	Morehouse	35	Free
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Caldwell (term.)	Caldwell	1,567	Free
	TOTAL	18,202	$30,000

- No new FSA conservation easements were acquired in 1997. The unrecorded J.B. Johnson tract in West Carroll Parish continues to be mired in contaminant survey problems. Currently the WMD oversees 38 easements totaling 2,271 acres.

- A road easement was negotiated and finalized with Georgia-Pacific Corporation in October for public access across their property to the southeast boundary of Mollicy

PUBLIC EDUCATION AND RECREATION

7a. Provide Visitor Services

- International Paper Co. provided a $10,000 grant that was matched with FWS challenge cost share funds to construct a handicapped accessible fishing pier at Black Bayou Lake NWR. The City of Monroe provided engineering and contracting services for the project. An earthen access ramp was built in August and construction of the 350 foot pier began in December. Interpretive panels to be installed on the pier were purchased from Wildlerness Graphics, Inc. with funds from a NFWF grant.

- An objective of the Friends of Black Bayou group is to raise funds for the development of an environmental education center on the new refuge. Several thousand dollars have been raised for the purpose.

- A boat launch fee program was implemented at Black Bayou Lake NWR. Visitors are charged $2 per launch through a self-service system.

- Extensive repairs were made on the Handy Brake NWR wildlife observation tower as a result of vandalism. See Section 6a.

Construction of earth ramp leading to Black Bayou Lake fishing pier site.
LWD97-8; 10/97; KO

7b. Outreach

- Manager Ouchley spoke at numerous meetings of civic clubs, garden clubs, scout groups, city councils, and at media events throughout the year as outreach efforts.

- Biologist Cook interacted with dozens of individuals providing technical assistance and information concerning the Partners for Wildlife program.

- The fifth annual Project WILD/Learning Tree workshop sponsored by this office and Plum Creek Timber Co. was held March 20-21, at Pine Wood Girl Scout Camp. Ten area teachers participated.

- Friends of Black Bayou, Inc. was established and immediately began extensive outreach efforts. See Section 8b - Volunteer Program.

PLANNING AND ADMINISTRATION

8a. Comprehensive Conservation Planning

- An Interim Comprehensive Management Plan, Compatibility Determination, and Recreation Funding Analysis were completed in February for the Mollicy Farms acquisition.

- Considerable time and effort were spent in preliminary planning of management and development of the new Black Bayou Lake NWR and the Mollicy tract.

8b. General Administration

	Funding - 1997	
- Refuge Operations	1261	$186,000
- Private Lands	1121	$261,400
- Maintenance Management	1262	$ 20,000
- Disaster Appropriation	2959	$ 92,000
	TOTAL	$560,000

- Funding in FY 97 was slightly better than FY 96 but the new complex Project Leader's salary was added as an expense. Salary savings from vacant WMD positions carried us through. The $92,000 in disaster appropriations was for spring flood damage. Most will be obligated to purchase gravel on washed out roads.

- A lack of fire money (9120) at this station for the past 4 years has contributed to increased fire hazards on various WMD tracts. These funds were primarily used to maintain firebreaks.

Personnel

- In April, Danny Cain was selected to fill the PFT Engineering Equipment Operator position. For the first time in over 2 years the Assistant Manager position was filled when Andrew Hammond entered on duty October 26.

	Permanent Full-time	Temporary	Total FTEs
CY 97	5		5
CY 96	4 (1 vacant)	1	5
CY 95	5 (2 vacant)		5
CY 94	5		5
CY 93	5		5

- 1997 Staff

Ken Butts, Project Leader, GM-13, EOD 11/10/96, PFT
Kelby Ouchley, Refuge Manager, GS-12, EOD 09/09/90, PFT
Andrew Hammond, Assist. Refuge Manager, GS-11, EOD 10/26/97, PFT
Harry Cook, Wildlife Biologist, GS-11, EOD 11/17/91, PFT
Danny Cain, Eng. Equipment Operator, WG-08, EOD 05/12/96, PFT
Carolyn Richardson, Office Assistant, GS-06, EOD 02/10/92, PT

Volunteer Program

- Three meetings were held in August to organize a Friends of Black Bayou (FOBB) support group. Officers were elected, goals were established, and fund raising plans to support the refuge began immediately. In October, FOBB conducted a "Beans on the Bayou" fund raiser and fed nearly 200 people on the new refuge. At the end of 2 months the group had raised over $5,000 for development of an environmental education center. At year's end other projects continued to bring in money, volunteers and general support.

Friends of Black Bayou at "Beans on the Bayou" fund raiser. LWD 97-6; 10/97; KO

- A ceremony was conducted on June 13, when officials from International Paper Co. presented a $10,000 check to Manager Ouchley who in turn gave it to Monroe Mayor Abe Pierce for construction of the Black Bayou fishing pier/boardwalk at Black Bayou Lake NWR.

- Volunteers assigned to D'Arbonne NWR occasionally worked for the WMD.

Safety

- Two accidents occurred on the WMD in 1997, both to staff members. In November, Equipment Operator Cain sustained a neck injury in a fall from a dump truck. He remained in workman's comp status at year's end. In December, Biologist Cook twisted his knee while exiting from a boat and was out 2 weeks.

- Cain, Cook and Ouchley completed the required 24 hour boating safety training in April. Cook and Ouchley completed aviation safety training in 1997 also.

Equipment and Facilities

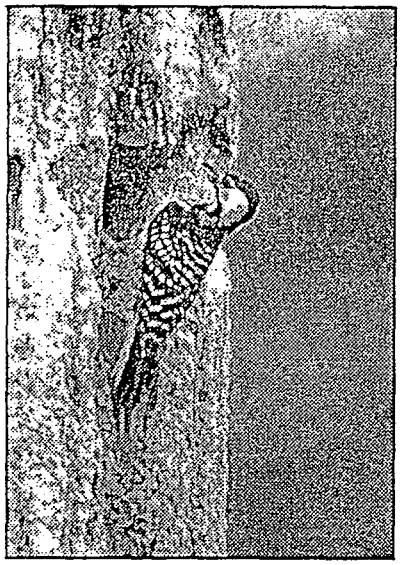
- Development of the new Black Bayou Lake NWR began in earnest. Fences and an old building were removed, parking lots were built, and an entrance sign was installed. Boundary posting began. Because the boundary is on a contour line, literally hundreds of corners must be marked. A contractor began building a 350 foot fishing pier (see Section 8a).

- Two large culverts were installed on the Creasy tract. See also Sections 2c, 3b, 6a, and 8a.

- Equipment received as new or replacement items in 1997 included:

1997 Ford Ranger 4x4 pickup
1997 Chevy Blazer 4x4 SUV
John Deere 5300 tractor w/front-end loader
Aquatic spray pump unit
Micron desktop computer

The News-Star
3A • Thursday, Jan. 23, 1997



The News-Star/Paul Guillory
A female red-cockaded woodpecker tends her nest in the D'Arbonne National Wildlife Refuge north of West Monroe.

Woodpecker study results take wing

By PATRICE SAWYER
Staff Writer

ENVIRONMENT

Results from a study at the D'Arbonne National Wildlife Refuge could increase the survival rate of the red-cockaded woodpecker.

Wildlife officials are hoping the study will provide information on whether the red-cockaded woodpecker, an endangered species, can be swapped between different environments to breed and increase in numbers.

Northeast Louisiana University biology professor Richard Buchholz is coordinating the study. He said only five groups of the woodpecker are populating the refuges.

"The population at the D'Arbonne National Wildlife and Upper Ouachita Wildlife refuges are too small. (Wildlife officials) are worried those populations will inbreed and become extinct," Buchholz said.

> ***(Wildlife officials) are worried those populations will inbreed and become extinct.***
>
> — Richard Buchholz, NLU professor

The study will involve taking nestlings — birds too young to leave the nest — and moving them to other habitats. Buchholz said the researchers will follow the progress of the nestlings to make sure they are not harmed so they will grow up and breed in the population.

He said information gained from the study could be used to increase the number of red-cockaded woodpeckers across the Southeast.

Breeding season is in the spring, and Buchholz said the study could begin by May if private landowners agree to participate.

Lee Fulton, manager of the Upper Ouachita and D'Arbonne national wildlife refuges, said the red-cockaded woodpeckers are considered an endangered species because they build their homes in pine trees.

The trees must be at least 70 years old before they are large enough to be hollowed out.

"There are not too many trees that old around anymore," Fulton said.

Fulton said refuge officials will be closely monitoring the woodpeckers involved in the study.

The News-Star
3A • Friday, May 9, 1997
Monroe, Louisiana

Saturday is the day for birds, families

Strap on some comfortable shoes, get out your binoculars and head out to your favorite nature spot.

In case you haven't heard, Saturday is International Migratory Bird Day.

Northeast Louisiana Bird Club members are inviting area residents to join them at Forsythe Park for a morning of communion with their feathered friends.

