

NOXUBEE NATIONAL WILDLIFE REFUGE

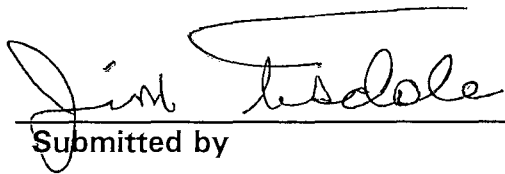
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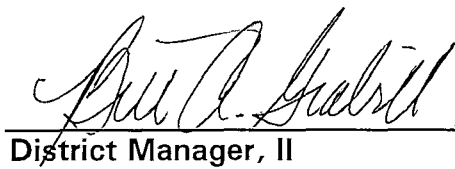
ANNUAL NARRATIVE REPORT

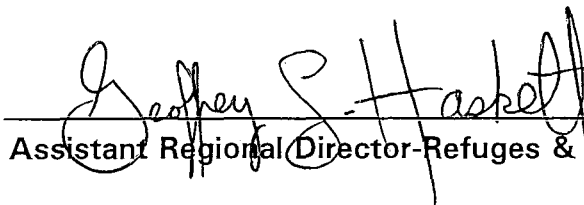
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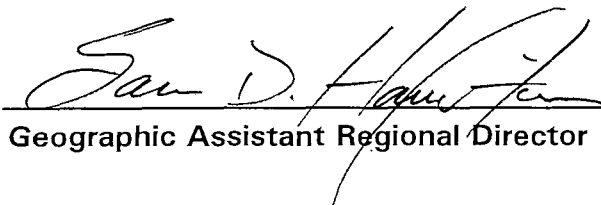
U. S. Department of the Interior
Fish and Wildlife Service

Review and Approvals


Submitted by _____ Date 4/16/97


District Manager, II _____ Date 4-24-97


Assistant Regional Director-Refuges & Wildlife _____ Date 5/9/97


Geographic Assistant Regional Director _____ Date 5/16/97

INTRODUCTION

Noxubee National Wildlife Refuge is located within three counties (Noxubee, Oktibbeha, and Winston) in east-central Mississippi and consists of 47,879 acres. The Refuge was established in 1940 from lands acquired through the 1930's Resettlement Administration.

Before government ownership, the land area within the Refuge was extensively farmed and grazed for cattle. Fifty-six years later Noxubee is an excellent example of forest and wildlife management. This change caused a return of bountiful wildlife populations and a progression toward restoration of the pine and hardwood forest types that were so devastated in the early 1900's.

Approximately 42,500 acres of the Refuge is woodlands composed of bottomland hardwood, upland hardwood, mixed pine-hardwood and pine species. These forest lands are occupied by a variety of upland species including turkey, deer and quail. The endangered red-cockaded woodpecker relies on the Refuge for its existence in east-central Mississippi. In addition many neotropic species greatly benefit from the Noxubee's forests. Four green-timber reservoirs (GTR's), two major lakes, many small ponds and sixteen small impoundments provide important habitat for wintering waterfowl and bald eagles.

Over 125,000 visitors participate in several activities each year including fishing, hunting, hiking, wildlife photography, wildlife observation, environmental education, and research.

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K. FEEDBACK

None

L. INFORMATION PACKET

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A. HIGHLIGHTS

Cooperation by Barge Lumber Company, Weyerhaeuser Timberlands, Noxubee National Wildlife Refuge, and Desoto National Forest results in the movement of 2 red-cockaded woodpeckers being moved to the Desoto National Forest from these private timberlands to facilitate RCW recovery objectives. (Section G-2)

A youth waterfowl hunt held this year. (Section H-8)

Noxube has some new bridges. (Section I-2)

Morgan Hill Overlook and Wilderness Trail dedicated during National Wildlife Refuge Week celebrations. (Section J-3)

Hog farm coming? (Section J-3)

B. CLIMATIC CONDITIONS

Rainfall totaled approximately 55.65 inches, 0.17 inches below normal, or just about average. The office closed on February 2, due to no electricity (electric heating system and computers were off), caused by a severe cold snap with an accompanying ice storm. The ice storm also caused widespread tree damage with the hardest hit area in the southwest portion of the Refuge.



TABLE I
WEATHER CONDITIONS
1996

Month	Precipitation (inches) ¹		Temperatures °F ¹	
	1996	Normal ¹	Maximum	Minimum
January	4.03	5.28	73	6
February	4.16	4.88	88	4
March	6.48	6.00	88	26
April	6.86	5.68	88	20
May	4.19	4.63	95	43
June	2.09	3.75	105	57
July	5.19	4.94	100	62
August	4.90	3.38	96	62
September	1.58	3.81	92	47
October	5.59	3.29	87	35
November	4.57	4.25	79	29
December	6.01	5.93	79	12
Annual Total or Extremes	55.65	55.82	105	4

¹Precipitation data obtained from rain gauge located at the headquarters. Temperatures obtained from Mississippi State University (MSU).

²Normal represents the average of 1961-1990 conditions at MSU.

C. LAND ACQUISITION

1. Fee Title

Noxubee NWR currently encompasses 47,879 acres and has approximately 8,000 acres of inholdings within the proposed acquisition boundary. These inholdings include 3,822 acres of State land (1,025 acres - Section 16; 2,797 acres - Mississippi State University) which will likely never be acquired. The remainder (4,263 acres) consists of scattered, small private tracts. Acquisition of these tracts will continue slowly as few owners are willing to sell at appraised values.

The Refuge generally acquires available inholdings using a land-for-timber exchange and infrequently will use a land-for-land exchange. In the land-for-timber exchanges, we contact local timber companies who will negotiate with the inholding owner based on a Regional Office-Realty appraisal of the land. If the owner accepts the appraised value, the timber company will purchase the property. The Refuge will then exchange a quantity of timber of equal value for the land. Timber selected for the exchange is obtained from stands that need to be thinned or regenerated for habitat improvement.

No fee title tracts were acquired; however, offers and appraisal orders have been made on four tracts in and around Noxubee. We have made an offer for a 20-acre tract owned by Mr. Bud Shinn, a 110-acre tract owned by Mr. Adrian Blocker and 18 acres owned by Dr. Walt Starr and all acceptances are still pending. An appraisal was ordered for a 148-acre tract owned by the Ruth Young heirs.

4. FmHA Conservation Easements

No new tracts were acquired. We have seven FmHA Conservation Easements, 582.85 acres. All seven tracts were checked for compliance by Manger Tisdale and Forestry Technician Dendy. A grievance was filed by Gene and Joy Poole alleging that because they were not allowed to conduct harvest operations on the Poole tract, a windstorm blew down timber valued at \$50,000.

FmHA Easements				
County	Owner	Acres	Year Acquired	Posted
Chickasaw	Moore, Billy	81.55	1994	Yes
Choctaw	Hall/Pruitt	96.50	1991	Yes
Choctaw	Black, Harvey	17.00	1994	Yes
Oktibbeha	Garritt	2.10	1993	Yes
Newton	Reach, Inc.	37.50	1994	Yes
Winston	Miller, Jimmy	194.20	1991	Yes
Winston	Poole, Dalton	154.00	1992	Yes
		582.85		

D. PLANNING

2. Management Plans

The fire management plan and field management plan were almost completed and will be in 1997.

4. Compliance with Environmental Mandates

Two archeological investigations were performed by the Regional Archeologist. The first involved archeological clearance for the expansion of the North levee of Bluff Lake, scheduled for summer of 1997. Clearance for this project was given with no significant archeological sites encountered during the site inspection. The second involved clearance for the new Bluff Lake boardwalk. Initial evidence of a site at this location was discovered by Refuge employees, verified by Forest Service Archeologist Evan Peacock, and later inspected by FWS Archeologist Rick Kananski. Findings from the investigation revealed that this site is eligible for inclusion to the National Register of Historic Places. As a result of these findings, modifications have been made to the design of the boardwalk, and work will resume in the summer of 1997.

5. Research and Investigations

Six research projects were conducted on Noxubee. The close working relationship of the Refuge and Mississippi State University enables many projects to be conducted providing much needed information.

Noxubee NR96 - Spatial movements of gray rat snakes in relation to red-cockaded woodpecker clusters - (43620-1)

Funding for this project were secured in 1996 through Section 6 monies via the Heritage Program, Mississippi State. The project will begin in 1997 and be build upon a pilot study conducted by the Refuge in 1995.

Noxubee NR96 - Population biology of the red-cockaded woodpecker in east-central Mississippi - (43620-2)

Initiated 9-28-72 by Dr. Jerome Jackson, Department of Biological Sciences, Mississippi State University. No research was conducted on this project.

Noxubee NR96 - Boll weevil attractancy tests - (43620-3)

Initiated 3-19-73 by Dr. E. B. Mitchell, Research Entomologist, USDA, Boll Weevil Laboratory, Mississippi State University and being continued by Dr. McKibben. The project consists of testing different attractants and traps in the open fields on the Keaton Tower Road.

Noxubee NR96 - Effect of reduced wood duck nest box size on productivity and dump nesting and brood survival using telemetry - (43620-4)

Research is being conducted by Masters Student Brian Davis and Dr. Kaminski, Dept. of Wildlife and Fisheries, MSU. The objective of the research was to learn if increased productivity and a subsequent reduction in dump nesting by wood ducks can be achieved through a smaller box design. In addition, brood survival is being evaluated utilizing a special clay filled band on day-old ducklings along with transmitters on ducklings and hens.

Noxubee NR96 - Environmental stresses and reproductive biology of flowering dogwood - (43520-5)

Dr. Bonner of the Southern Forest Experiment Station (FS) and the Department of Forestry, MSU, are examining the effects of elevated

temperatures and carbon dioxide levels on the reproductive cycle of flowering dogwood. This project was expected to be completed in 1996.

Noxubee NR96 - Habitat components, movements and mortality rates of the fox squirrel in relation to forest management practices - (43620-6)

This project was completed in 1996 by Dr. Leopold and Jason Ross, Department of Wildlife and Fisheries, MSU. However, time-area counts will be continued for several years to index the abundance of this species that has been declining for many years.

E. ADMINISTRATION

1. Personnel



(2-96, E.Hall)

Personnel

1.	Jim L. Tisdale	Refuge Manager	PFT/GS-13
2.	James L. Hall	Refuge Manager	PFT/GS-11
3.	James M. Stockie	Administrative Forester (TRANS 5/24/96)	PFT/GS-11
12.	Richard E. Smith <i>Not Pictured</i>	Administrative Forester (EOD 6/15/96)	PFT/GS-09
4.	David M. Richardson	Wildlife Biologist	PFT/GS-11
5.	Bobby J. Gentry	Refuge LE Officer	PFT/GS-07
6.	Dusty Dendy	Forestry Technician (FCO)	PFT/GS-07
7.	Gwen S. Cotton	Office Assistant	PFT/GS-07
8.	Johnny W. Bradford	Biological Science Technician	PFT/GS-06
9.	Paul R. Caudill, II	Maintenance Mechanic	PFT/WG-09
10.	Elvis Gillespie	Engineering Equipment Operator	PFT/WG-10
11.	Tom Jackson	Tractor Operator	PFT/WG-07
13.	Frederick Ashford	Forestry Aid	Temp/GS-04
14.	Suzanne Q. Edwards	Forestry Aid	Temp/GS-03
15.	Richard Ledbetter <i>Not Pictured</i>	Forestry Aid (TERM 4/30/96)	Temp/GS-04
16.	Daniel B. Alberts <i>Not Pictured</i>	Forestry Aid (EOD 12/8/96)	Temp/GS-04
17.	Hal L. Jenkins <i>Not Pictured</i>	Forestry Aid (EOD 10/28/96)	Temp/GS-04
18.	Rebecca B. Schapansky	Student Trainee (WL) <i>Not Pictured</i>	PFT/GS-04

Administrative Forester Jim Stockie transferred to Savannah Coastal Refuges and was replaced by Richard Smith from Southeast Louisiana.

Coop Student Rebecca Schapansky was completing her degree requirements at the University of Georgia this year. She is still technically assigned to this station but probably will be reassigned when she returns to duty.

The office assistant position was finally upgraded to GS-7 in June. This was accomplished primarily as a result of the Regional Directorate getting involved in the process. This position was initially recommended for a upgrade to the GS-7 level in 1992, a four year process.

Firefighter Richard Ledbetter resigned in April, and two new firefighters were hired - Dan Alberts and Hal Jenkins. With these hires, we have 4 firefighters on board. A five-year comparison of employees on board follows:

	<u>PERMANENT</u>		<u>TEMPORARY</u>	<u>FTE</u>
	<u>FT</u>	<u>PT</u>		
1992	12	1	4	14.8
1993	12	1	5	14.8
1994	12		4	14.8
1995	12		3	13.8
1996	12		4	13.8

3. Youth Programs

The YCC program (June 9 - August 2) consisted of two enrollees, Jay Holdiness and Willie Kincaid, supervised by Bio-tech Bradford. Enrollees assisted with and completed such projects as building access ramps to the handicapped hunting blinds, banding waterfowl, marking SPB salvage, and maintaining grounds and equipment. Both enrollees received On-the-Spot Awards for their work on the handicap blinds.