PATRICE SAWYER

ENVIRONMENT

You will have to leave the comfort of your Craftmatic adjustable bed. Birdwatchers are an early lot. They plan to meet in the parking lot next to the children's park at 7 a.m.

They will visit the D'Arbonne National Wildlife Refuge and other area locations to observe and identify birds. No expertise in bird identification is necessary.

Attendees will divide into groups and go to different areas for birding. Michael Stroeh, assistant manager at D'Arbonne and president of the bird club, said first-timers are welcome.

If you don't know a black chinned hummingbird from a chestnut sided warbler, don't worry.

"We'll have very active birders with us. A lot of people have a lot of questions about the birds they see, and they will be there to tell them what type of bird of it is," Stroeh said.

Stroeh said birding has become very popular.

It is estimated that one out of every four Americans watches birds, and 24 million of these people travel to specifically see them. Bird-watching is more than a hobby. It's big business.

The U.S. Fish and Wildlife Service estimated that bird watchers spent $51 million in Louisiana for everything from bird seed to birding trips, based on 1991 figures.

Stroeh said people across the state, including some Monroe residents, traveled to Cameron two weeks ago to see birds come into the shore from the gulf. Apparently, several species of birds rest on the shore during their trip from South America.

Avid bird watchers enjoy spotting new species, which is part of the fun, according to Stroeh.

"Some birds are very elusive. They're hard to find, so when someone sees a new one it's very exciting," Stroeh said.

If the bird-watching bug bites you after Saturday, you can come back the following weekend. Stroeh says the bird club meets every Saturday morning.

Big plans on tap for Black Bayou Lake

Editor's note: This is the second in a two-part series on Black Bayou Lake.

Standing on the shores of beautiful Black Bayou Lake, it doesn't take too much imagination to picture what the area will look like this time next year, or the years that follow.

GLYNN HARRIS

On the 40-acre site where the boat launch is located, my mind's eye can see an environmental education center with a class of grade school youngsters getting a hands-on view of nature; the fresh, damp coolness of an arboretum where plants native to the area are on display; someone in a wheelchair sitting at the end of a handicapped-accessible fishing pier dunking crickets.

Out in the lake, I can hear the chatter and laughter as a caravan of canoes works its way among the cypresses. Across the way, a family strolls leisurely along a nature trail, stopping to watch a prothonotary warbler flitting among the shrubs.

All this and more will become reality in the not-too-distant future, according to Kelby Ouchley, manager of the new Black Bayou Lake National Wildlife Refuge.

"The City of Monroe, which owns practically all the lake plus some surrounding acreage, has given the U.S. Fish and Wildlife Service a free 99-year lease on the area for the purpose of establishing a refuge," Ouchley said.

"Our agency will take over the area and the refuge will be officially established sometime next month. We already have several projects under way with others waiting for approval or for funding."

Some of the projects slated for Black Bayou Lake are:

■ **Environmental Education Center:** A two-story plantation home located just off the property was owned by the previous owners of the property. They have donated the building for the purpose of moving it where the launch is located and transforming it into an education center.

"We are currently looking for sponsors and volunteers to help us fund and promote this project," Ouchley said. "We welcome input from anyone with any interest in helping us get the building moved and renovated.

"We are currently utilizing the services of students in the Northeast Louisiana University building construction department who are working to determine what it will actually cost to move and renovate the building."

■ **Handicapped-accessible fishing pier/interpretive boardwalk:** "This summer the pier-/boardwalk will be built with $10,000 donated by International Paper Company and matched by the Fish and Wildlife Service. We'll build the pier as far out in the lake as this $20,000 will allow," Ouchley said.

"The pier will be constructed in such a manner that people who are handicapped can utilize the entire length of the pier for fishing, nature study, bird watching and such."

■ **Arboretum:** An area where plants native to the area will be grown and displayed for the public will be built some time in the near future, According to Ouchley.

Other projects include nature trails around the lake and canoe trails on the lake — markers will allow canoers not familiar with the lake will be able to find their way around the cypresses and button willows.

Black Bayou Lake has long been a quality fishery, and continued emphasis will be on this sport.

"We will encourage anglers to use the lake and with its close proximity to Monroe, I imagine we'll see plenty of fishermen," Ouchley said.

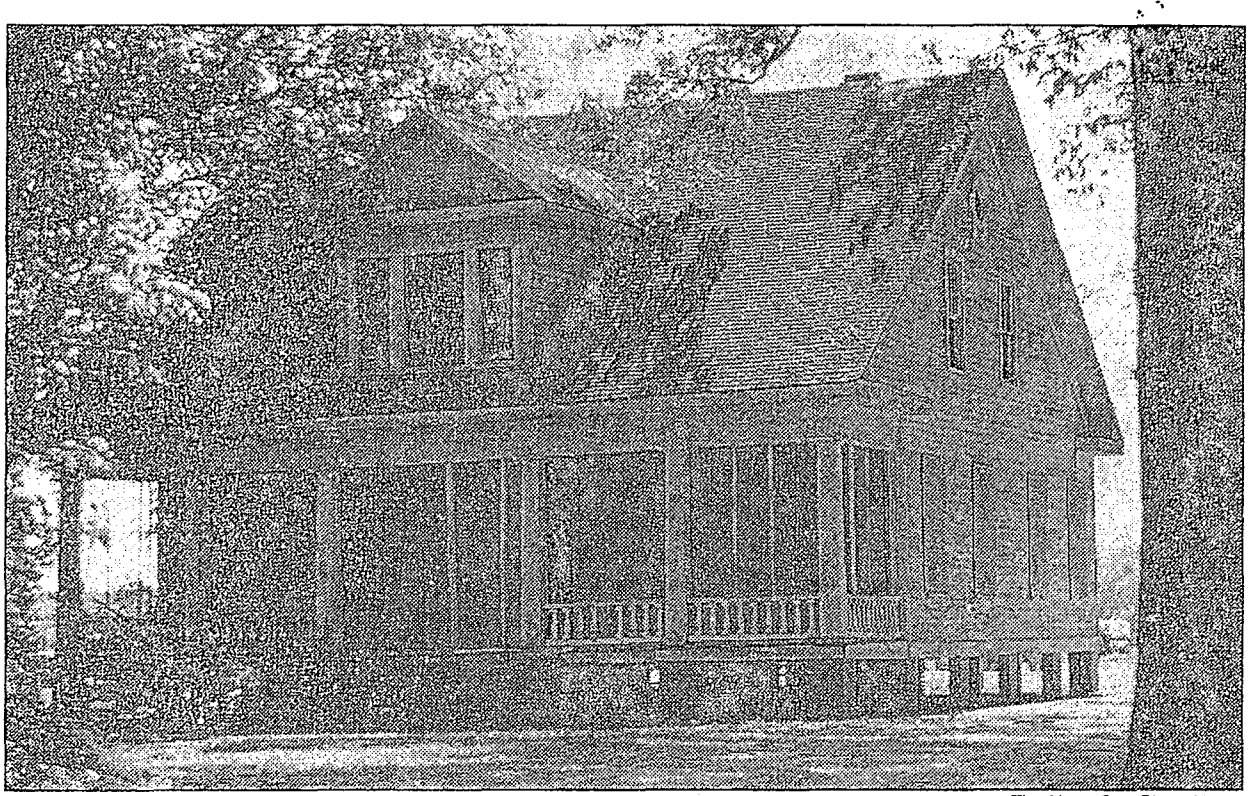
Once the U.S. Fish and Wildlife Service takes over, the launch fee will be $2 per day. A receptacle will be avilable to hold the money and anglers will tear off tags to place in their vehicles.

Night fishing will not be allowed and outboard motors bigger than 50 horsepower are not permitted.

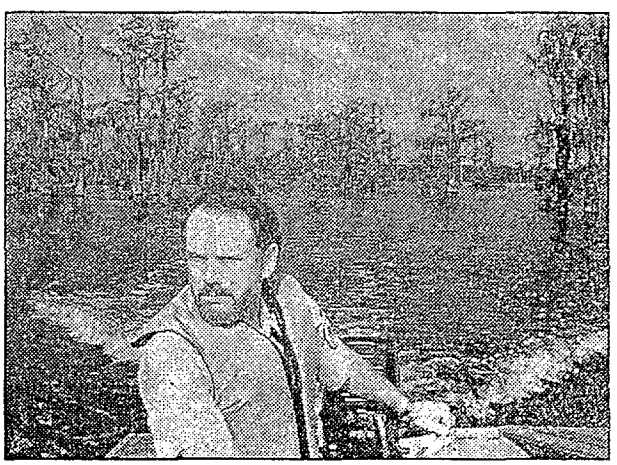
"While there have been some objections to the outboard motor restriction, our calls are running three to one in favor of restrictions," Ouchley said. "In fact, many people are asking for the horsepower restriction to be lowered. On most national wildlife refuges that contain a lake, no motor over 25 horsepower is allowed, so we have actually been quite liberal in allowing motors up to 50 horsepower."