Handicapped-accessible hunting blinds before ECHO funded project. (3-96 Hall)



Use of the blinds doubled after the project. (4a-96 Hall)

4. Volunteer Programs

Volunteer projects on Noxubee included waterfowl banding and censusing, censusing red-cockaded woodpecker colonies, clearing of trails, and construction on the Wilderness Trail. Members of the Oktibbeha Audubon Society again provided invaluable help with censusing red-cockaded woodpecker colonies in spring and fall.

Volunteers from Students Concerned About Protecting the Environment (SCAPE), assisted Forestry Technician Dendy and the fire crew in planting 3,000 cherrybark and Nuttall oak seedlings in the Highway 25 field.

Margaret Copeland again provided hundreds of hours of volunteer service concerning RCW management and census of rookeries. Her dedication and enthusiasm to the Refuge is unparalleled.

5. Funding

The following chart compares the funding levels for the previous five years.

FUNDING SOURCES	FY 1996	FY 1995	FY 1994	FY 1993	FY 1992
1261 - Operations	\$418,000	\$299,500	\$303,900	\$272,200	\$275,200
1262 - Maintenance	0	116,200	124,300	117,100	111,000
6860 - Exp. for Sales	65,000	65,000	65,000	95,000	95,000
O&M TOTALS	\$483,000	\$480,700	\$493,200	\$401,500	\$481,200
1260 - O&M ²	\$84,600	\$42,600	\$ 69,100	\$ 32,100	\$ 50,200
9100 - Fire	143,500	122,200	130,400	133,100	98,200
1120 - Partners	7,700	0	5,000	9,500	4,000
1262 - YCC	3,300	3,300	0	2,800	2,700
4960 - Recreation Fees ¹	8,250	8,786	9,000	7,200	7,200
8610 - Quarters ¹	5,000	5,000	5,000	5,000	5,000
8550 - Forest Pest Mgt.	90,000	40,000	0	35,000	45,000
1261 - Challenge Grant	750	0	0	23,500	0
1971 - Reimbursable Agreement	2,500	4,500	20,000	0	0
¹ Amount available from collections on a carryover basis.					
² One-time Resource Funding, i.e., Volunteer Program, Maintenance Projects, Coop Student					

A reimbursable account with the U.S. Forest Service for helicopter manager services was established for \$2,500. National Rifle Association (ECHO Project) furnished \$750 for a challenge grant to be used for handicapped facilities.

Also, for the fourth year, per their Memorandum of Agreement, Georgia-Pacific paid \$5,000 (advance payment) for red-cockaded census work done on GP land in Winston County, MS. This MOA authorized \$25,000 to be paid in five annual payments.

6. Safety

In addition to our routine tailgate safety sessions, Beltone tested the staff's hearing on March 25. We passed.

Two accidents this year involved Refuge personnel. Our 1990 Chevrolet fire engine was totaled on January 16, when it left a levee and landed in a bayou. Firefighter Ashford was on a training detail in Louisiana with the engine when the accident occurred. Also, on April 29, Tom Jackson was replacing radial gates when a foreign body blew into his eye and caused an abrasion. No lost time resulted from either accident.

A hunting accident occurred on October 12, opening day of squirrel hunting season, when a squirrel hunter accidentally shot a deer archery hunter in his tree stand. The victim's physical injuries were not permanent, but he probably won't feel safe in a tree again.

The public had several vehicle accidents on the Refuge with only minor injuries.

7. Technical Assistance

Biologist Richardson continued work concerning a MOA with Georgia-Pacific and a Legacy Funding Project at Barksdale Air Force Base concerning RCWs. Technical assistance was also provided to Gulf States Timber Company in Alabama concerning RCW management.

8. Other Items

Refuge Revenue Sharing payments for FY'95 were presented to county governments as follows: Noxubee County -\$71,417; Oktibbeha County - \$88,726; Winston County - \$122,077. The payments represented 66% of total entitlement.

F. HABITAT MANAGEMENT

1. General

Noxubee National Wildlife Refuge was established by Executive Order in 1940 from lands acquired by the Resettlement Administration. Most of the Refuge is forested. Pine, pine-hardwood, upland hardwood, and bottomland hardwood, along with many old fields, three lakes, four green-timber reservoirs and several agricultural areas create a highly diversified block of habitat. Forest management has maintained this habitat diversification.

2. Wetlands

Approximately 5 percent, or 2,400 acres, of Noxubee NWR is classified as wetlands, most of which is found in two lakes, Bluff (1,200 acres) and Loakfoma (600 acres). The Prisock Moist-soil Management Area (MSMA), 220 acres, consists of 11 units or subimpoundments, each varying in size from 5 to 30 acres. Eight of these units are connected by a control ditch, which allows a limited amount of independent management of these units. Ross Branch Reservoir, 43 surface acres, provides water for irrigation and early fall flooding for these units. The remaining wetlands are the Noxubee River and many streams, ponds, borrow pits, oxbows, sloughs and a few scattered field impoundments. During the winter and spring months, the Noxubee River and its tributaries can inundate approximately 8,750 acres of the 11,789 acres of bottomland hardwood forest. Included in these acres are three managed green-timber reservoirs, GTR #1 (250 acres) and GTR #2 (200 acres) and GTR #4 (500 acres). These areas provide important habitat for a variety of waterfowl and other wildlife.

Loakfoma Lake -A drawdown of this lake occurred in July for the purpose of clearing the shoreline around the new Morgan Hill Overlook and mowing the back section of the lake around the island. Water levels were brought up in October.

Waterfowl once again made extensive use of the lake. Mallards and widgeon were most abundant. The lake will be held at full-pool in 1997 to minimize regrowth of willow and buttonbush around the lake margins.

Bluff Lake was at full pool January through July. A slow drawdown occurred in July. Again in 1996, the cattle egrets nested in the center of Bluff Lake. The rookery population was estimated at >2,000 pairs of cattle egrets.

Waterfowl made good use of the back of Bluff Lake throughout the season especially in areas sheared and disced in 1993. These same sheared areas were disced again in August to control regrowth of cypress. Approximately 8,000 mallards took advantage of the habitat provided.

Ross Branch was held at full pool throughout the year due to above average rainfall. Some water was used to irrigate the impoundments at the Prisock fields; however, it was quickly replaced by precipitation. This lake does not benefit waterfowl through its drawdown directly, but is instead an important source for irrigation of the Prisock Field Moist-soil units. Periodic releases of water occurred into October - December to irrigate or partially flood moist-soil units.

Prisock Field Moist-soil Impoundments - The management activities conducted in the 11 moist-soil units of Prisock Field are included in the following chart. In general, either the impoundment was planted to a crop, sown with Japanese millet after drawdown, or disked and natural moist-soil vegetation allowed to grow. Wild millet responded very well to the early disking. Two years ago, we began investigating what we term a "shock drawdown" on the first of July. Results of this moist soil management activity have been very encouraging to date. Procedure is as follows: In impoundments where soil was disturbed the year before, then flooded over the winter...allow water to stand in the impoundment until July 1. Quickly remove all water from the impoundment, and irrigate resultant vegetation as needed. Outstanding crops of wild millet have resulted from this practice in the first year following soil disturbance. Second year results from this management practice have not been as encouraging, although acceptable stands of millet have occurred.

IMPOUNDMENT	MANAGEMENT ACTIVITY	YIELD
1	DISCED/MILO AND BROWNTOP MILLET	MILO/EXCELLENT, MILLET/EXCELLENT
2	DRAWDOWN/IRRIGATED	WILD MILLET/GOOD
3	DRAWDOWN/IRRIGATED	WILD MILLET/GOOD
4	DISCED/MILO	MILO/EXCELLENT
5A	DISCED/MILO	MILO/EXCELLENT
5B	DISCED/EGYPTIAN WHEAT	WILD MILLET/FAIR, EGYPTIAN WHEAT/POOR
6	DISCED/MILO	MILO/FAIR
7	DRAWDOWN/IRRIGATED	WILD MILLET/EXCELLENT
8	DRAWDOWN/IRRIGATED	WILD MILLET/EXCELLENT
9	DISCED/DRILLED WITH BROWNTOP MILLET/MILO	BROWNTOP MILLET/GOOD MILO/GOOD
10	UNDISTURBED	3-SQUARE/POOR
11	DISCED, MILO/BROWNTOP MILLET	MILLET/EXCELLENT, MILO/EXCELLENT

GTR #1, #2, and #4- At the beginning of the season, November, GTR #1 was inundated to full pool by December 1. Then GTR #2 was inundated to full pool by January 1, 1996, being followed by GTR #4, which reached full pool by February 1, 1996. This method provided quality habitat throughout the waterfowl season but minimized the retention of water on the trees in spring.

GTR #3 - This "GTR" has been managed as a moist-soil unit since the loss of hard mast producing trees in the 1970's caused by water retention on the trees during the growing season by beaver. This impoundment is the most manageable of the impoundments because of a permanent source of water inflow from Oktoc Creek. GTR #3 was disked and planted with millet with a good crop resulting.

Crops planted in #9 impoundment are planted in strips which alternate with strips planted the previous year and the year before (three year rotations). This is done to provide waterfowl with both high protein foods (invertebrates) and high energy foods (seeds) within the same impoundment.



Strip planting in Prisock Impoundment #9.
(4b-96 - Hall)

3. Forests

Approximately 93% of the Refuge is forested (44,376 acres). Of the forested acres, 42,867 is under long-term management. Approximately 1,500 acres is in a proposed Wilderness Area, a Society of American Foresters Natural Areas and in Areas of Special Consideration. The goals of our forest management, as outlined in our new plan, are to:

1. Provide suitable habitat for the endangered red-cockaded woodpecker
2. Provide food and habitat for migratory waterfowl

3. Provide habitat for neotropical migrant birds
4. Provide habitat for the variety of wildlife species native to east-central Mississippi and the East Gulf Coast Plan Ecosystem
5. Emphasize diversity within the represented habitat types
6. Provide leadership in the management of wildlife and forest-wildlife habitat
7. Promote wildlife oriented recreation opportunities
8. Provide opportunities for environmental education

Forest habitat management concentrates on developing and maintaining RCW habitats; protecting and maintaining habitats that support rare or endangered plants or animals; maintaining diversity within hardwood stands while increasing mast production; producing and maintaining a desirable age class diversity. Maintaining old growth (100+ year old) loblolly pine stands is very important in meeting the nesting and roosting requirements of the Federally listed endangered red-cockaded woodpecker (RCW). The Refuge attempts to protect and preserve the oldest age classes in the forest for the long-term benefit of the RCW.

Noxubee has two State record big trees, a black oak (69.9" DBH; 104' crown width; 107' tall) and a scarlet oak (36.2" DBH; 67' crown width; 93' tall).

Refuge forestlands are classified in five major types. They are . .

<u>TYPE</u>	<u>ACREAGE</u>
Pine	16,843
Pine-Hardwood	10,172
Upland Hardwood	2,972
Bottomland Hardwood	14,186
Cypress	<u>203</u>
TOTAL	44,376

The above acreages were obtained in 1994 when we typed and digitized the stands into the GIS system. The Refuge will strive to maintain approximately the same mix of forest types in the future. The bottomland hardwood acreage includes three green-timber reservoirs.

Total timber volume in 1991 was approximately 531,132,000 board feet (International 1/4" Rule), based on remeasurements of Continuous Forest Inventory (CFI) plots in 1991. Forest growth averages 1 percent annually. Measurements of CFI plots, which were scheduled to start in the fall of 1996, were delayed until the new global positioning (GPS) Precise Lightweight GPS Receiver (PLGR) was obtained and operational. The PLGR (plugger) arrived mid-December, too late to start CFI measurements in 1996. The PLGR is able to determine the latitude and longitude of a point to within seven feet of actual geographic position. This instrument is very helpful in locating plots in the field, transferring data to a GIS program, and relocating in the future of CFI plots.

To improve RCW cluster habitat and maintain habitat diversity, various silvicultural techniques are employed (i.e., commercial timber harvests, intermediate thinnings and improvement cuts, seed-tree cuts, midstory removals and prescribed burning). Use of these treatments enables managers to provide a range of habitat necessary to support RCW groups, a variety of waterfowl and other migratory birds, and other indigenous game and nongame species.

Timber was removed to improve wildlife habitat, promote regeneration of pines and desirable hardwoods, and control southern pine beetle outbreaks. Infested trees were cut and removed to prevent the continued spread of the SPB. Trees already killed by the pest were left for wildlife habitat. A summary of these removals is in Table III. We now require our contractors to adhere to Mississippi's Best Forest Management Practices.



Rehabilitated log-landing and skidder trail. (5-96 Hall)

Thinnings, improvement cuts and regeneration cuts were applied on two compartments entered. Only one improvement thinning was done in bottomland hardwoods. However, our hardwood management focuses on thinnings and improvement cuts that remove undesirable trees competing with the better oaks, hickories and other species favored by wildlife. Sweetgum and other unwanted species were removed from a portion of GTR #4 during the year.

As per the forest management plan three compartments (10, 22, and 25) were entered and management prescriptions written for each. An operator-select method has been initiated in Compartment 10's thinning sale area. Other management sale areas in these compartments are being held in reserve to meet anticipated land for timber swaps.

The average stumpage values for timber products sold in 1996 were as follows:

PRODUCT	AVG. STUMPAGE PRICE (INTERNATIONAL 1/4" RULE)
Pine Sawtimber	\$376.29/MBF
Pine Chip-N-Saw	\$116.69/MBF
Pine Salvage Sawtimber	\$ 76.38/MBF
Pine Pulpwood	\$9.31 /Cord
Hardwood Pulpwood	none sold
Hardwood Sawtimber	\$33.75/MBF

Table II itemizes timber sold during CY 1996; actual volumes removed are itemized in Table III. Occasionally these figures will differ. Some sales are split into several operating units, and the buyer need only pay for one unit at a time. Some sales, due to their size and shortened operating seasons (because of wet conditions), are given multi-year operating periods. Thus, a sale may be purchased during one calendar year, and the timber not paid for or removed until the following calendar year.

Eighty-one firewood permits were issued CY96. This is up by five permits over the CY95 permits, the lowest ever since beginning the firewood program in 1979. Local interest in this program has declined from the conception. The permit authorized cutting two cords for personal use in

designated areas. Firewood areas utilize the removal of midstory hardwoods to provide red-cockaded woodpecker foraging habitat.

Volunteers from Students Concerned About Protecting the Environment (SCAPE), Forestry Technician Dendy, and the fire crew planted 3,000 cherrybark and Nuttall oak seedlings in the Highway 25 field.

TABLE II

SUMMARY OF REFUGE TIMBER SALES MADE DURING CALENDAR YEAR 1996

PERMIT DATE	SUP NOX—	COMP	ACRES	PURCHASER	VOLUME SOLD				STUMPAGE VALUE				TOTAL VALUE	REMARKS
					CORDS		INT'L 1/4" RULE		PER CORD		PER MBF			
					PINE	HWD	PINE	HWD	PINE	HWD	PINE	HWD		
01/09/96	509-96	1,17	15	WILLIE TRIPPLET	75				\$5.00				\$375.00	Southern Pine Beetle
02/09/96	510-96	1-28	420	PENICK FOREST PRODUCTS	2,737				\$9.00				\$24,633.00	Thinning
03/01/96	511-96	1,9,11	5	PRISCOCK BROS. LOGGING			11,070				\$55.00		\$608.85	Southern Pine Beetle
04/19/96	512-96	7	30	ROY EICHCHBERGER	41.8				\$9.00				\$376.20	Thinning
05/12/96	513-96	22	8	PRISCOCK BROS. LOGGING		30	21,578		\$8.00	\$180.00			\$4,124.04	Seed Tree
06/12/96	514-96	17	120	CHAMBERS LOGGING INC.	420		406,487		\$8.14	\$86.25			\$38,478.30	Operator—Select Thinning
07/07/96	515-96	19	20	FULLER LOGGING INC.				132,348			\$33.75		\$4,466.75	Gum Removal
07/15/96	516-96	10	27	FULLER LOGGING INC.	56		100,485		\$8.25	\$86.25			\$9,128.83	Seed Tree / Thinning
07/22/96	517-96	10	2	FULLER LOGGING INC.			25,569			\$55.00			\$1,406.30	Southern Pine Beetle
07/22/96	518-96	1	4	DANIEL K. HARSH			9,771			\$55.00			\$537.41	Southern Pine Beetle
10/04/96	519-96	10	15	FULLER LOGGING INC.	95		174,939		\$31.62	\$189.95			\$36,233.56	Operator—Select Thinning
TOTALS			666		3,425	30	749,899	132,348					\$120,368.23	

TABLE III

ACTUAL TIMBER VOLUMES REMOVED - CY 1996

Type Cut	No. Permits	No. Acres	----- PINE -----		- HARDWOOD -		Value \$
			Bd. Ft.	Cords	Bd. Ft.	Cords	
Thinnings & Improvements	10	700	963,380	2,732	132,348		194,802.21
Regeneration cuts	1	34	82,115	53			26,815.53
Salvage ¹	4	30	146,895	56.3			11,683.95
RCW Thinnings	0	0	0	0			
TOTALS	15	764	1,192,390	2,841	132,348		\$233,301.69

¹Includes salvage of pine trees infested with southern pine beetles.

4. Croplands

No cooperative farming occurs on Noxubee. A small amount (400 acres) of force account farming is carried out annually. The primary purpose is to supplement natural waterfowl foods with a minimum amount of cultivated acres and to maintain diversity by periodically discing and planting a few upland fields. Agricultural crops cultivated included a mixture of grain sorghum, Egyptian wheat, sunflower and Japanese millet planted in the Prisock Field Moist-soil Impoundments. In the fall, winter wheat obtained from Wheeler NWR was drilled and broadcast planted in the Goose Overlook, some of the Doyle Arm fields, and several small, scattered fields.

Many fields, previously farmed or hayed by cooperators, are now bushhogged, stripped disced or burned to maintain these forest openings.

5. Grasslands

In 1993 the Refuge embarked on a prairie restoration project with the assistance of Mississippi State University. A field, known as Morgan Hill, is located on the western edge of the Alabama blackbelt prairie. Before settlement this area consisted of a tall grass prairie interspersed with cedar and oak-hickory groves. It is even reported that buffalo once roamed this area. Test plots of Indian, switch and big blue stem grasses were sown in 1993. In 1996, the big blue stem grasses made significant seed heads. To promote expansion of this and the Indian and switch grass, strips near the plots were disced and the field was scheduled for burning in January 1997.

8. Haying

Two cooperators hayed on the Refuge. One was Cooperator Leon Fuller who hayed fields 9-16, 17 and 18 (Tripletts Pasture). The second cooperator, Curtis Smith, hayed the Smith Field and several other fields to assist with Johnson grass control.

9. Fire Management

Prescribed fire is perhaps the most important management tool available to us in pine management on Noxubee Refuge. We burn almost all 13,204 acres of our upland pine. We also burn part of our pine-hardwood type and open fields. In all, approximately 16,000 acres is in the prescribed burn program.

The goals of the prescribed burn program are:

- 1) **Hazard fuel reduction.** Frequent controlled burns reduce the frequency and damage potential of wildfires.
- 2) **RCW habitat maintenance.** Prescribed fire, especially growing season burns, help control hardwood and pine midstory encroachment in RCW colony areas.
- 3) **Forage improvement.** Prescribed burns increase the yield and quality of herbage, legumes and browse.
- 4) **Maintain openings.** Fire is the most cost effective way of maintaining our forest openings and fields.

Our annual prescribed burning season usually begins following the second killing frost in November and continues through about March 31. Each year our desired goal is to prescribe burn between five and six thousand acres (three-year rotation). During most years we can do this, but since the number of available burning days during any one year is entirely dependent on suitable weather conditions, it is common to burn more one year and less the next.

Twenty-two prescribed fires were ignited using aerial ignition and hand burning in 1996 for a total of 4,826 acres. Most of these burns were winter-spring hazard reduction and wildlife habitat improvement burns. However, several growing season burns were conducted in May to control hardwood growth in RCW clusters. In 1997, expansion of growing season burns is anticipated. The fire crew and staff contributed to all the burns. Besides the staff, personnel from Mississippi Sandhill Crane Refuge and the Natchez Trace Parkway helped with our burning efforts.



Growing-season burns attack dense vegetation.
(6 -96 Hall)



Reducing it to habitat more favorable to the RCW.
(7-96 Hall)

Noxubee maintains an agreement with the Mississippi Forestry Commission (MFC) for wildfire detection and initial attack on Refuge fires. MFC is reimbursed five cents per acre for 42,000 acres (\$2,100 per year) and for the actual cost of each fire they suppress.

Four wildfires (151 acres) occurred, two were controlled by Refuge staff. No resource damage occurred as a result of these fires. Noxubee employees helped on prescribed burning operations at Mississippi Sandhill Crane Refuge. Forestry Technician Dendy assisted the Homochitto Ranger District (FS) as a helicopter manager on a wildfire incident.

Fire Fighter Ashford taught a fire pumps and water training course at Cameron Prairie NWR. While teaching this course with Noxubee's fire truck one foggy morning, missed a turn in the road and found a Louisiana bayou. Neither Ashford nor the truck could swim. Both, however, were rescued. Ashford survived but the truck did not. Moral is that this is not the preferred method of obtaining a new fire truck.

After much haggling and delays with the contractor, an ATV-mounted drip torch was obtained. The torch mounted on an ATV will speed up firing operations and decrease the firing personnel needed so that they can be used with the holding crew.

10. Pest Control

The number southern pine beetle (SPB) spots was greatly reduced from 114 spots in CY95 to only 7 spots that needed salvaging in CY96. The quick application of harvesting and removing of infested trees limits the potential of another SPB epidemic. Spots with five or fewer infested trees were left unharvested to provide wildlife habitat benefits.

Beaver control is covered in Section G-15.

Pesticides used in 1996 were as follows:

Chemical Used	Gallons Used	Acres Treated	Target Pest	Crop or Area
Arsenal	0.25	5	Hardwoods and Cypress	RCW cluster and Bluff Lake Levee
2,4-D Amine	½	2	Broadleaf weeds	Prisock Fields
Glyphosphate	2.00	20	Grasses/weeds	Parking Lots, Johnson Grass, Roadsides

The loan of the boom mower from Mississippi Wetland Management District greatly added to Noxubee's Integrated Pest Management Program due to the mowing of several levees and around the margin of the lakes. The willingness of stations to lend equipment certainly adds flexibility to the Services capabilities and maximizes funding resources. We appreciate MWMD's cooperation.

12. Wilderness and Special Areas

Presently the Refuge has two areas established by the Society of American Foresters (SAF) as Research Natural Areas. The "Old Robinson Road Research Natural Area," containing 46 acres of SAF Type 101, Bald Cypress, was designated in July 1959. The other area, established in December 1973, is the "Morgan Hill Research Natural Area," consisting of 67 acres of SAF Type 49, Eastern Red Cedar-Pine Hardwood. These areas are protected for the primary purposes of research and education with natural vegetative succession continuing uninterrupted.

The Refuge has one recognized National Historic Landmark (April 1975). It consists of a small 1.75-mile section of the Old Robinson Road, the first road in Mississippi to be built with state and federal monies. Built in the early 1830's, Robinson Road played a major role in state development by connecting Columbus with Jackson. Management policy is to protect the 16-foot wide right-of-way. Periodic maintenance is done to keep this small section of the road open.

In addition, the Refuge has a Proposed National Wilderness Area, consisting of 1,200 acres of bottomland hardwoods, to be preserved under the Wilderness Act of 1964. The area was proposed as wilderness in 1974, but Congressional action is still pending. Meanwhile, it will continue to be treated as wilderness.

Five other "Areas of Special Consideration" have been set aside in which management will be excluded. These areas will be treated similarly to our SAF Natural Areas. They will be protected and preserved for research and education. They are frequently used by Mississippi State University botany and ecology classes. One of these areas, Pete's Slough, contains about 150 acres; the other four are relatively small (5-10 acres each).

Several of these areas contain species of plants and trees that are uncommon to this part of Mississippi, such as relatively large specimens of Nuttall oak, diamond-leaf oak, Durand oak, and their associated species.

One area has at least 85 species of herbs, shrubs, vines, and trees, including uncommon or regionally rare species such as chinkapin and fringe tree.

Another area of importance to taxonomy students contains several other herbs, such as pachysandra (Pachysandra procumbens Michx.), early saxifrage and bloodroot, all of which are very uncommon in northeastern Mississippi.

15. Private Lands

We maintain annual contact with 30 private landowners who have been furnished with over 90 boxes and predator shields over the past 7 years.

Manger Tisdale met with numerous landowners reviewing potential Partners projects. Two projects showed promise and were written up and submitted to the ecosystem team for funding.

Biologist Richardson conducted surveys of RCW Clusters on Georgia-Pacific Corporation Timberlands as part of a MOA. Richardson also continued to assist the Noxubee County School Board on managing an active cluster on 16 Section Land and a cluster on Barge Lumber Company land. Assistance with placing inserts at clusters with extensive windthrow was provided to Gulf States Timber Company in Alabama. An on-site inspection of 2 clusters near Shreveport, LA on private lands was done by biologist Richardson in conjunction with the Lafayette ES office.

G. WILDLIFE

1. Wildlife Diversity

Wildlife diversity is maintained through management of various habitats. This entails a forest management program that provides stands of varying species composition and age. Permanent and seasonally flooded areas and permanent openings (old fields and croplands) are also provided. Within these habitats are found at least 254 species of birds, 47 mammals, 34 reptiles, 23 amphibians, 25 fish, and hundreds of invertebrate species.

2. Endangered and/or Threatened Species

Several endangered or threatened species occur here including the American alligator, bald eagle and the red-cockaded woodpecker. A State endangered species, the wood stork, used Noxubee during the summer months.

One golden eagles was observed on several occasions this year. Three mature and two immature bald eagles were seen around the lakes during the winter months. The nest platform in Bluff Lake was not used. Numerous

people came to see the eagles as a result of a article published in the Starkville Daily News.