Ouchley noted that in many ways, Black Bayou Lake National Wildlife Refuge will be unique.

"Because this refuge is located so near a major metropolitan area,



The News-Star/Glynn Harris



The old house above will soon be converted into an education center at the Black Bayou Lake National Wildlife Refuge. Kelby Ouchley, right, will manage the refuge and oversee the projects and improvements planned for the area.

we will be able to do some things that we can't do on other remotely located refuges," he said. "We don't have anything else like this around here. We can reach some groups we otherwise couldn't do. For example, it's not easy to get a group of school children out to some of our other refuges because of remoteness and distance involved. On Black Bayou Lake, however, this is not a problem with its location so near the city."

Ouchley said credit should go to city officials for seeing the potential benefits of Black Bayou Lake.

He also said the efforts of Monroe businessman George Mouk to help make the lake public again cannot be overlooked.

"George is not the only one, but he has been the one who has spearheaded this effort," Ouchley said. "From the very beginning. George was out drumming up public support to save this area for the public. Long before I came to this area to work, George was putting together packages of information, addressing civic clubs and anyone else he could get to listen. Even since we've become involved, he continues to be supportive, volunteering for any chore we might have that he can do. We owe an awful lot to George Mouk."

I have seen the diligence with which Mouk has worked on the Black Bayou project. My mail has often included a note or copy of a document he has shared relating to efforts to secure Black Bayou Lake for the public. I have to wonder if Black Bayou Lake would have ever come back into public ownership had it not been for the untiring efforts of this man.

It would seem only fitting, in my view, that when the center is completed, it be given a fitting name. The George Mouk Environmental Education Center has a nice ring to it.

Refuge volunteers

Persons interested in volunteering their time or resources toward the environmental education center, arboretum, etc., on Black Bayou Lake Refuge may contact Kelby Ouchley, U.S. Fish and Wildlife Service, Rt. 2, Box 401-A, Farmerville, La. 71241, or call 726-4400.

Glynn Harris is the outdoors editor for the News-Star. Write to Glynn at P.O. Box 1102, Ruston, La., 71273, or call him at 251-9808.

The News-Star

3A • Saturday, July 12, 1997

Woodpeckers OK after swap

■ Researchers pleased with survival rate of red-cockaded birds that were translocated between different environments.

By PATRICE SAWYER
Staff Writer

The woodpeckers have left their nests at D'Arbonne National Wildlife Refuge, and that's just fine with wildlife officials.

ENVIRONMENT

Researchers and wildlife officials completed a study this summer that monitored the survival rate of red-cockaded woodpeckers that were swapped between different environments. They were pleased with the results.

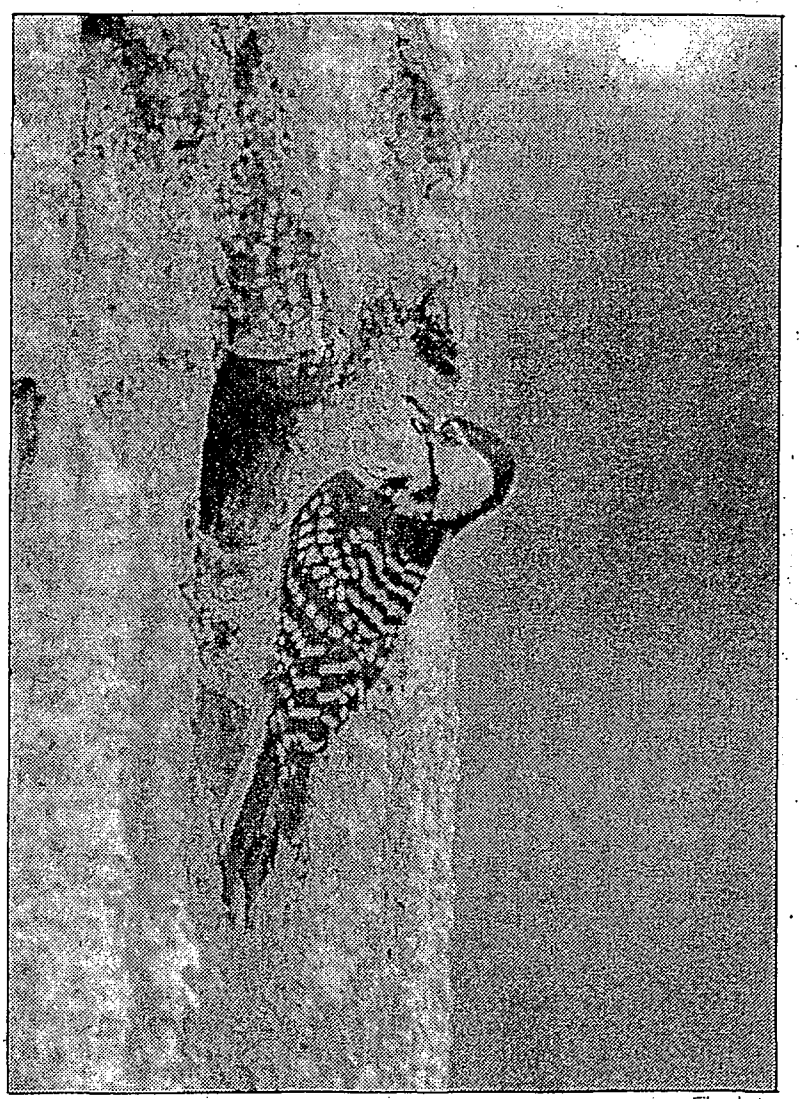
"The project was a success," said Northeast Louisiana University graduate student Monica Wallace. "They survived the translocation, and they survived to leave."

The study involved taking nestlings — birds too young to leave the nest — and moving them to other habitats. Information gained from the study will enable wildlife officials to swap the red-cockaded woodpeckers, an endangered species, between environments so they can breed and increase in numbers.

Wallace said they transferred eight nestlings into nests occupied by other nestlings. Then they tracked the survival rates of the nestlings.

"The study would help to find ways to manage the population," Wallace said.

Red-cockaded woodpecker populations are so small that wildlife officials are worried they will inbreed and become extinct. Research at D'Arbonne could be used to increase the number of those woodpeckers across the Southeast.



File photo

The red-cockaded woodpecker is an endangered species.

Michael Stroeh, assistant manager at D'Arbonne, said his job now is to regularly check to make sure the woodpeckers have adjusted well.

"I'm going out to see who's who out there, checking survival rate of the nestlings. It also tells me if I had anything wrong," Stroeh said.

Stroeh said he found a woodpecker from Felsenthal Wildlife Refuge in Crossett, Ark. The woodpeckers are usually marked with a band to keep track of them.

Paper companies such as Plum Creek, Potlatch and Georgia-Pacific donated land to use in the study.

Woodpeckers moving on

Thumbs up to researchers and wildlife officials who have been working — apparently successfully — to transfer red-cockaded woodpeckers from one habitat to another.

Several baby woodpeckers were taken from nests at D'Arbonne National Wildlife Refuge and placed in another.

"They survived the translocation, and they survived to leave," said Monica Wallace, a Northeast Louisiana University graduate student.

What makes this so important is that these particular birds are on the endangered species list. If they can be moved from place to place, that means their adaptability will help them survive.

The project also saw paper companies like Plum Creek, Potlatch and Georgia-Pacific work with wildlife interests to keep the woodpeckers around.

The News-Star

3A • Tuesday, July 29, 1997

Monroe, Louisiana

New group looks for bayou help

Kelby Ouchley's got a great job.

He drives a truck through the woods, stopping occasionally for "duties as required."

MARK RAINWATER

Growing up in West Monroe, Ouchley realized early on he wanted to work in the woods. An undergraduate degree from NLU and post-graduate studies at Texas A&M got him a gig with the U.S. Fish and Wildlife Service.

About 10 years ago, he was refuge manager when the agency opened its facilities in Tensas Parish. A few years later, they offered him the opportunity to return to this area and manage the Bayou D'Arbonne Refuge in Ouachita and Union parishes.

With a head full of knowledge and an armload of degrees, a few months ago he admitted all that learning hadn't helped him at all with the biggest task he faces as manager of the recently opened Black Bayou National Wildlife Refuge.

"They didn't teach us how to beg, borrow or steal," Ouchley said with a sheepish laugh.

He's got big plans for the place. Nature trails and handicapped-accessible fishing piers.

What he doesn't have right now are the resources to begin implementing the plans.

This is where you can help.

Since the Wildlife Service got involved in the refuge about a year ago, Ouchley said he's been contacted by dozens of people wanting to volunteer time and talents.

"They're not people who necessarily have the financial means to help," Ouchley said. "Rather, they just want to volunteer their efforts in assisting us develop the refuge."

For lack of a better phrase, the Friends of Black Bayou are heretofore being called to arms.

Ouchley's planned an organizational meeting for volunteers Aug. 7 at 7 p.m. in *The News-Star* Community Room, 411 N. Fourth St. in Monroe. He'll clue the group in on upcoming projects and plans for the park.