Red-cockaded woodpecker management continues to receive considerable attention. All active, inactive, and artificial clusters were surveyed in spring for status. Of these, 35 were active, thirty-two clusters reproduced, and at least 30 produced young. This represents the highest number of active clusters since 1970 when surveys for this species were first undertaken.

In June, a recently fledged male RCW was found on the headquarters road near its natal cluster. The bird appeared thin and could not hold to a tree. An x-ray of the leg revealed a break in the tibia. Biologist Richardson acted as caretaker of the bird for a week until the break could heal. The bird was released back to its natal cluster and was observed being fed by the adults. Several months later the bird still was in its natal cluster.

In June, a nest with 2 ten-day old RCW was abandoned. It is believed the adults were killed by an avian predator. The young were taken into captivity for 1 day and nourished by volunteer Copeland with meal worms, crickets, and dog food. The young were subsequently placed into separate nests of RCW which each had only 1 nestling of their own. In both cases the foster RCW were "taken in" and fledged along with their foster brother or sister.

Several translocations of RCW were done in 1996 to bolster population growth. Two birds were moved to an inactive cluster (54) in hopes of establishing a pair. The female stayed but the male disappeared. The female remained at the site and was augmented with a juvenile male 4 weeks later. The pair have stayed at the site.

In December 1996, 2 male RCWs, from private lands near Noxubee, were translocated to the Desoto National Forest to assist in RCW recovery activities. Simultaneously, 2 juvenile female RCW were brought from the Appalachian National Forest to pair with these birds. At least 1 of the pairs has remained together, and the other is uncertain.

Assistant Manager Hall, Biologist Richardson and Bio-tech Bradford evaluated a mechanic's pick-up tool as a new technique for removing RCW nestlings from the cavity. This approach appears superior to the old noose method in that it enables older-aged young to be captured during a period when the sex of the young can be determined. A manuscript concerning the technique was prepared and submitted to the Wildlife Society Bulletin for consideration.

Survey of RCW clusters on GP timberlands in Noxubee and Winston counties continued in 1996. Four groups at the Wildwood Tract in Winston County

remain active. Only two of the five sites in Noxubee County remain active which represents the loss a 1 additional site from 1995.

The sole RCW group on Barge Lumber Company, south of the Refuge, remained active, as did the group on 16 Section Land in Noxubee County. Our staff did more clearing around the cavity trees on 16 Section land as part of a cooperative venture to perpetuate this group in the short-term. In addition, 2 more cavity inserts were installed at the site.

We undertook a project through Legacy Funding to examine possible RCW introduction to Barksdale Air Force Base, Shreveport, Louisiana. The base, with about 5,000 acres of habitat, would like to support a population of perhaps 20 groups and serve as a possible site for mitigation for HCPs dealing with RCW in Louisiana. Three clusters were prepared in summer at the base along with placement of inserts. No birds were moved to the these sites. In 1997, translocation activities will commence if donor groups can be identified on private lands.

3. Waterfowl

Waterfowl numbers remained stable with 12,000 ducks being observed during the mid-winter waterfowl census in January 1997. These were mostly mallards, gadwall, ringed-neck, and wood ducks. Ducks seemed to concentrate in the Prisock Moist Soil Management Area and GTR 3.

Three rounds of wood duck nest box inspections were done. Total production remains relatively high with the majority of boxes being used. Dump nesting (nests with >16 wood duck eggs) occurs in many nest attempts. In addition, more than 50 mixed clutches of wood duck X hooded merganser nests were recorded. The number of unused boxes was attributed to the nest box study evaluating a smaller box to reduce dump nesting and increase production. Despite a relatively high dump nesting rate and loss of partial clutches, Noxubee continues to produce many wood ducks.

ANNUAL NARRATIVE REPORT FORM
WOOD DUCK BOX PROGRAM INFORMATION

REFUGE: NOXUBEE

NESTING YEAR: 1996

	<u>NUMBER</u>	<u>PERCENT</u>
Total usable boxes	158	
Estimated boxes used by wood ducks	130 ¹	85%
Estimated wood duck dump nest (> 16 eggs)	32	25%
Estimated boxes used by Hooded Mergansers	30 ²	20%
Estimated boxes used by WODU x HOMO	50	32%
Estimated boxes used by other wildlife	20 ¹	13%
Estimated wood duck broods produced	105	
Estimated wood ducks hatched	1000	
Estimated WD's surviving to flight stage	500	50%

Plans for next year (Indicate number):

_____ More boxes
 _____ Fewer boxes
XXX_____ No change

Remarks:

¹Number reflects total nesting attempts.
 Detailed analysis of box program in Refuge files.

4. Marsh and Water Birds

The heron rookery at Pete's slough was active with over 90 great blue heron nests. Approximately 60 great blue herons and 10 great egrets nested in the cypress in the upper end of Bluff Lake. A census of herons nesting near Carter Lake towards Brooksville was not conducted in 1996.

Over 2,000 pairs of cattle egrets nested in a small clump (2-4 acres) of cypress saplings in the middle of Bluff Lake. Over 28,000 cattle egrets were recorded in fall, the obvious result of many successful nests.

6. Raptors

Perhaps the most cherished sighting of a raptor, here at Noxubee, is that of the bald eagle. Many visitors flocked to the new Morgan Hill overlook in the winter months to view a pair which chose this site as their favorite. Other common raptor species seen at Noxubee include red-tailed hawks, red-shouldered hawks, northern harrier, black and turkey vultures, and barred and screech owls. Present but less commonly seen raptors are Cooper's hawk, American kestrel, osprey, and golden eagles and great horned owl.

Black vultures nested for the 6th year in the old shed by the Kinard Tract.

7. Other Migratory Birds

The 27th annual Christmas Bird Count was conducted mainly on Noxubee by the Oktibbeha Audubon Society. Almost 100 species were recorded on December 18.

8. Game Mammals

The most hunted game mammal is the white-tailed deer. The population of deer has remained fairly stable through a public hunt program. Other game mammals open for public hunting included raccoons, squirrel, and the incidental taking of beaver, coyotes, and feral hogs.



Greg Cates with largest deer harvested this year. (8-96 Hall)

11. Fishery Resources

Bluff Lake, Loakfoma Lake, Ross Branch Reservoir, and the Noxubee River harbor a substantial fishery resource.

No supplemental stockings were performed. MSU did not perform a survey of the fisheries population in 1996 of Bluff, Loakfoma and Ross Branch. A new estimate will be performed in 1997. These population estimates are used in determining length and creel limits for the lakes.

14. Scientific Collections

Several scientific collections were allowed during 1996. Collection of insects and related arthropods continued to be done by Dr. Brown, Mississippi Entomology Museum. Dr. Evan Nebecker, Department of Entomology, collected SPB infested pine trees as part of his study of this pest species. Egg mass collections of various frogs and salamanders were done by Dr.

Ronn Altig, MSU, Dept. Biological Sciences. Several professors collected small numbers of plants and small mammals for various field labs from MSU.

15. Animal Control

Our annual control of beaver continued in the hardwood bottoms, near water control structures and along levees. Bio-tech Bradford was responsible for this effort. The collective total for the year was over 100 beavers. Early May was spent blowing beaver dams using Kinepak - evidence that many beavers remain. Efforts to control muskrats and nutria in the Prisock Field impoundments also continued.

16. Marking and Banding

Work on red-cockaded woodpeckers continued during the year with 57 adults and nestling birds being banded.

Preseason wood duck banding continues to be a high priority and a great source of staff enjoyment. Hens were banded from nest boxes during nest box inspections. Four baited sites were maintained for use with the rocket-nets in fall. Over 320 wood ducks were banded in 1996 and over 200 recaptures recorded. In addition, 10 hooded merganser hens were banded during box inspections. In conjunction with MSU, Department of Wildlife and Fisheries, we banded more than 900 day-old wood ducks as part of a continuing study examining use of a new plasticine band.

WOOD DUCK PRESEASON BANDING RESULTS			
SEX	AGE	QUOTA	BANDED
F	AHY	50	76
F	HY	50	118
M	AHY	50	34
M	HY	50	131
TOTALS		200	359



Swim-in trap caught more than waterfowl. (9 -96 Richardson)

H. PUBLIC USE

1. General

Public use followed a normal annual cycle. Refuge usage was light following deer season in January. March showed an increase with opening of fishing and turkey seasons. Summer visitation remained light due to summer heat. September visitation slowly increased with the opening of archery season and milder temperatures that brought out late season fishers. The opening of gun deer season again brought an influx of sportsmen. In all, the Refuge estimated 123,031 visits for 1996. This represents a slight decrease from last year's total of 124,912 visits.

2. Outdoor Classrooms - Students

Noxubee's wildlife, habitat diversity and convenient location to several colleges and universities make it an ideal setting for an outdoor classroom. The Refuge is used extensively by the Biological Sciences, Forestry, and Wildlife and Fisheries Departments from Mississippi State University.



MSU Fisheries class in action. (10-96 Hall)

Staff again accompanied visiting students, scouts, and researchers to provide more formal guidance into the management of the lands and waters.

A real need exists for funding to construct the visitor center and auditorium to support environmental education. The proximity of Noxubee to Starkville makes it a living laboratory for grade schoolers and college students as well. Discussions again continued throughout the year between the Noxubee staff, Regional Office personnel, and the Starkville school board about the school board's financing an environmental education center on the Refuge. The school board is to contract an architect to draft the conceptual ideas for the center, and the Service is to pursue the possibility of matching funds and permits. The Regional solicitor's office prepared a draft agreement for the center during the year. Perhaps in 1997, we will receive a copy of it.

4. Interpretive Foot Trails

Four self-guided trails are available for public use: The Wilderness Trail (3.4 miles), The Woodpecker Trail (¼ mile), Trail of the Big Trees (four miles round trip), and the Beaver Dam Trail (½ mile round trip). The Woodpecker Trail, located near the office, continues to be the favorite. All trails were cleared of fallen trees in summer and repairs and improvements made to the

foot bridge on the Beaver Dam Trail. Trail-markers placed on these trails were again in 1996 taken by the public as souvenirs.

The Wilderness Trail, which circles through the "Wilderness Area" was completed during the year due to the volunteer efforts of the Golden Triangle Sierra Club chapter. A span bridge (60 foot) across the Noxubee River was constructed. This bridge represented the last stage of trail construction, and after a new parking area was built at the end of the Keaton Tower Road, the "Wilderness Trail" was dedicated during the observance of National Wildlife Refuge Week.

6. Interpretive Exhibits/Demonstrations

The Canada Goose Overlook represents the most visited point during fall. Visitors are blessed with seeing wildlife from this vantage point including white-tailed deer feeding in the green fields and geese nesting on platforms in the spring. Many unsuccessful deer hunters come to the overlook to remind themselves of what deer really look like. As many as 50 people at one time venture out on the Overlook to see the deer. Often-times, up to 70 deer were seen just before dark.

The headquarters serves as the contact point for the public. The office contains several exhibits including one on the red-cockaded woodpecker and a nesting wood duck diorama. Perhaps when Noxubee is lucky enough to build its visitor center, we will see a much needed and improved visitor contact station.

The Morgan Hill Wildlife Observation platform was completed in February of this year.

8. Hunting

Deer hunting is our most popular public use activity. Deer seasons were held for archery, primitive weapons, modern firearm and youth/adult gun hunting. A fee permit system (\$12.50/permit) to hunt deer continued in 1995. A limited number of permits would have been sold; however, we didn't reach our goal. A total of 2,200 permits was sold for the year. We continued to use the permit/tag system, modeled after that used by the states of Louisiana and Georgia, this year. The paper tag system again received some negative comments based upon the fact that people were not careful in application of the tag, and as a result the tags were torn off during removal of the deer from the woods. All-in-all, however, the tag system seemed to work well.

Hunters were restricted to the take of one legal buck (defined under Mississippi law as a buck with four or more points) and one antlerless deer, which could be harvested during the archery, primitive weapons or modern firearms season. Seventy youth permits were issued for an opening weekend 2-day, either-sex deer hunt. Turn-out was light for the hunt again this year, with ten deer being harvested by youth hunters.

**Noxubee's
1996 Deer Management Objectives**

1. Approximate harvest of 275 antlered and 330 antlerless deer.
2. Yearling male weights (>80 pounds dressed), spike percentage less than 50%.
3. Lactation rates
 - a. Yearling females >20%
 - b. Adult females >70%
4. Number of 2.5+ year females in harvest \pm 50% of total female harvest.

The season ended with 376 deer being checked at the check-station. This harvest reflects a 28% decrease from 1995 (522 animals), a 9% decrease from 1994 (412 animals), and a 41% decrease from 1993 (637 animals). The sex ratio was 1:0.89 favoring does. Hunters were again constrained from their traditional opportunistic harvest of yearling bucks due to the Mississippi State law which defined a legal buck as one having four or more points. Despite this law yearling bucks still constituted 26% of the adult male harvest. In 1994, 74% of the legal bucks harvested were yearlings. Thirty-nine yearling bucks were harvested in 1995, which is a 50% decrease of 1994's harvest of 74 yearlings, and a 516% decrease from 1993's harvest of 191 yearlings. This trend will continue to promote "older age class" males as fewer yearling bucks can be legally harvested. This was reflected in the harvest this year of some truly large antlered bucks. However, Noxubee will not get involved in "Quality Deer Management."