There are two things the group needs to do right out of the chute.

I can't believe I'm actually saying this.

They need an attorney to help incorporate the group as a nonprofit organization. This will enhance fund-raising efforts because contributions will be tax-deductible.

Then they'll need donations. Fifty thousand dollars real quick would do the trick of moving a big old farm house Ouchley plans to use as the focal point of the refuge. He hopes within two or three years to have federal funds to renovate the house.

But unless something's done soon to save it, it may be too late. Last winter — the house has more than 100 winters behind it — an oak limb crashed through a corner of the house. Unless a new roof is put on the house, another winter of exposure to the elements may cause structural damage too great to repair.

If you've got a few thousand spare dollars lying around, or if you'd just like to go out and help clean up, come to the Friends meeting.

Better yet, go to the lake, look for the house — continue straight past the entrance to the boat launch of U.S. 165, 1.5 miles north of Century Telephone — and then come to the meeting.

You'll get hooked on helping Black Bayou.

Mark S. Rainwater covers Monroe city government for The News-Star. *If you have some interesting news or just want to voice your opinion, write him at* The News-Star, *P.O. Box 1502, Monroe, La. 71201-1502 or call him at (318) 362-0276.*

The News-Star

3A • Wednesday, July 30, 1997

Monroe, Louisiana

Volunteers sought for refuge

By MARK S. RAINWATER
Staff Writer

He relaxes with his arms folded across his knee, his foot resting on the porch railing of a 100-year-old house.

EN[illegible]NMENT

Kelby Ouchley looks back over his shoulder and shakes his head at the gaping hole from where an oak took out one corner of the house. He hopes the house can be saved and serve as the centerpiece of plans for the Black Bayou Lake National Wildlife Refuge.

But first, Ouchley needs two things and not necessarily in this order — money and volunteers.

He is beginning to organize the latter, hoping that will help with the former.

Ouchley, who serves as manager of the U.S. Fish and Wildlife Louisiana Wetlands District, defines low-key. But he becomes animated when he talks about plans for the refuge: nature trails, a handicapped-accessible fishing pier into the lake, an arboretum and a resource center staffed by volunteers.

"But this is the cornerstone of public-use development at Black Bayou," Ouchley said, motioning to the house. "The trails, arboretum, boardwalk — everything — will emanate from the house. This is the key."

Ouchley is playing a game of beat the clock as he begins implementing plans for the 1,700-acre refuge located two miles north of Monroe off U.S. 165.

He's working with engineers from the city of Monroe on plans for the boardwalk. The pier will extend into the lake and include interpretive panels featuring wildlife in the lake.

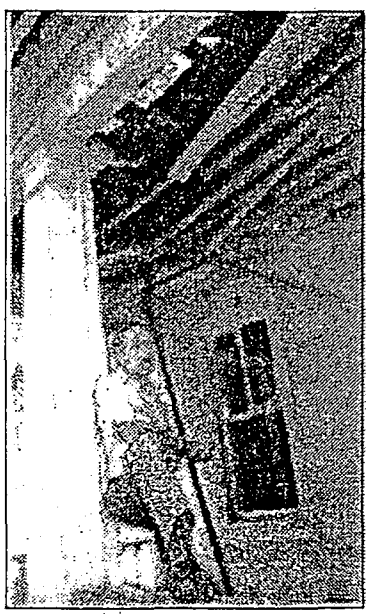
The next task is organizing the scores of volunteers Ouchley said have offered their time and talents in implementing the Wildlife Service plans for the lake.

A "Friends of the Refuge" meeting will be held at 7 p.m. Aug. 7 in *The News-Star* Community Room, 411 N. Fourth St. in Monroe.

"Just from the stories in the paper, we had quite a number of people call who are ready to volunteer. Hopefully, we'll be able to begin organizing a group who can help us with the bigger projects," Ouchley said.

Tuesday, Monroe lawyer Bubby

See REFUGE / 12A



The News-Star/Michael Meeks
Kelby Ouchley talks about the home at Black Bayou Lake.

Refuge

■ Wildlife officials look for volunteers to help develop Black Bayou.

From page 1A

Douglas volunteered to help the group incorporate as a nonprofit organization. Ouchley said that will make fund raising easier because donations will be tax deductible.

"It just seemed like the right thing to do," Douglas said.

In the four years since he moved to Monroe from New Orleans, Douglas has been on the lake just once. "It was just gorgeous. (Volunteering) is something that will definitely benefit our community," Douglas said.

Ouchley sees the house becoming home to a resource center that will sit on property adjacent to the lake.

Jimmy Woods, one of three Monroe developers who sold the lake to the city last year, has donated the building for use as an anchor for development at the lake. Ouchley said Woods turned down several offers from people wanting to buy the home, move it and renovate it.

While planning and pleas for funds continue, so does the primary purpose of the refuge at this time — providing recreation for area sportsmen.

Ouchley said he was surprised by the number of boats launched during the first month the service had actual oversight of the refuge.

"You'll come out here and there will be five or six cars. You'll come back by four hours later, and there's still five or six cars. But they're different cars and trucks. We had 500 launches in June," Ouchley said. "That's a real surprise."

One person using the lake is Riley Burton of Monroe. For years before its closure to the public in 1985, Burton fished Black Bayou.

"I've always been able to catch fish out here, especially in Fourth Lake," Burton said. "This is my first time back, so I'm anxious to get out there."

Burton is pleased the city and federal government formed a partnership to promote the lake.

"It's a wonderful resource that all people of our area should be able to enjoy," he said.

8/3/97

The Town Talk, Alexandria-Pineville, La.

Endangered birds survive new habitat

MONROE (AP) — The woodpeckers have left their nests at D'Arbonne National Wildlife Refuge, and that's just fine with wildlife officials.

Researchers and wildlife officials completed a study this summer that monitored the survival rates of red-cockaded woodpeckers that were swapped between different environments. They were pleased with the results.

"The project was a success," said Northeast Louisiana University graduate student Monica Wallace. "They survived the translocation and they survived to leave."

The study involved moving nestlings — birds too young to leave the nest — to other habitats. Information gained from the study will enable wildlife officials to swap the red-cockaded woodpeckers, an endangered species, between environments so they can breed and increase in numbers.

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"The study would help to find ways to manage the population," Wallace said.

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Stroeh said he found a woodpecker from Felsenthal Wildlife Refuge in Crossett, Ark. The woodpeckers are usually marked with a band to keep track of them.

The News-Star • Tuesday, Aug. 5, 1997

Arsonists burn wildlife tower

By MARK S. RAINWATER
Staff Writer

Suspected arsonists set fire to a wildlife observation tower in Morehouse Parish Sunday night.

An unknown amount of damage was caused to the tower at Handy Brake National Wildlife Refuge. The fire, first reported to the Morehouse Parish Sheriff's Office, was extinguished by the Mer Rouge Fire Department late Sunday.

"We didn't find out about it until" Monday, said U.S. Fish and Wildlife Louisiana Wetlands District Manager Kelby Ouchley. "We were fortunate to have as little damage as actually occurred."

A Louisiana Wildlife and Fisheries agent called Ouchley's office Monday morning and said the tower was unsafe because of the fire. After inspecting the damage, a decision was made to close the popular tower until it can be repaired.

"It started on a small table at the end of the boardwalk and burned through the table to the deck before it was put out," Ouchley said.

In addition to the fire, interpreta-

See FIRE / 4A

Fire

■ The damage to the tower is unfortunate for frequent visitors.

From page 3A

five panels along the boardwalk were damaged Ouchley said recent vandalism had caused officials to restrict access to the area.

"We pay a man from Bastrop to come out each morning to open up and lock it back each evening. Obviously, when he went out (Monday) morning to open up it was still dark and he didn't see the damage," Ouchley said.

Despite the small size of the 500-acre refuge, Ouchley said area outdoor enthusiasts are frequent visitors.

"Bird watchers love it and it's a great place to watch ducks in the winter," Ouchley said. "There was an area out there where you could have a picnic if you wanted. This took care of that."

Wildlife Service officials will get quotes from area contractors and repair the damage as quickly as possible.

The tower, a boardwalk that extends from the crest of a hill as the land slopes into the brake, was built in 1993. Part of the $20,000 cost came from a grant from International Paper.

Bastrop Mill Human Resources Director Charles Randolph said the partnership formed with the initial donation was continued last year when the company donated $1,000 toward continued upkeep of the tower.

"It's sad to get news like this," Randolph said. "This is the second time in two years what looks like arsonists have set fire out there."

In early 1996, a fire in the grass under the boardwalk was extinguished before significant damage occurred.

Heat flares over tree cutting at refuge

By PATRICE SAWYER
Staff Writer

ENVIRONMENT

Dozens of hunters, fishermen and environmentalists sat in the muggy council chambers at West Monroe City Hall waiting to hear solutions to problems they say are plaguing the Upper Ouachita National Wildlife Refuge.