Lonnie Fountain with 18" spread, 9-pointer taken from
handicapped-accessible blind. (11-96 Hall)

This year's adult doe harvest was 164 animals. Age class distribution for the adult does represented in the harvest continues to approach a more even spread. 1996's adult doe harvest of the 1.5, 2.5 and 3.5+ age classes as represented by percentage of the total adult harvest was 29%, 31%, and 40%, respectively. Compare this to the same adult doe age classes represented in 1994's harvest of 35%, 65%, and 20%, respectively. A breakdown of the deer harvest is provided in Table IV.

Small game hunting was permitted for squirrel, rabbit, bobwhite quail, raccoon, and woodcock. Opossum were taken as incidental species during raccoon season, and coyotes were taken during all Refuge hunts. Squirrel season continued to be a favorite opener for the sportsmen when gray and fox squirrels were taken.

Raccoon hunting was permitted with the use of dogs at night and corresponded with state bag limits and seasons.

Turkey hunting is perhaps the second most anticipated hunt and attracted a host of sportsmen. In 1996, 54 bearded turkeys were checked during the spring. We still maintain an open, nonpermitted hunt. However, this is subject to review due to public complaints referencing overcrowding of hunters and a poor quality hunt as a result.

TABLE IV
1996-1997 DEER HARVEST DATA
SUMMARY

HUNTS							
	ARCHERY	YOUTH	1ST GUN	PR WEAP	2ND GUN	TOTAL	AVG. WEIGHT
BUCKS							
.5	-	1	24	3	10	38	48
1.5	1	3	22	1	20	47	93
2.5	1	1	16	4	43	65	111
3.5	-	-	6	1	14	21	135
4.5	-	-	4	0	3	7	136
5.5	-	-	-	0	3	3	136
TOTAL BUCKS	2	5	72	9	93	181	
DOES							
.5	0	-	17	2	12	31	42
1.5	2	2	27	-	17	48	71
2.5	3	3	23	2	20	51	79
3.5	2	-	13	2	12	29	81
4.5	1	-	9	0	2	12	83
5.5	-	-	5	-	6	11	88
6.5	-	-	0	-	4	4	88
7.5	-	-	2	-	1	3	78
8.5	-	-	1	-	1	2	78
UNKWN	3	-	-	1	0	4	
TOTAL DOES	11	5	97	7	75	195	
	ARCHERY	YOUTH	1ST GUN	PR WEAP	2ND GUN	TOTAL	
TOTAL TAKEN	13	10	169	16	168	376	

A youth waterfowl hunting/ecology course and associated hunts were held this year. Ducks Unlimited, Safari Club International, Mississippi State University Cooperative Extension Service and several small businesses supported this endeavor. Approximately 35 individuals (ages 11-16) participated in the one day workshop and later, a hunt. Youth hunters (and their non-hunting adult companion) were taken into GTR #1 on the first two weekends of waterfowl season for a guided hunt. The hunt was received with enthusiasm with coverage given on the workshop and hunt by Farm Week and Haas Outdoors. Haas's program will air on TNN in Fall 1997. Refuge waterfowl hunting has been closed since 1987. Public waterfowl hunting will be considered again when local duck populations again reach the mid-1970's levels.



Waterfowl workshop participants learning decoy techniques.
(12-96 Tisdale)

9. Fishing

Fishing season runs from March 1, through October 31, on all waters except the Noxubee River which remains open year round. Five special use permits (SUP) were issued for bowfishing at night on Bluff and Loakfoma lakes in 1996, resulting in approximately 130 pounds of rough fish being removed from the lakes. Heavy fishing pressure occurred on both Bluff and Loakfoma lakes which offered good fishing for bluegill, crappie, catfish and largemouth bass. Fishing on Ross Branch Reservoir was light, probably due in part to location and smaller-sized fish. A surge of fishermen was out for the first

couple of weeks of the season, but they stayed home during the hot summer months.

11. Wildlife Observation

Wildlife observation continued to be very popular. The arrival of wintering waterfowl brought out a host of bird watchers. Concentrations of birds could be seen in the evening setting into Bluff and Loakfoma lakes. A major attraction in fall was the Goose Overlook, planted with wheat and drawing approximately 200 Canada geese. However, more to the delight of many visitors was the herd of up to 70 deer seen regularly grazing in the afternoons. Many local and visiting birders regularly toured to see the red-cockaded woodpecker.

The new overlook on Morgan Hill received considerable attention during the year after its completion in February. Many visitors enjoyed the panoramic vista afforded by this platform, with its view of Loakfoma lake.

12. Other Wildlife Oriented Recreation

A user fee (\$25/local club and \$50/ sectional, regional, national trials) is charged for coon dog field trials. One national trial was held this year.

17. Law Enforcement

A component of one full-time and two collateral duty law enforcement officers was on board for the 1996-97 hunting season (Bobby Gentry-1802, David Richardson and Jim Hall). Besides their regular duties, the collateral duty officers support law enforcement efforts throughout the three-month deer hunting season and at other times during the year.

Due to continued reductions in collateral duty officers, use of personnel without law enforcement authority increased. Tisdale, Stockie, and other regular staff worked heavy hunter use-days during squirrel and deer seasons. They provided a Service presence and dispensed information, and their assistance aided law enforcement efforts on heavy public use days.

Several of the local state conservation officers also patrolled regularly on the Refuge during the peak hunting and fishing seasons.

We did not hold a coordination meeting this year with the local conservation officers and their supervisors, Justice Court judges and prosecuting attorneys before the opening of the fall hunting seasons. This coordination is usually necessary since all cases are handled through state court except serious migratory bird violations which are handled through Federal court.

The LE staff attended the 40-hour refresher at Quincy, Florida, in March. Semiannual firearm requalification in October was completed for all officers at the Mississippi State Police Academy in Jackson.

This was the sixth year of the deer hunting permit system. A permit allowed the holder to harvest one antlered and one antlerless deer. A total of 2,200 permits was sold, with 376 deer being harvested. Compliance with the system was good.

Our sign theft problem continues; however, we believe we made a serious inroad into the problem with our December, 1995 case. This involved fabrication of a radio-embedded sign. The sign was stolen within four weeks of erection, location discovered through telemetry, and information provided to the U.S. Attorney, via the special agent. The cases made will hopefully discourage sign thefts on the Refuge in the future. Beside the radio transmitter case, three additional sign theft cases were made this year.

No overflights to look for Cannabis plots were done. Several potential areas were thoroughly searched from the ground, but nothing was found.



The most common violation was off-road vehicling by MSU students.
(13 -96 - Gentry)

TABLE V
1996 SUMMARY OF CASES

	DISPOSITION				TOTAL FINES
	GUILTY	NOT-GUILTY	DISMISSED	PENDING	
Fishing w/o a valid license	3	0	3	3	\$ 237.00
Hunting in a restricted area	4	0	1	3	352.00
Deer hunting w/o hunt/orange	6	0	0	1	510.00
Off-road vehicle	20	0	0	1	1580.00
Boating w/o pers. flotation device	3	0	0	3	237.00
Fishing in a restricted area	8	0	0	0	707.00
Littering	4	0	0	1	403.00
Trespassing	2	0	0	2	158.00
Killing illegal deer	0	0	0	1	0.00
Illegal possession of deer	0	0	0	1	0.00
Exceeding visitors hours	4	0	0	0	316.00
Theft of refuge signs	3	0	0	0	388.00
Improperly tagged deer	3	0	0	4	249.00
Poss. of controlled substance	1	0	0	0	154.00
No hunting license	2	0	1	2	180.50
No refuge permit	3	0	1	1	273.00
Non-resident, no hunting license	1	0	0	0	109.50
Vandalism	2	0	0	0	158.00
Transport of a uncased gun	5	0	0	0	395.00
Hunting from a public road	1	0	1	0	154.00
Illegal possession of poison pods	1	0	0	0	91.00
Illegal possession of a firearm	1	0	0	0	79.00
No boat registration	0	0	1	0	.00
Unplugged firearm	3	0	0	1	493.00
Vehicle trespass	2	0	0	0	358.00
Violation of bass slot size	1	0	0	0	79.00
Illegal camping	1	0	0	0	79.00
TOTALS	84	0	8	24	\$7,740.00

TOTAL CASES IN 1996: 116 - of which 9 were made by Mississippi DFWP officers.

*Many license cases are dismissed when subjects produce their license after the fact.

18. Cooperating Associations

The local Sierra Club chapter (Golden Triangle) completed its work developing the "Wilderness Trail," a hiking trail through the proposed wilderness area. This trail follows an already established foot path, crosses the Noxubee River (on the new steel span footbridge) and continues along Oktoc Creek before circling north and returning across the Noxubee River. The trail is approximately 3.4 miles long.

Oktibbeha County Chapter of Quail Unlimited continued its MOA with the Refuge regarding wildlife habitat enhancement for quail. Call counts performed by the Chapter indicated that areas receiving direct management activities for quail have a 3 times higher call index than unmanaged areas.

I. EQUIPMENT AND FACILITIES

1. New Construction

The observation tower at Morgan Hill was completed during the year, and thus far has received considerable attention. Almost all of Loakfoma Lake is visible from the tower. Plans are to complete the prairie restoration interpretative trail, utilizing Boy Scouts, in 1997. This trail will link this new overlook to the parking lot on Bluff Lake Road.

Construction on the new Bluff Lake boardwalk began with the footbridge section being completed. This 50-foot bridge spans the borrow ditch adjacent to Bluff Lake's main levee. Discovery of artifacts on the island where the walkway will be constructed will necessitate building the rest of the boardwalk on "floats" using YCC labor.

A 60-foot steel foot bridge was constructed at the end of the Keaton Tower Road, spanning the Noxubee River. This bridge was the final chapter in the completion of the Wilderness Trail constructed by the Golden Triangle Chapter of the Sierra Club. All machinery work was accomplished from one side of the river with minimal impact done to the site.

Materials were purchased to construct another steel footbridge across Oktoc Creek, at the west end of GTR #4 levee.



Footlog across Noxubee River was only for the adventurous.
(14-96 Hall)



New footbridge is even for the tenderfoot. (15-96 Hall)

2. Rehabilitation

Finally.....Noxubee has some new bridges!! The process, funded in 1994 and "Engineered", negotiated and awarded for contract in 1995, resulted in Ellis Construction's (Columbus, MS) building six new concrete bridges in 1996. Refuge staff performed the demolition of the old military-style bridges. Plans are to award a contract for the remaining five bridges in 1997 (we will wait and see!).

Rattlin'
Bridge on
Dummy
Line Road.
(16-96 Tisdale)



Same location, but
the new bridge doesn't
rattle. (17-96 Hall)

Two sections of levees were raised at the Prisock Field Moist Soil Management Area, the levee between #7 and #8 and the north-east levee of #11.

Asbestos abatement was performed on the primary maintenance shop, office and sign shop in 1996. New siding was installed on the sign shop, and a new ceiling erected in the storage room of the office. A new ceiling will be installed in the shop early in 1997, during the cold, wet, dreary period.

Quarters #187 received new carpet and a gas range, and new wooden desktops and shelving were built for the office computer/forestry room,

4. Equipment Utilization and Replacement

A new four wheeler was received during the year. Two new Dodge Dakota pickups were received to replace those worn out. In addition, a new batwing mower and a 6' bush hog were received.

6. Computer Systems

Bigger and faster seems to be the way to go. We now have machines we couldn't have imagined 10 years ago, and they are already outdated. Programs are becoming so complex that memory is quickly utilized. All administrative personnel are computer literate; why, even LE officer Gentry has a computer. Tisdale can't be far behind.

J. OTHER ITEMS

3. Items of Interest

- 4/16-17 - A law enforcement program review was conducted by Steve Wonderly, WO, Ken Chitwood, RO; Sidney Key, SA; Jim Pilgreen, SRA; and Lenny Jones, 1802 from Merritt Island NWR.
- 3/20-21 - Noxubee hosted an Eco-system team meeting. Tisdale attended several others within the eco-system throughout the year.
- 10/5 - National Wildlife Refuge Week celebration was held October 5, with public dedications of both Wilderness Trail and the Morgan Hill Overlook. The office was open and refreshments were served to visitors.



Active Refuge supporter, Judge Ernest Brown has been waiting for this trail for 30 years. (18-96 Hall)

Staff spoke at several conservation organization state meetings, Richardson - State Audubon Society meeting, Hall - State Ducks Unlimited meeting, Tisdale - State Wildlife Conservation meeting.

Employees receiving On-the-spot awards for various *identifiable* outstanding acts or performances were Jim Hall, Dusty Dendy, Paul Caudill, Tom Jackson, Johnny Wayne Bradford, Gwen Cotton, Elvis Gillespie, Jay Holdiness and Willie Kincaid.