Refuge Manager Lee Fulton tried to explain to about 50 people Tuesday night why the refuge is cutting trees in certain areas and why the water level at Steep Bank Creek is low. They were not the answers the people came to hear.

Wildlife enthusiasts say the U.S. Fish and Wildlife Service destroyed the Upper Ouachita region, and they just want it left alone. But Fulton says the forests are never going to be like they were and the best thing to do is try to preserve it through forestry management.

About 600 of the 21,000 acres on the refuge have been designated for tree-thinning over the next two years. Fulton said the thinning helps weed out the trees less likely to survive.

"Some areas get very dense, and some trees shade out others that might have a better chance of surviving," Fulton said.

Money from the tree-cutting goes into a refuge revenue-sharing fund used to pay local government for the loss of taxes when federal lands are removed from the tax rolls.

Monroe resident Wiley Roach was one of the first to speak out against the tree-cutting.

"I want to know if you're going to manage the refuge for game or manage it for money. I think you folks need to stay off the trees and leave them alone," Roach said.

Fulton said the goal of tree-cutting was not to make money but to "produce the best tree out there that can grow acorns" for squirrels and deer.

Michael Caire, a West Monroe physician and environmentalist, said he thinks the forestry management plan needs to be studied before cutting more trees.

"I think God or nature knows how to grow a forest and we should leave the chainsaws alone," Caire said. But he added, "I think man has messed up nature and maybe we

See REFUGE / 10A

Refuge

■ U.S. Rep. John Cooksey attends session, asks for written complaints or suggestions.

From page 3A

need to do some doctoring, but let's not rush into anything until there's a comprehensive plan."

The group also discussed the low water levels at Fish and Moss lakes and Steep Bank Creek. Hunters and fishermen say the wildlife was plentiful before the federal Fish and Wildlife Service put in a new dam in 1983.

They say the old earthen plug in the creek worked fine, but now it's hard to catch fish or find ducks because of the lack of water and forestation.

They wanted the old plug back and the new dam removed, but Fulton said that would require approval from the U.S. Army Corps of Engineers and could take months to do. He said he would consider the proposal.

Fulton offered to take concerned citizens on a tour of the refuge to show the changes in the land and how refuge officials have chosen to deal with them.

"This refuge is not just for people in Union Parish or people in Ouachita Parish. The constituency is nationwide when it comes to the wildlife refuge. I've got all of this to consider," Fulton said running his hand across a map of the Upper Ouachita refuge.

Rep. John Cooksey, R-Monroe, attended the meeting briefly and asked everyone to put down their complaints and solutions in writing and send them to him. He said he would look at all sides of the issues and work to find solutions.

Monroe resident Scooter Howard helped organize the meeting, and said the meeting went well.

"I think we turned some heads. That refuge in the last couple years has been neglected. We're just asking for accountability and make it a number one refuge," Howard said.

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The News-Star • Sunday, Oct. 19, 1997
Monroe, Louisiana

Showing off national refuges

Thumbs up to local wildlife refuge officials for their efforts last week to celebrate their parks.

The Tensas Refuge in Tallulah organized three park "adventures" for northeastern Louisiana residents — including a hike, a canoe tour and a hayride. Officials at D'Arbonne National Wildlife Refuge displayed exhibits and conducted some informational efforts at Monroe's Pecanland Mall.

Wildlife officials decided to conduct the events in honor of National Wildlife Refuge Week.

"We just want people to come and see what we have here at the refuge," said George Chandler, manager of the Tensas Refuge.

The refuges are important to many northeastern Louisiana residents already. We hope this latest effort introduces even more people to the parks.

THE NEWS STAR
Monroe, Louisiana
Wednesday, Oct. 1, 1997

19,000 more acres on tap for hunters

■ Area in Morehouse Parish will be bought by the U.S. Fish and Wildlife Service.

By MARK S. RAINWATER
Staff Writer

Jerry Jones has hunted ducks in Morehouse Parish most of his life.

And even though the 4th District Attorney belongs to a private hunting club, he said news that the U.S. Fish and Wildlife Service has signed an agreement to purchase 19,000 acres along the Ouachita River in northern Morehouse Parish will be a boon to the sport.

"It probably means less birds for our lease, but that's insignificant compared with the benefit for the whole area," Jones said. "Hunters from north Louisiana and south Arkansas will really benefit from this."

Jones and other waterfowl hunters will have to wait until next year to hunt on the property the U.S. Fish and Wildlife Service will add to its Upper Ouachita National Wildlife Refuge.

Kelby Ouchley, Louisiana Wetlands District manager for the Wildlife Service, said Tuesday the agency has signed an agreement to purchase Mollicy Farms in Morehouse Parish. The first phase of the purchase covers 6,920 acres and allows the agency to lease the remainder of the land. Ouchley said the purchase of the remaining acreage will likely be completed over the next two or three years.

"With the commitment they've made bringing this into the system, I don't think there's any reason to believe they won't complete the purchase as soon as possible," Ouchley said.

He added that perhaps the biggest benefit of the purchase is that tax dollars are not being used.

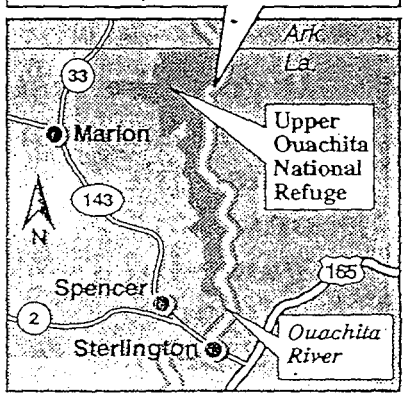
"The money for this come from the Migratory Bird Conservation Commission, whose funds are entirely generated through the purchase of duck stamps," Ouchley said.

The Conservation Commission also approved projects for Avoyelles, Cameron and Jefferson Davis parishes. The Mollicy purchase was by far the largest purchase authorized.

"To my knowledge, this is one of the largest projects they've ever done in the South," Ouchley said.

Hunter's heaven

The U.S. Fish and Wildlife Service is purchasing the 19,000-acre Mollicy Farm in Morehouse Parish and will operate the land as a National Wildlife Refuge.



The News-Star

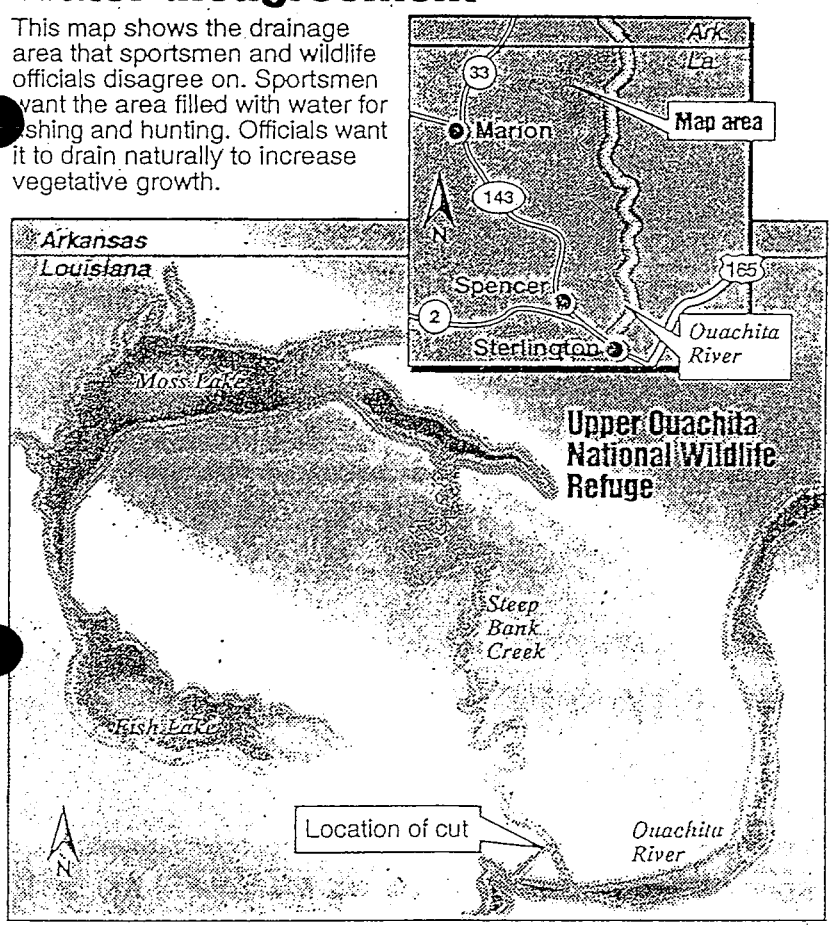
The News-Star
3A • Tuesday, Oct. 7, 1997
Monroe, Louisiana

Today's Spotlight: Wise use of resources

Refuge management on horns of dilemma

Water disagreement

This map shows the drainage area that sportsmen and wildlife officials disagree on. Sportsmen want the area filled with water for fishing and hunting. Officials want it to drain naturally to increase vegetative growth.