Drainage system rehab rewarded by O-T-S. (19-96 Hall)





Bio-Tech Bradford received an award for the idea and design of inserts for prothonotary warblers.
(20-96 Richardson)

Tisdale didn't receive an award, but we thought he made a valiant effort.
(21-96 Hall)



EMPLOYEE	TRAINING	DATE	LOCATION
Fred Ashford	Standards for Survival	10/15	Noxubee NWR
Gwen Cotton	FileMaker Pro Administrative Workshop Troubleshooting & Repairing PCS	4/24-25 5/20-24 11/13-15	Grenada, MS Orlando, FL Gulfport, MS
Dusty Dendy	Prescribe Burn Boss III Contaminants Workshop Ground Appl. of Forestry Herbicides Standards for Survival Southern Hardwood Workshop	4/8-12 11/4-6 12/3-5 10/15 10/31	Alligator River NWR Memphis, TN MSU Noxubee NWR Yazoo NWR
Suzanne Edwards	Standards for Survival	10/15	Noxubee NWR
Bobby Gentry	LE Refresher FileMaker Pro Wildl Forensic Advanced WS	3/18-22 4/24-25 7/8-12	Quincy, FL Grenada, MS Starkville, MS
Elvis Gillespie	Standards for Survival	10/15	Noxubee NWR
James Hall	LE Refresher FileMaker Pro Administrative Workshop Contaminants Workshop Preventing Discrimination & Liability of Federal Managers	3/11-15 4/24-25 5/6-10 11/4-6 12/10-12	Quincy, FL Grenada, MS Memphis, TN Memphis, TN Atlanta, GA
Tom Jackson	Standards for Survival	10/15	Noxubee NWR
David Richardson	LE Refresher	3/18-22	Quincy, FL
Richard Smith	Intro to GPS for Field Biologists Standards for Survival Southern Hardwood Workshop	10/7-11 10/15 10/31	Leetown, WV Noxubee NWR Yazoo NWR
Jim Stockie	Prescribe Burn Boss III	4/8-12	Alligator River NWR

EMPLOYEE	DETAILS	DATE	LOCATION
Fred Ashford	Teaching Portable Pumps & Water Western Fire Detail Rx Burning	1/16-19 8/16-9/4 10/9-19	Cameron Prairie NWR California MSC NWR
Johnny Bradford	RCW Mgt. Assistance, Gulf States Timber RCW Mgt. Assistance	7/17 12/2	Tuscaloosa, AL Desoto NF
Paul Caudill	To Pick up Equipment To Pick up Supplies	1/23 2/20-21	Okefenokee NWR Little Rock, AR
Gwen Cotton	Refuge Manager Concerns Meeting Refuge Manager Concerns Meeting	9/5-6 9/30-10/4	Atlanta, GA Wheeler NWR
Dusty Dendy	Initial Attack on Wildfires (Helicopter) Western Fire Detail Taught Rx Burning Short Course	3/23-25 8/2-24 4/23-25	Homachitto NF Out "West" MSU-Noxubee NWR
Suzanne Edwards	Western Fire Detail	6/15-7/4	Roswell, NM
Bobby Gentry	Drug Task Force Taught Tracking & Sign Recognition Taught Tracking & Sign Recognition Drug Task Force	1/24-26 1/29-31 8/5-7 8/16-22	Savannah, GA Glynco, GA Glynco, GA Okefenokee, GA
Elvis Gillespie	To Transport Tree Planters	3/7-8	St. Cat. NWR
David Richardson	Waterfowl Wingbee RCW Recovery Team Meeting RCW Mgt. Assistance RCW Assistance Partners in Flight GIS Tech. Assistance RCW Mgt Assistance, Gulf States Timber RCW Mgt. Assistance	1/28-2/2 3/12-13 4/15-18 4/19 6/12 6/18 7/17 12/2	Carbondale, IL Atlanta, GA LA/Barksdale AFB SELA Refuges Jackson, MS MSC NWR Tuscaloosa, AL Desoto NF
Jim Stockie	Prescribed Burning Assistance Taught Rx Burning Short Course	2/5-9 4/23-25	Savannah Refuges MSU-Noxubee NWR
Jim Tisdale	Partners Overview Project Leaders Conference Refuge Manager Concerns Meeting Refuge Manager Concerns Meeting Refuge Manager Concerns Meeting	6/24-27 8/19-23 9/5-6 9/30-10/4 10/15-16	Amhurst, MA Savannah, GA Atlanta, GA Wheeler NWR Atlanta, GA

Another item of interest involved Mississippi Department of Environmental Quality's issuance of a permit on December 17th to Bill Cook, Starkville, MS, to construct a 7,200-head hog production facility directly adjacent to the northeast corner of the Refuge. It is our anticipation that this will become a much debated issue in the future.

4. Credits

Hall Intro; F.1,2,4,6,12; G.15; H.1-6,9,11,13,18; I.1,2
Richardson . . D.5; G.1-14,16; H.8
Cotton A; E.1,5,8; H.12; I.4-7; J; L
Smith B; C; D.2; E.6; F.3,5,9,10
Gentry H.17

Photo credits are given under each print.

PRIMITIVE WEAPON

December 2-15. (Permit required.)

TURKEY

Gobblers Only — March 22-May 1.
All turkeys must be checked in at the refuge headquarters check station the day killed and before the hunter leaves the refuge.

SMALL GAME

Weapons for small game are restricted to shotguns with shot size no larger than No. 4 or rifles no larger than .22 standard caliber (.22 magnums not allowed).

Squirrel Hunt—October 12-January 31. Dogs allowed after the last refuge deer hunt.

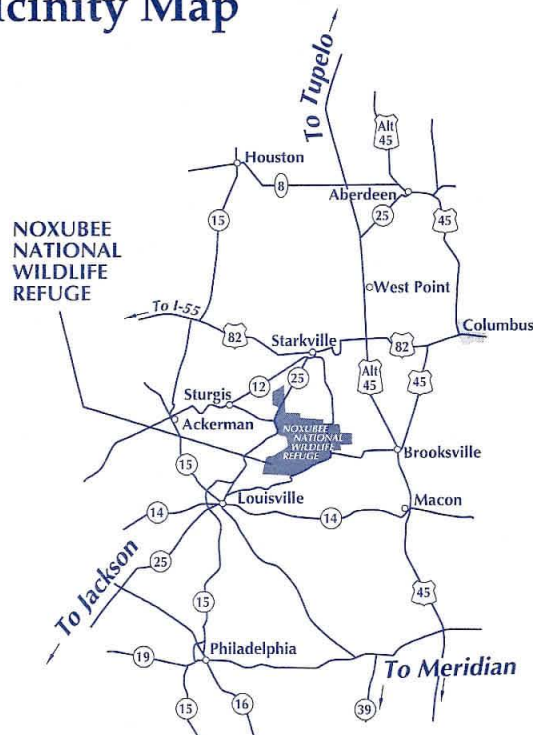
Rabbit Hunt—October 12-February 28. Dogs allowed after the last refuge deer hunt.

Quail Hunt—November 28-March 1. Dogs allowed.

Woodcock Hunt—State season.

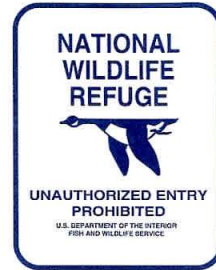
Raccoon Hunt—October 2-February 29. Bag limit, State limits. Dogs required.

Vicinity Map



Department of the Interior/U.S. Fish and Wildlife Service/RF-44540-6-July, 1995

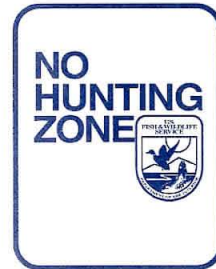
Signs protect visitors and resources



This sign delineates the refuge boundary. Entry is permitted only for authorized uses (hunting, fishing, sightseeing, etc.) in accordance with refuge regulations.



This area is closed to **all** entry. No hunting, fishing or sightseeing is permitted. No roads or trails are open to the public (See map.)



This area is closed to **all** hunting. Firearms and archery equipment are strictly prohibited. (See map.)



GTR's #1, 2 and #4 have been designated as Steel Shot Zones to protect waterfowl feeding in these areas. All hunters using shotguns in these zones may use and possess **only** steel shot shells. (See map.)

Take pride in your refuge. Report violations.



Hunting Regulations 1996-97

Noxubee National Wildlife Refuge

To:

U.S. Fish and Wildlife Service
Noxubee National Wildlife Refuge
Route 1, Box 142
Brooksville, Mississippi 39739



Noxubee National Wildlife Refuge

Route 1, Box 142
Brooksville, Mississippi 39739
601-323-5548

Noxubee National Wildlife Refuge is one of over 500 national wildlife refuges. The primary goal of a national wildlife refuge is to provide habitat for the conservation and protection of all species of wildlife. The harvest of surplus animals is one tool used to manage wildlife populations at a level compatible with the environment, provide wholesome recreational opportunities and permit the use of a valuable renewable resource.

The regulations listed below supplement the general regulations which govern hunting on wildlife refuge areas as set forth in Title 50, Code of Federal Regulations. Hunting will be in accordance with applicable State regulations.

General Hunt Regulations

Public hunting on the Noxubee National Wildlife Refuge is permitted on about 42,000 acres of the refuge. Certain areas (as shown on the reverse map) are closed to hunting. Such areas are conspicuously marked with "No Hunting" or "Closed" signs.

FORFEITURE OF HUNTING PRIVILEGES

Any person violating any refuge regulation may be required by the Refuge Manager to forfeit the privilege of hunting on the refuge for the remainder of the hunting season and may be ineligible to apply for permits the following year.

GTR's 1, 2 and 4 are steel shot zones. Shotgun hunters must use and possess only steel shot for small game hunts. Buckshot is allowed for deer hunting.

Camping is not permitted on the refuge.

During all deer gun hunts, all hunters and scouters (including small game hunters) must wear a minimum of 500 square inches of fluorescent orange-colored material above the waistline.

The use or possession of alcohol while hunting is prohibited.

No person may capture, kill or destroy any game bird, game mammal or game fish and remove the head, claws, teeth, hide, antlers or any or all of such parts from the body with the intent to abandon the body.

The use of artificial light, including headlights, to spot or locate any animal, except authorized nighttime hunting of raccoons and opossums, is strictly prohibited.

All firearms transported on roads within the refuge boundary must be unloaded and either dismantled or cased.

Target shooting on the refuge is not permitted.

Motor vehicles are allowed on all roads shown on the map on the reverse side unless the road is closed by sign or gate. Vehicles must be parked adjacent to these roadways.

Beaver and coyote may be taken during any refuge hunt, and feral hogs may be taken by any refuge deer hunter with weapons legal for that hunt.

Permits

DEER HUNT PERMIT

A \$12.50 permit is required for all deer hunting (except during Youth Deer Hunt — see below) on Noxubee Refuge. These permits will be issued beginning September 1, 1996. The permit will allow a hunter to take one legal buck and one antlerless deer during the 1996-97 hunting season. State law defines a legal buck as having "...antlers of four (4) points or greater..."

Permits may be purchased by mail or in person at the refuge office. Applications must include the following:

1. Hunter's full name and residence address (including zip code)
2. Valid 1997 Mississippi hunting license number
3. \$12.50 permit fee (certified check or money order, made out to U.S. Fish & Wildlife Service, are acceptable methods of payment when applying by mail. Cash will be accepted when applying in person at the refuge office. **No personal checks will be accepted.**)

Incomplete or illegible applications will be rejected. Only one application per hunter.

YOUTH HUNT PERMIT (NO FEE)

Applications accepted October 1–November 22.

Youth (ages 10–15) /adult (age 21 or over) combinations must apply. One adult required for each youth. Both adult and youth must be together at all times on the refuge (in sight). Permit application should include name, address and age of the youth and the name of the adult. No limit on number of permits to be issued.

Specific Refuge Regulations

DUCKS

A youth waterfowl workshop and hunt will be held in conjunction with Mississippi State University. Sixty youth hunters, ages 10-17, will be allowed this unique opportunity. Once selected, participants will attend a classroom session on Saturday, November 2, 1996. After completion of the classroom session, special hunts will be held the first two weekends of waterfowl season. Contact Extension Wildlife Specialist, Dept. of Wildlife and Fisheries, P.O. Box 9690, Mississippi State, MS 39762, after September 1, 1996, for further information about this hunt.

DEER

All deer must be tagged (with the tags punched) before they are moved, and checked at the refuge check station before leaving the refuge. Permits must be carried at all times while hunting. Portable stands only may be placed on the refuge from September 1–January 15. It is unlawful to drive a nail, spike or other metal object into a tree or to hunt from any tree in which such an object has been driven.

Special deer hunting blinds for persons who require the use of a wheelchair will be available by permit. Contact refuge office for information.

ARCHERY

October 1–November 22. (Permit required.) The possession or use of any drugged arrow for bow hunting is prohibited.

YOUTH HUNT

November 23–24. (Permit required.) Youth (ages 10–15) and adults (age 21 or older) make up a hunting party. Only youths may handle, carry, transport or discharge firearms.

GUN

November 25–December 1, and December 26–January 1. (Permit required.)



Tear Here

Deer Hunting Application

(See Regulations—Deer Hunt Permit)

I certify that I have read and understand the Hunting Regulations attached.

Last name

Middle Initial

1997 All Game Hunting License # or

Mailing address

1997 Sportsman License # or

City

State

Zip Code

Attach \$12.50 fee in form of money order or bank certified or cashiers check made out to "The U.S. Fish and Wildlife Service." No personal checks.

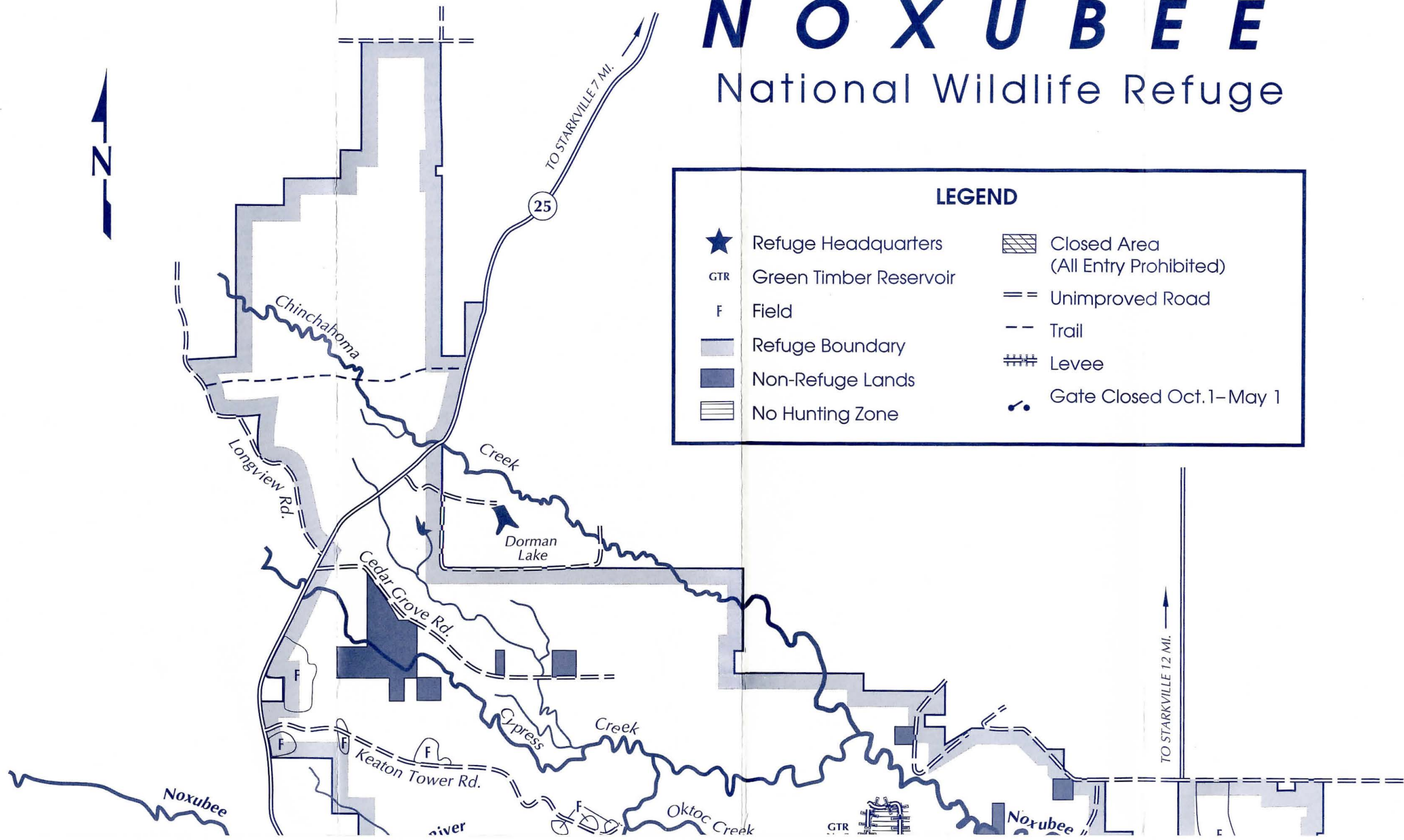
Mail to:
Noxubee National Wildlife Refuge / Route 1, Box 142 / Brooksville, MS 39739

Lifetime License #

If applicant is under 16 or over 65,
please give age instead of License #.

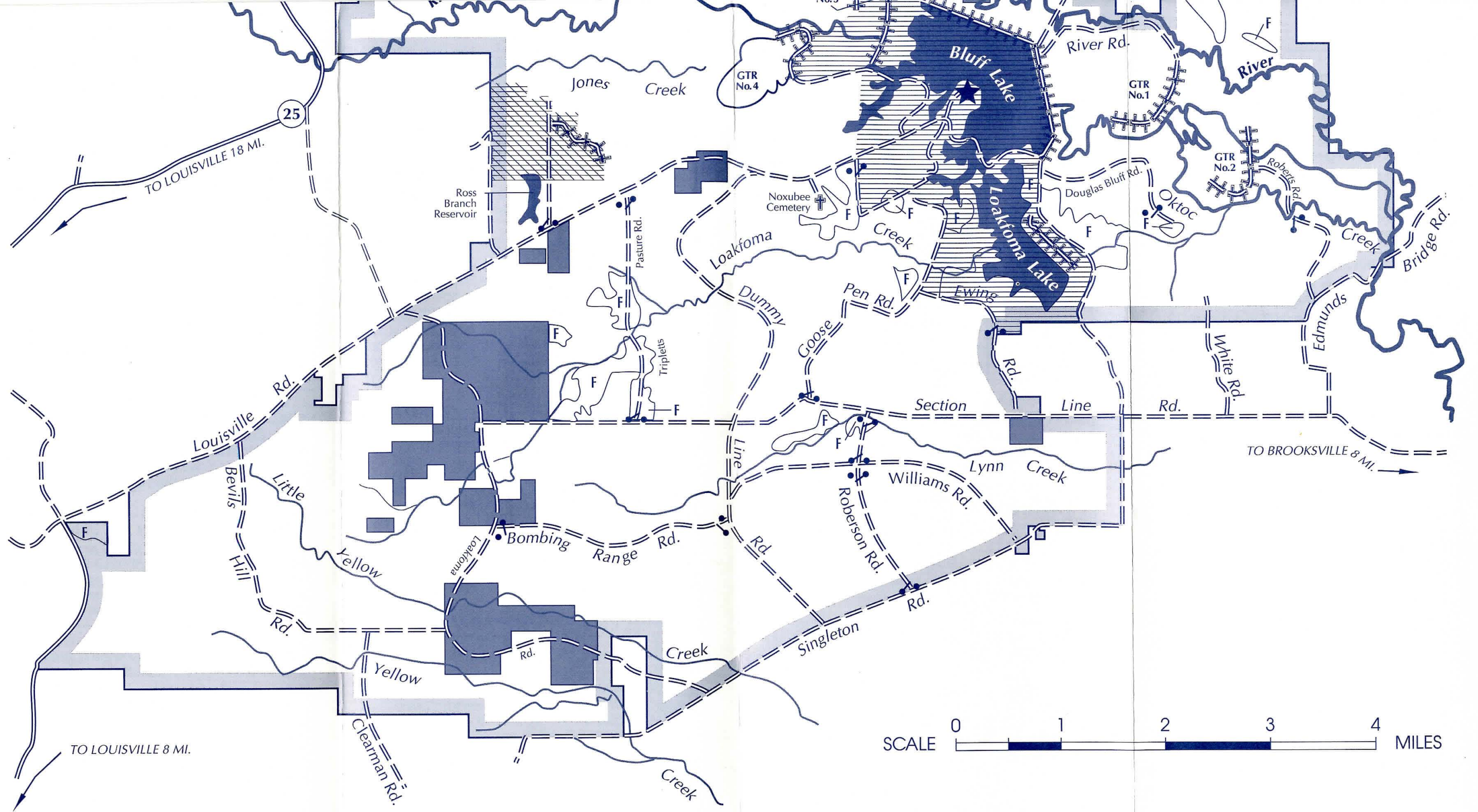
NOXUBEE

National Wildlife Refuge



LEGEND

- ★ Refuge Headquarters
- GTR Green Timber Reservoir
- F Field
- Refuge Boundary
- Non-Refuge Lands
- ▨ No Hunting Zone
- ▩ Closed Area (All Entry Prohibited)
- == Unimproved Road
- - Trail
- ### Levee
- Gate Closed Oct. 1–May 1

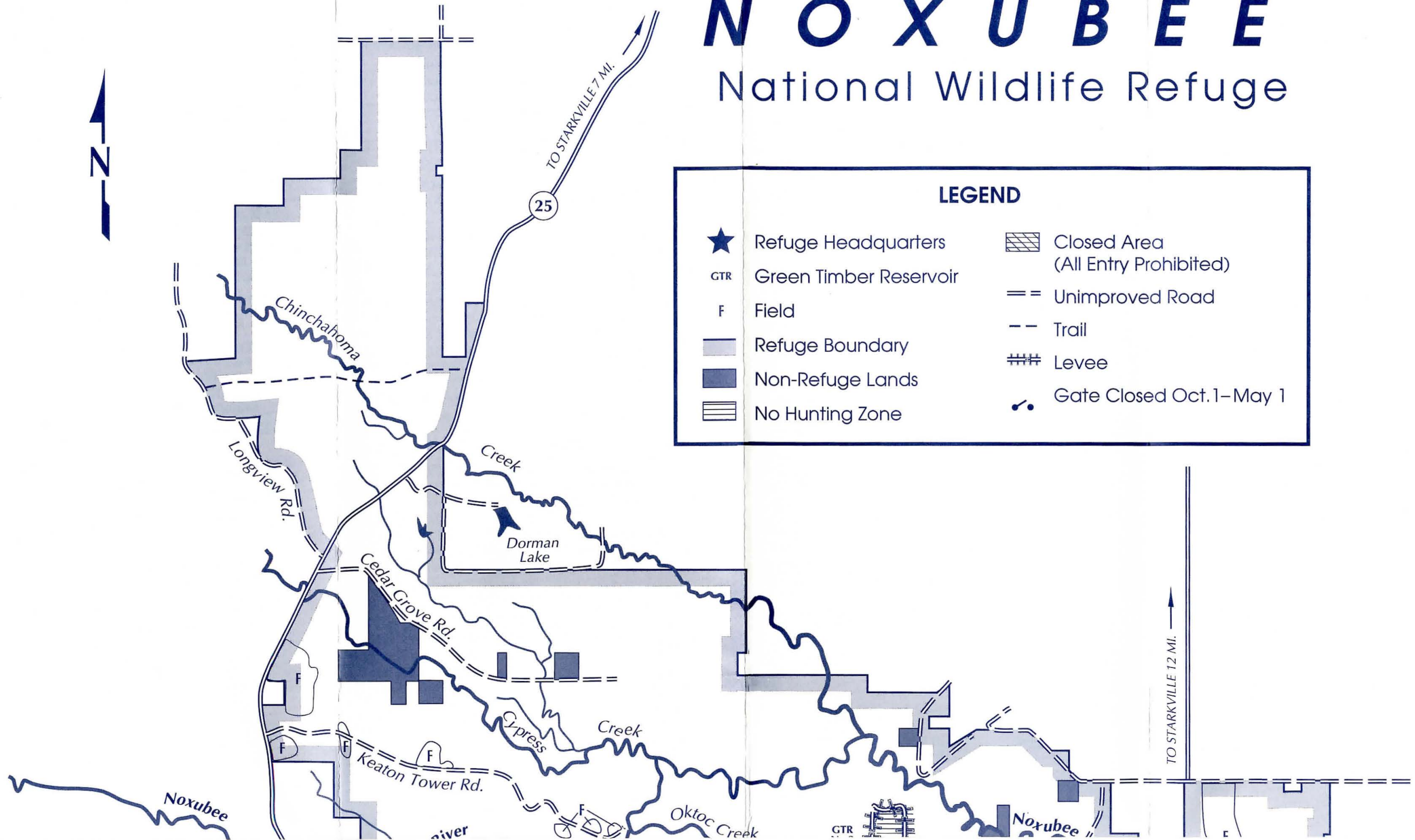


NOXUBEE

National Wildlife Refuge

LEGEND

★	Refuge Headquarters	▨	Closed Area (All Entry Prohibited)
GTR	Green Timber Reservoir	==	Unimproved Road
F	Field	- -	Trail
▭	Refuge Boundary	###	Levee
■	Non-Refuge Lands	⊙	Gate Closed Oct. 1–May 1
▨	No Hunting Zone		





BIRDS

Noxubee National Wildlife Refuge Mississippi

General Information

Loons - Grebes - Pelicans - Cormorants - Anhingas
Bitterns - Egrets - Herons - Ibises - Storks - Ducks
Geese - Swan

Vultures - Ospreys - Kites - Eagles - Hawks - Turkey
Quail - Rails - Coots - Gallinules - Plovers - Stilts - Avocet
Shorebirds

Gulls - Terns - Doves - Cuckoos - Owls - Goatsuckers
Swifts - Hummingbirds - Kingfishers - Woodpeckers
Flycatchers - Martins - Swallows

Jays - Crows - Chickadees - Titmice - Nuthatches - Creepers
Wrens - Kinglets - Gnatcatchers - Bluebirds - Thrushes
Mimics - Pipits - Waxwings - Shrike - Starling

Vireos - Warblers

Tanagers - Cardinals - Grosbeaks - Buntings - Sparrows
Blackbirds - Meadowlark - Orioles

BIRDS OF THE NOXUBEE NATIONAL WILDLIFE REFUGE

Noxubee National Wildlife Refuge, located in northeast Mississippi, contains 46,278 acres of excellent wildlife habitat. Essentially the refuge is a woodland interspersed with fields, lakes and streams. Pines are predominant along the high ridges, bottomland hardwoods in the river and creek bottoms, and cypress-gum in the lower, seasonally flooded areas.