Source: U.S. Fish and Wildlife Service

The News-Star/James Aubrey III

By PATRICE SAWYER
Staff Writer

Wildlife refuge officials and sportsmen agree on one thing: They want what's best for the forest and its inhabitants.

ENVIRONMENT

But the opinions on what's best are as far apart as some of the hardwood branches in the Upper Ouachita Wildlife Refuge.

Hunters and fishermen in northeastern Louisiana have united to convince the U.S. Fish and Wildlife Service that some changes need to be made at the refuge, but officials say they are following a plan for the overall protection of the area. Both sides have talked about their differences, but neither may be completely satisfied with the results.

"We just want things the way they were. We want to keep enough water in the lakes to get some ducks in," said Monroe resident and avid sportsman Scooter Howard.

"Things are never going to be the way they were. The best thing to do right now is to let the area drain out so the vegetation can grow up and make it an attractive area for wildlife," said Lee Fulton, manager of the Upper Ouachita and D'Arbonne national wildlife refuges.

The debate is focused mainly on the northern end of the Upper Ouachita around Moss and Fish lakes. In 1983, the federal Fish and Wildlife Service removed an earthen plug from Steep Bank Creek, which drains the lakes into the Ouachita River.

The dam impounded about six feet of water around the lakes, which Fulton said encouraged beavers to build dams, flooding and killing many acres of bottom-land hardwood trees. When officials removed the dam, they put in a new one with a water control structure at the mouth of Steep Bank Creek.

Wildlife officials removed the structure last week to let the creek drain naturally. Howard said sportsmen have wanted that dam removed for years.

Now they want the original dam put back, and Howard doesn't think

See REFUGE / 8A

Refuge

■ Officials say sportsmen's good intentions don't always benefit everyone.

From page 1A

it caused the trees to die.

"Their hangup is the water will kill timber. What I've been trying to tell them is a lot of the dead timber was due to beavers building dams and holding water in," Howard said.

He said the old dam did the job it was supposed to do. It allowed convenient access to the creek and it created a wetlands habitat conducive to good fishing and hunting.

Fulton said the old dam created a place where people would have to use pulleys or carts to get their boats to the creek. Often, sportsmen would leave their boats tied to trees or leave their carts on the refuge.

When officials removed the new dam, they discovered that the drainage control structure had been intentionally blocked with a metal plate. This forced the water to make a cut in the bank so that it could drain into the river.

Part of the dam officials removed was used to plug the cut.

Fulton said sportsmen's intentions may be good, but they don't always benefit the refuge that is available to everyone.

"National wildlife refuges are established for the preservation of wildlife. When we have healthy wildlife, we can allow uses that are compatible with the wildlife," Fulton said.

> ***"National wildlife refuges are established for the preservation of wildlife. When we have healthy wildlife, we can allow uses that are compatible with the wildlife."***
>
> — Lee Fulton, wildlife refuge manager

He said once the drainage begins, the low water will allow trees and vegetation to grow to attract ducks and fish, and they will become plentiful over time.

Ken Butts, project manager for the refuge, said the water will be low at the beginning of duck season in November, which he thinks will make some hunters unhappy. But he hopes the fall rains will raise the water level as the season progresses.

"Nature is funny. If you allow the water to fluctuate up and down, it's a lot more productive," Butts said. "Trying to manage nature, it's pretty much a crap shoot. You're not going to make everybody happy."

Howard and other wildlife enthusiasts have tried to enlist the help of U.S. Rep. John Cooksey, R-Monroe.

They have sent petitions with hundreds of signatures and letters to his Monroe office.

Del Vines, Cooksey's district director, said he was surprised by the intense interest in the refuge.

"These hunters and these fishermen, they are really dedicated. I mean they are like avid football fans," Vines said.

He attended a public meeting about the refuge in August, and he said an open discussion is beneficial.

"Hunters and fishermen have a chance to share their hopes and dreams and opinions with professional management. The management has an opportunity to share their position," Vines said. "They'll probably never agree 100 percent on everything."

Butts said putting in the old dam on Steep Bank Creek is "a possibility for the future, if they prove to me it is for the best interest of the refuge."

Howard and other sportsmen will make sure their case is heard.

"We're just going to keep on keeping on, and we're not giving up," he said.

BSBA MEMBERS PLANT HARDWOOD SEEDLINGS ON D'ARBONNE NATIONAL WILDLIFE REFUGE

NATIONAL SPONSOR

by Steve Pagans, Forester
D'Arbonne & Upper Ouachita National Wildlife Refuges

As an introduction, I am the head forester for D'Arbonne and Upper Ouachita National Wildlife Refuges (NWR). D'Arbonne NWR was established May 19, 1975, and Upper Ouachita NWR November 20, 1978. A high priority for both refuges is the management of forest, including pine and hardwood areas, for wildlife.

On February 8, 1997, six BSBA members volunteered their services to the D'Arbonne NWR forest management program. The volunteers included Robert Lewis, Dan McCurry, Joe Marsala, Paul Marsala, Lavelle Spillers, and Mike Colvin. As a token of our appreciation, we gave each volunteer a T-shirt. I thoroughly enjoyed working with these guys. They helped plant about twenty-two hundred upland hardwood seedlings on a pine site scheduled for conversion to pine/hardwood. BSBA members planted white oak, water oak, Shumard oak and black walnut seedlings to supplement natural regeneration. BSBA members who participated in the 1996 D'Arbonne NWR 3-D Shoot also contributed to this effort. The refuge used the donated money to purchase swamp chestnut oak and persimmon seedlings planted on another day. I offer my thanks to anyone else who helped that I may have forgotten. The refuge plans to plant more seedlings next year (between January and March 15), and hopefully, more BSBA members will be available to participate. Once there is adequate stocking of hardwood regeneration, a removal of the pine over story through timber sales will begin.

Another important partner in this activity was the National Tree Trust (NTT), a nonprofit organization. President George Bush established the NTT in 1990 as part of the "America the Beautiful" initiative. The refuge acquired most of the above tree seedlings under the Community Tree Planting program administered by the NTT to provide trees to be planted on public property. Texaco Incorporated is a national sponsor of NTT and has provided substantial support for them. Many forest product companies are participating in this program by providing seedlings. The refuge received free seedlings for the 1997 planting season from Champion International Corporation, Georgia-Pacific Corporation, Mill Creek Farm, Westvaco Corporation, and Weyerhaeuser Company. The T-shirts received by this year's volunteers had the NTT logo on the front and a list of all participating forest products companies on the back.

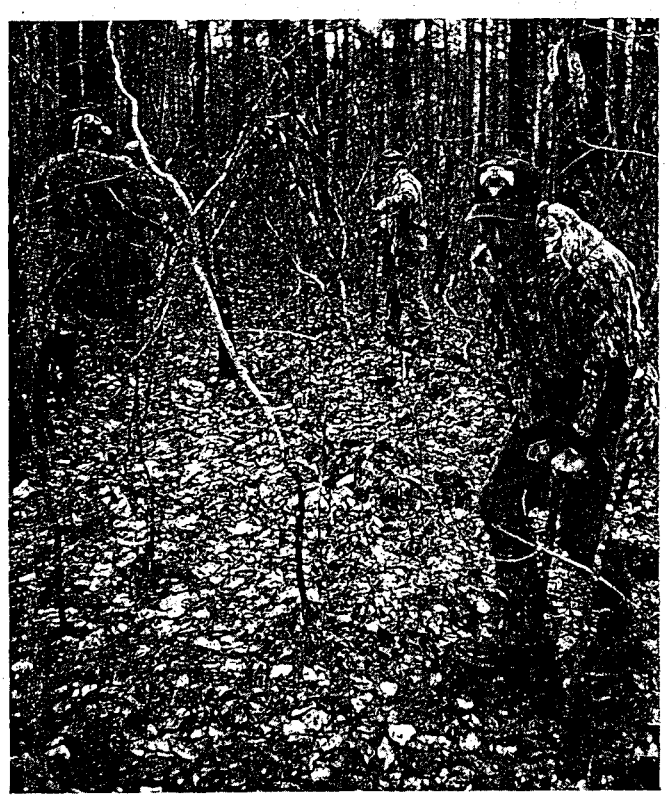
The D'Arbonne NWR staff greatly appreciated the help we received in this endeavor from BSBA members, NTT and forest industry. You are helping to mold future refuge forest wildlife habitat.

For those interested, the following provides more information on basic refuge forest management, especially conversion of pine areas to pine/hardwood or hardwood areas. The refuge uses many forest management treatments to enhance wildlife habitat. However, the basic *(continued)*

...) treatments are as follows. Trees are ...eir numbers to give residual trees more ...s are done to promote regeneration (young ...urn pine areas to reduce wildfire hazard and growth.

...of the pine areas on the east side of the D'Arbonne ...ve to be managed for the red-cockaded woodpecker, ...angered species. Management for these birds entails ...ing of pine areas using the same methods listed above. ...ese pine stands have to be maintained for an indefinite time.

Pine areas on the west side of the D'Arbonne NWR (where BSBA members helped plant) are far removed from the red-cockaded woodpecker and are subject to conversion to pine/hardwood or hardwood. Many pine areas were old fields prior to refuge establishment. Before being cleared by early settlers, they were probably oak/pine forests. Records show that most virgin forest in this area were cut starting in the early 1900's to about the 1920's. As forest areas recovered from that period of cutting, some were cut again when merchantable by landowners needing money for extra income or to pay taxes on their land. Obviously, some land was cleared for pasture or crops following some cutting. Some of what is now refuge was still in farm fields as late as the early 1960's. A few of the fields were abandoned by previous landowners and allowed to naturally revert to forest. Some landowners participated in government programs that paid them to plant their fields to trees. Landowners planted most fields to pine, especially slash pine, which was touted for its fast growth. However, it did not take many years to discover that the slash pine (planted off its natural coastal plain site) did not do well on the hills of north Louisiana.



Old fields, not planted to pine, were invaded by what are considered pioneer species, in this case primarily pine and sweetgum. Sassafras is another pioneer species common to abandoned fields. The heavier seeded species, oaks and hickories, are slower to become established. If both the naturally regenerated and planted fields were left alone, they probably would progress (through natural succession) to pine/upland hardwood or possibly upland hardwood forest (barring natural catastrophes like tornadoes). However, that process could take another 100 to 150 years. Instead of waiting for natural succession to occur, the refuge chooses to speed up the process through judicious forest management treatments.

During the first 20 years following the abandonment of the fields the following probably occurred. For the first five years, the old fields supported many grasses, herbaceous plants, briars, pine and sweetgum seedlings. After that the young pine, often numbering thousands per acre, started to shade out other plants. A heavy buildup of pine straw covering the forest floor further decreased the opportunity for other vegetation to become established. Young oaks may have been temporarily established because of squirrels burying acorns or an occasional blue jay flying over and accidentally dropping acorns. Because of the energy stored in the acorns, some of them would have germinated *(continued)*

(D'Arbonne - continued) and taken root. However, because of the dense shade, the young oaks may eke out an existence for only a couple of years. Gradually, competition between the young trees caused many to die and while others grew larger. At the end of 20 years, the trees were still densely stocked with trees averaging two to three feet apart. Pine straw would have been hanging on limbs and completely covering the ground. There would be virtually no ground or understory vegetation.

At this point you may be wondering how is a hardwood forest developed without clearing the pines and planting hardwood seedlings. An unimaginable tool that can be used to promote development of upland hardwood regeneration is prescribed fire in the winter. How can this be? Everyone knows that "Smokey the Bear" warned for years that fire destroys forests. Ask yourself these questions. Has not fire been a natural part of forests for who knows how long? If upland hardwoods and fire cannot co-exist, how did the hardwoods ever get established in the first place?

Some 20 years after the previous landowner abandoned his field, as the first refuge forester, I began preliminary management of these areas. Experience had taught me that pine thickets as wildlife habitat can be enhanced by thinning and burning. The forest was thinned through timber sales that provided some sunlight to the forest floor. The thinning provided enough sunlight for hardwood regeneration to become established but not enough for it to fully develop. Oaks are shade intolerant (they do their best in full sunlight). I used winter prescribed fires to remove dense layers of pine straw and expose some mineral soil. The reduction in pine litter made it easier for squirrels to bury acorns. Prescribed winter burns that spread over the area resulted in the killing of the above ground portion of young hardwood trees. Young hardwoods are dormant in the winter and store most of their food reserves in the roots. Once spring arrives, the roots sprout and new stems grow. This process can be repeated often over the years and the amount of hardwood regeneration in the pine area will continue to increase. Research has shown that winter burns do not stop natural succession. This process can be used to promote and store hardwood regeneration until there is adequate stocking of the regeneration to justify their full release by cutting the pine. This does not prevent pines from becoming established again. However, there will be much more hardwood also established. Over time successive foresters will encourage the hardwoods by releasing them during thinning operations. Gradually, foresters can mold new stands (groups of similar age) of trees into the most desirable ratio of pines and hardwoods.

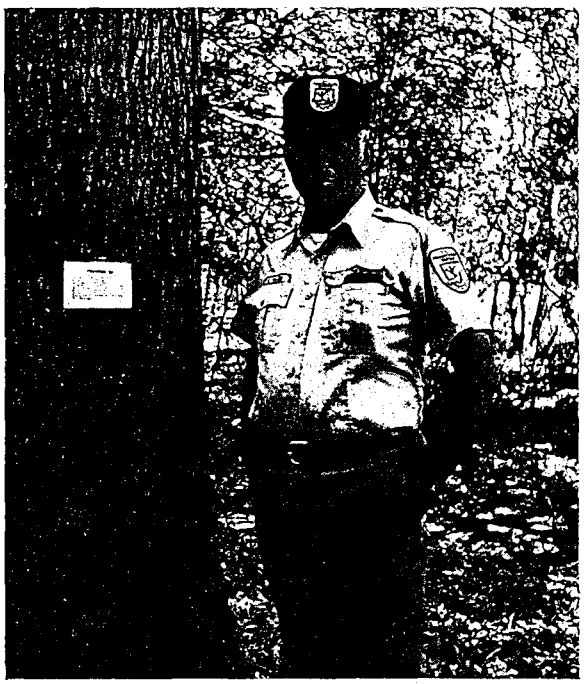
There are a few more details to the process of converting pine areas to pine/hardwood, but this discussion covers the most important points. Thanks again to all who participated in the pine conversion program via hardwood seedling planting.

ERYTHROBALANUS

by Steve Pagans, Forester
D'Arbonne & Upper Ouachita National Wildlife Refuges

Managing forest for wildlife is my vocation. Bowhunting for deer and other game is one of my favorite avocations. Continuing to learn about wildlife and how they relate to their habitat is also something I enjoy, and need, to accomplish my job effectively.

I have to admit to a fascination with words, their meanings and roots (etymology). That partly explains the title of this article. Understanding words fosters a greater appreciation for what is being studied. You, as the reader, may not share that interest. Bear with me through some technical information to see if more can be learned about oaks while generating a bit more interest in tree identification. Keep in mind a bowhunter becomes a much better tactician if he not only knows the habits of wildlife but also their habitat.



In a previous article, I wrote about the "white oak family." In that article I should have discussed how trees are named for those of you trying to learn more about trees. Botanists do their best to classify trees. The classification system gets lengthy and will not be covered in this article. Briefly, all oaks (red and white) fall under the genus (group), *Quercus*, which is Latin for oak. Classification of oaks is further broken down into what are called subgenera. The term, genera, is the plural form of genus. *Erythrobalanus* and *Leucobalanus* are the two most common oak subgenera.

Erythrobalanus -- a mouth full that sounds like a rare disease -- is the scientific name given to the group of trees called red oaks. Breaking the word down to its roots, you get the following. *Erythro* is a Greek word that means "red." The second half of the word, balanus, comes from another Greek word, *balanos*, which means "acorn." White oaks have the scientific name *Leucobalanus*. *Leuco* comes from another Greek word, *leukos*, which means "white."

When one speaks of red oaks as a family, all tree species that meet the criteria to be classified as a "red oak" are included. Botanists have assigned Latin names to distinct species for better recognition. Common names can be confusing. For example, you will hear hunters in north-central Louisiana refer to "pin oak flats." The most common textbook name for that species is willow oak which has the Latin name, *Quercus phellos*. It also has other common names, such as peach oak. Maybe now, you can see why the botanists like their scientific names based on Latin, Greek, etc.

There is quite a variety of "red oak" family species in Louisiana. If you travel over the United States, you can find more "red oak" family species. This article will cover red oaks (generally, the ones I'm most familiar with) that can be found in many parts of the State. I will also briefly discuss how the white-tailed deer and other species of wildlife relate to the "red oak" family. Through study and observations, one can continue to learn how different wildlife relate to many plant species.

One problem you run into occasionally, concerning identification, is that red oaks hybridize (crossbreed). Therefore, at times when one tries to identify a red oak, he may end up scratching his head because a hybrid has been encountered. However, most of the time, species can be identified with a good tree identification book. The most unusual tree that I have found so far was determined (by a botanist) to be a water oak (*Quercus nigra*) and *continued*

Erythrobalanus - continued
a southern red oak (*Quercus falcata*) hybrid. From not too far away, its leaves looked somewhat like a white oak. It was quite an interesting looking tree. I'm reminded of the cliche "variety is the spice of life." Maybe the red oaks heard that one, too.

As with white oaks, red oaks can be found from dry, upland sites to wet, bottomland sites. One must keep in mind that almost any of the lower site species might be found on drier sites. However, it is somewhat unusual for a higher site species to be found on lower sites because they usually cannot stand the increase in soil moisture and associated flooding. Most of the time, trees will be found on sites that are optimum for their soil and moisture requirements.

The following red oak species are the more common ones found within the State. General references to distribution below relate to natural sites as opposed to plantations.

Higher and/or drier site species:

Blackjack oak, *Quercus marilandica* (western parishes)
Black oak, *Quercus velutina* (western parishes)
Southern red oak, *Quercus falcata* (general distribution)

Cherrybark oak, *Quercus falcata* var. *pagodifolia* (general distribution)
Water oak, *Quercus nigra* (general distribution)
Shumard oak, *Quercus shumardii* (more common in western parishes)
Laurel oak, *Quercus laurifolia* (more common in southern parishes)
Live oak, *Quercus virginiana* (more common in southern parishes)

Lower and wetter site species:

Willow oak, *Quercus phellos* (general distribution)
Nuttall oak, *Quercus nuttallii,* scientific name will probably be changed to *Quercus texana* (general distribution)

One site characteristic common to most red oak species is their affinity to well drained, sandy soils. Exceptions to that include the cherrybark and nuttall oaks that are normally found on soils that have a higher clay content and soil moisture.

A primary characteristic that distinguishes red oaks from white oaks is the leaves. "Red oak" leaves have *continued*

.robalanus - continued

.ther bristle-tipped lobes or spines or bristles at leaf ends. White oaks do not have the spines or bristles.

Another characteristic that distinguishes the two is acorn production. In the spring, oaks start putting on new growth followed shortly by blooms. They have imperfect flowers that means they are dependent on wind dispersed pollen. Once they are pollinated, acorn growth starts. Stem growth continues until late summer or early fall when hot, dry weather and shortening days cause terminal buds to set. Red oaks take about one and a half years (from the time that they bloom) to produce mature acorns. White oaks bloom and can have mature acorns that coming fall. In other words, red oak acorns established on this year's blooms will not mature until fall of the following year. However, red oaks can produce new acorns on each spring's new growth, thereby, having the potential for acorns each year, even with the staggering effect. If a late spring freeze kills the blooms, obviously, it will be the following spring before new acorns can be established. If you look at a limb on a red oak and it has very small acorns nearest the end and larger acorns further down the limb, you could be looking at two years of acorn production.

Except when all acorn production is lost for a year, white oak and red oak acorn production vagaries are beneficial for wildlife. Imagine this scenario, spring of 1997: both white and red oaks bloom and establish new acorns. Fall of 1997: white oaks (having had favorable summer weather conditions for 1997) will have mature acorns, but red oak acorns will not be mature. Spring of 1998: a late spring freeze kills blooms on both red and white oaks. Fall of 1998: red oaks (having had favorable summer weather conditions for 1998) will have mature acorns, but white oaks will not have any acorns. Why? Remember, the red oak acorns were established spring of 1997. What is the benefit to wildlife? One species might still produce even if unfavorable weather conditions damage the other species. Cliche, "not all eggs are in one basket." A plan implemented by the "Great Planner."

As mentioned in a previous article, red oak acorns typically have more tannic acid than white oak acorns which makes the acorns taste bitter. In general, red oak acorns do taste more bitter. However, not all red oaks seem to have equal amounts of tannic acid (at least not to my taste buds). How the acorns taste to wildlife is affected by variations in soils, weather, and possibly genetic differences between *continued*

Erythrobalanus - continued trees (and the infrequent fertilizer put under trees by some bowhunters). Whatever causes the differences in taste, many species of wildlife seem to favor the acorns of some trees of the same species over others. Some apparent favoritism may only last one year. Next year they may go to another tree to feed.

On an area in middle Georgia where I worked in the middle 1970's, blackjack oak acorns seemed to have been favored by white-tailed deer. I tasted some acorns and they were fairly mild (lower acidity). I have limited experience with blackjack oak, black oak, shumard oak and laurel oak. I also have minimal experience with live oak except to say that the acorns are fairly mild tasting to me.

I have a little more experience with southern red oak, cherrybark oak and water oak. I really need to make more observations, but it seems that of these three, white-tailed deer and squirrels, for example, prefer cherrybark oak acorns over the other two. They also seem to prefer southern red oak acorns to water oak. My experiences are related to north central Louisiana (for the past 20 years) where soils are highly acidic and have low fertility. Other areas with different soils might have different responses by wildlife. One probable clue to the above is that cherrybark usually grows on flatter and wetter site than the other two. The site for cherrybark is usually more fertile, too.

However, one has to keep in mind that white-tailed deer generally eat acorns like they are "ice cream" foods whenever they are available. So, even though they will select certain acorns to feed on over others, they seem to like all acorns. I have my favorite ice cream, too. If acorns or preferred browse plants are not available, they will eat what they need to survive, including things like pine seedlings.

On bottomland sites of north central Louisiana, willow oak and nuttall oak acorns are mainstays as far as red oak species are concerned. Willow oaks typically grow on poorer soils than nuttall oaks. Soils supporting willow oaks are usually thin clays over sand (at least in the Ouachita Rivers bottom and its tributaries, like D'Arbonne Bayou). Nuttall oak sites are basically the same except that the clays over the sand are deeper which provide more nourishment for the trees. If you have not noticed, nuttall oaks are usually in a relatively low, wet site. During floods those low areas are the last to drain which allows for more sedimentation to occur; ergo, those sites develop deeper clays.

continued

robalanus - continued

Willow oak acorns taste fairly bitter (high tannic acid) to me but still receive considerable wildlife attention. Deer readily consume them while on the move. Wildlife species seem to favor nuttall oaks (also called striped oak) over willow oak, especially some trees. Nuttall oak acorns are generally much larger than willow oak acorns and do not seem to be quite as bitter. In addition, you would have to admit that per deer hour spent feeding, more weight in food could be consumed by a deer feeding on nuttall acorns. In other words, a deer can get more food, faster, eating nuttall acorns and return to cover and security quicker. However, I believe they just like nuttall acorns better than willow oak acorns.

If the number of deer droppings under trees counts (I sure like to see them), I've generally seen more under nuttall oaks than the others listed above. Again, it has to do with food availability. In good mast crop years, wildlife will pick out the best tasting acorns to eat first. One always has to scout those out. When you find that tree with "lip smacking" acorns, usually there will be deer, raccoons and squirrels coming to it. I'd like to run off the raccoons to save acorns for the deer, but I haven't figured out how to do it without making a ruckus. On the other hand their feeding activity might make a deer think that it's okay to come feed.

I have to tell what I think is an interesting encounter I had with a raccoon. For the past few years, I have been using raccoon scent (recommended by another hunter). His theory was raccoons go up trees (like many bowhunters) so why not use their scent to mask human odors. I read the instructions on the scent bottle about spraying 10-12 times with the mist sprayer. However, I generally use less because raccoon scent is strong smelling and I did not want to over do it.

So, one day, I'm out bowhunting and up in my tree stand (having judicially sprayed my raccoon scent). I had hunted all morning and by late morning it started warming up considerably. A noise up in the crown of the adjacent tree, which was maybe 20 feet away, caught by attention. Finally, I could see that it was a raccoon. Because of its actions, I later surmised that it had been laying on a limb exposed to the sun. The raccoon started down the forked tree. It got down to about where the tree forked and stopped. Suddenly, he started urinating. You know that urgent feeling you get sometimes when you first wake up in the morning. I promise, the raccoon let out enough urine to wet the tree down thoroughly for probably six feet. I could not believe my eyes and his demonstrated capacity.

To think that earlier, I had worried about using too much raccoon scent. The raccoon probably could have filled 15 or 20 of those two ounce scent bottles with what he unloaded. After what I imagine was a sigh of relief, the raccoon went back up the other fork and got comfortable on the shady side of the tree where he went back to sleep. I decided that after that event nothing would smell me. I also considered a worst case scenario that no deer could stand to come near because of the excessive scent. I have since forgotten whether I saw any deer afterwards or not. Maybe the raccoon knew what he was doing and that no deer would get near me after he unloaded. In retrospect, if I had to be in a contest with that raccoon, I don't believe I would have the capacity to do what he did even under exigent circumstances.

To summarize, there are many "red oak" family species in Louisiana. They are all used by wildlife in varying degrees that can change on an annual basis. Remember that each species is adapted to different site conditions that will affect the palatability and general food value to wildlife. Some species are unique in a way that causes them to be favored by a wider clientele of wildlife species. When you find a tree that is heavily favored by wildlife, try to figure out why it is. Your conclusions may lead you to a pattern that will allow you to find similar "honey holes" or "sugar trees" as I heard one hunter describe them. I know my knowledge is limited on some red oak species. If other hunters have more knowledge concerning them, I'd like to hear about it. For me, additional knowledge always adds more pieces to the puzzle and helps to keep bowhunting interesting.

Good hunting. Keep you eyes and ears open for what you can learn from the forest and wildlife. I'm really thankful, too, that I was not in the same tree with that micturating raccoon.