The wildlife picture changes with the seasons. The fall and winter months feature waterfowl by the thousands, and bald eagles can also be seen during this period. Spring sees these species replaced by swallows, wood ibis, warblers, egrets and herons. Some species, such as the endangered red-cockaded woodpecker and eastern wild turkey, are year-round residents. The following birdlist contains 254 species. The list, using common names, is in accordance with the Sixth Edition of the A.O.U. Checklist (1983).

How to Use Your Checklist

Seasonal Appearance

Sp - Spring - March - May

S - Summer - June - August

F - Fall - September - November

W - Winter - December - February

Seasonal Abundance

a - abundant (a common species which is very numerous)

c - common (certain to be seen in suitable habitat)

u - uncommon (present, but not certain to be seen)

o - occasional (seen only a few times during a season)

r - rare (seen at intervals of 2 to 5 years)

x - accidental (out of normal species range)

General Information

Loons - Grebes - Pelicans - Cormorants - Anhingas
Bitterns - Egrets - Herons - Ibises - Storks - Ducks
Geese - Swan

Vultures - Ospreys - Kites - Eagles - Hawks - Turkey
Quail - Rails - Coots - Gallinules - Plovers - Stilts - Avocet
Shorebirds

Gulls - Terns - Doves - Cuckoos - Owls - Goatsuckers
Swifts - Hummingbirds - Kingfishers - Woodpeckers
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Jays - Crows - Chickadees - Titmice - Nuthatches - Creepers
Wrens - Kinglets - Gnatcatchers - Bluebirds - Thrushes
Mimics - Pipits - Waxwings - Shrike - Starling

Vireos - Warblers

Tanagers - Cardinals - Grosbeaks - Buntings - Sparrows
Blackbirds - Meadowlark - Orioles

LOONS AND GREBES

		Sp	S	F	W
—	Common Loon	r		r	r
—	Pied-billed Grebe	c	u	c	c
—	Horned Grebe			r	r
—	Eared Grebe				r

PELICANS AND CORMORANTS

—	American White Pelican			r	r
—	Double-crested Cormorant	c	u	c	c

ANHINGA

—	Anhinga	u	u	u	u
---	-------------------	---	---	---	---

BITTERNs, EGRETS AND HERONS

—	American Bittern	u		o	u
—	Least Bittern	r	u	r	
—	Great Blue Heron	c	c	c	c
—	Great Egret	c	c	c	u
—	Snowy Egret	o	o	o	o
—	Little Blue Heron		u	u	
—	Tricolored Heron		x		
—	Cattle Egret	u	u	u	o
—	Green-backed Heron		c	c	
—	Black-crowned Night-Heron			o	
—	Yellow-crowned Night Heron	r	u	u	

IBISES and STORKS

—	White Ibis	u	u	u	
—	Glossy Ibis	r			
—	Roseate Spoonbill		x		
—	Wood Stork		o	o	



Wood Duck

**WATERFOWL, DUCKS,
GEESE and SWANS**

— Fulvous Whistling-Duck.				r
— Tundra Swan.			r	r
— Greater White-fronted Goose.			r	
— Snow Goose	o		o	o
— Canada Goose	a	a	a	a
— Wood Duck	c	c	c	c
— Green-winged Teal.	c		c	c
— American Black Duck	o		o	o
— Mallard	c	r	a	a
— Northern Pintail	o		u	u
— Blue-winged Teal.	c	u	c	r
— Northern Shoveler.	c		e	c
— Gadwall.	o		c	c
— American Wigeon	c		c	c
— Canvasback			u	u
— Redhead			r	r
— Ring-necked Duck.	o		c	a
— Lesser Scaup	u		u	u
— Oldsquaw				r
— Surf Scoter			x	
— Common Goldeneye				r
— Bufflehead			u	u
— Hooded Merganser.	u	o	c	c
— Red-breasted Merganser.	r		r	r
— Ruddy Duck			c	c

Loons - Grebes - Pelicans - Cormorants - Anhingas
Bitterns - Egrets - Herons - Ibises - Storks - Ducks
Geese - Swan

Vultures - Ospreys - Kites - Eagles - Hawks - Turkey
Quail - Rails - Coots - Gallinules - Plovers - Stilts - Avocet
Shorebirds

Gulls - Terns - Doves - Cuckoos - Owls - Goatsuckers
Swifts - Hummingbirds - Kingfishers - Woodpeckers
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—	—	—	—	—	Northern Bobwhite	a	a	a	a
—	—	—	—	—	Wild Turkey	u	u	u	u
GALLINACEOUS BIRDS									
—	—	—	—	—	American Kestrel	u	u	u	u
—	—	—	—	—	Golden Eagle	r			
—	—	—	—	—	Red-tailed Hawk	c	c	c	c
—	—	—	—	—	Broad-winged Hawk	u	r	u	u
—	—	—	—	—	Red-shouldered Hawk	c	c	c	c
—	—	—	—	—	Cooper's Hawk	u	u	u	u
—	—	—	—	—	Sharp-shinned Hawk	u	u	u	u
—	—	—	—	—	Northern Harrier	u	u	u	u
—	—	—	—	—	Bald Eagle	u	r	u	u
—	—	—	—	—	Osprey	o	r	o	o
OSPREYS, KITES, EAGLES and HAWKS									
—	—	—	—	—	Turkey Vulture	c	u	c	c
—	—	—	—	—	Black Vulture	a	c	c	c
Sp	S	F	W						

VULTURES

RAILS, COOTS, and
GALLINULES

— King Rail	u	u		
— Virginia Rail		r		
— Sora		r		
— Common Moorhen				r
— American Coot	c	r	a	a

PLOVERS

— Black-bellied Plover			r	
— Semipalmated Plover	r	r	r	
— Piping Plover		r	r	r
— Killdeer	c	c	c	c

STILTS and AVOCETS

— American Avocet			r	
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SHOREBIRDS

— Greater Yellowlegs	u	u	u	u
— Lesser Yellowlegs	u	u	u	u
— Solitary Sandpiper	o		c	
— Spotted Sandpiper	o	r	o	o
— Sanderling			r	
— Semipalmated Sandpiper	o	o	u	
— Western Sandpiper		r		
— Least Sandpiper	u	u	u	
— White-rumped Sandpiper	r			
— Pectoral Sandpiper	u	u	c	
— Dunlin				r
— Stilt Sandpiper	r		r	
— Buff-breasted Sandpiper		r		
— Short-billed Dowitcher			r	
— Long-billed Dowitcher				r
— Common Snipe	u	r	u	u
— American Woodcock	u	r	u	u

Vultures - Ospreys - Kites - Eagles - Hawks - Turkey
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U.S. Fish and Wildlife Service
DEPARTMENT OF THE INTERIOR

GULLS and TERNS

	Sp	S	F	W
— Bonaparte's Gull	r			r
— Ring-billed Gull	u			u
— Herring Gull				o
— Caspian Tern		r	r	
— Common Tern			o	
— Black Tern		o	o	

PIGEONS and DOVES

— Mourning Dove	c	c	c	c
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CUCKOOS

— Black-billed Cuckoo	r		r	
— Yellow-billed Cuckoo	u	c	c	

OWLS

— Common Barn-Owl	r	r	r	r
— Eastern Screech-Owl	u	u	u	u
— Great Horned Owl	u	u	u	u
— Barred Owl	c	c	c	c
— Short-eared Owl	r		r	r



Barred Owl

GOATSUCKERS

— Common Nighthawk	o	c	o	r
— Chuck-will's widow	u	c		
— Whip-poor-will	u		u	

SWIFTS

— Chimney Swift	c	c	c	
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HUMMINGBIRDS

— Ruby-throated Hummingbird	c	c	c	
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KINGFISHERS

— Belted Kingfisher

WOODPECKERS

—	Red-headed Woodpecker	c	c	c	c
—	Red-bellied Woodpecker	c	c	c	c
—	Yellow-bellied Sapsucker.	u		u	u
—	Downy Woodpecker	c	c	c	c
—	Hairy Woodpecker.	u	u	u	u
—	Red-cockaded Woodpecker . . .	u	u	u	u
—	Northern Flicker	c	c	c	c
—	Pileated Woodpecker.	c	c	c	c



Red-headed
Woodpecker

FLYCATCHERS

—	Olive-sided Flycatcher.			r	
—	Eastern Wood-Pewee	c	c	c	
—	Acadian Flycatcher	c	c	o	
—	Least Flycatcher	u	r	u	
—	Eastern Phoebe	c	u	c	u
—	Great Crested Flycatcher.	c	c		
—	Eastern Kingbird	c	c	u	

MARTINS and SWALLOWS

—	Purple Martin	c	c	u	
—	Tree Swallow.	c		c	
—	Northern Rough-Winged Swallow.	u	r	u	
—	Bank Swallow	c	c	c	
—	Cliff Swallow.	r			
—	Barn Swallow	c	c	c	

Gulls - Terns - Doves - Cuckoos - Owls - Goatsuckers
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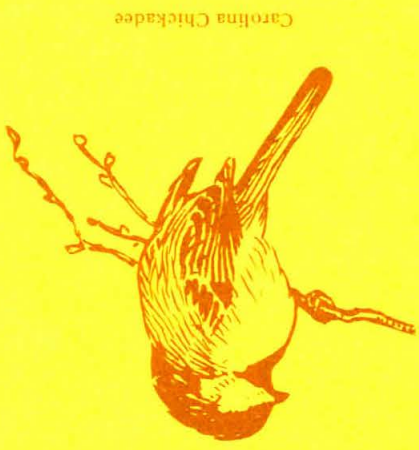
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—	Brown Creeper	n	n	
CREEPERS				
—	Brown-headed Nuthatch	c	c	c
—	White-breasted Nuthatch	n	n	n
—	Red-breasted Nuthatch	r	r	
NUTHATCHES				
—	Tufted Titmouse	c	c	c
—	Carolina Chickadee	c	c	c
CHICKADEES and TITMICE				
—	Fish Crow	r	r	
—	American Crow	c	c	c
—	Blue Jay	c	c	c
Sp		S	F	W

BLUE JAYS and CROWS



Carolina Chickadee

WRENS

—	Carolina Wren	a	a	a	a
—	Bewick's Wren.	r	r	r	r
—	House Wren.				r
—	Winter Wren			u	u
—	Sedge Wren		r	r	r
—	Marsh Wren				u

KINGLETS and GNATCATCHERS

—	Golden-crowned Kinglet	u		u	c
—	Ruby-crowned Kinglet	u		u	c
—	Blue-gray Gnatcatcher.	c	c	c	r

BLUEBIRDS and THRUSHES

—	Eastern Bluebird	c	c	c	c
—	Veery	o		o	
—	Gray-cheeked Thrush	u		u	
—	Swainson's Thrush.	u		u	
—	Hermit Thrush.			u	u
—	Wood Thrush.	c	c	o	
—	American Robin	c	u	c	c

MIMICS

—	Gray Catbird	u	u	u	r
—	Northern Mockingbird.	c	c	c	c
—	Brown Thrasher.	c	c	c	c

PIPITS

—	Water Pipit			u	u
---	-----------------------	--	--	---	---

WAXWINGS, SHRIKES and STARLINGS

—	Cedar Waxwing	u	r	u	c
—	Loggerhead Shrike.	c	c	c	c
—	European Starling	c	c	c	c



Eastern Bluebird

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Red-eyed Vireo



Sp				White-eyed Vireo.....	—
S	a	c	r	Solitary Vireo.....	—
F			r	Yellow-throated Vireo.....	—
W			n	Warbling Vireo.....	—
			r	Philadelphia Vireo.....	—
			c	Red-eyed Vireo.....	—
<hr/>					
WOOD WARBLERS					
			n	Blue-winged Warbler.....	—
			n	Golden-winged Warbler.....	—
			n	Tennessee Warbler.....	—
			n	Orange-crowned Warbler.....	—
			n	Nashville Warbler.....	—
			r	Northern Parula.....	—
			n	Yellow Warbler.....	—
			n	Chestnut-sided Warbler.....	—
			n	Magnolia Warbler.....	—
			n	Black-throated Blue Warbler.....	—
a	c		n	Yellow-rumped Warbler.....	—
			n	Black-throated Green Warbler.....	—
			n	Blackburnian Warbler.....	—
			n	Yellow-throated Warbler.....	—
			n	Pine Warbler.....	—
			c	Prairie Warbler.....	—
			r	Palm Warbler.....	—
			n	Bay-breasted Warbler.....	—
			n	Blackpoll Warbler.....	—
			n	Cerulean Warbler.....	—
			n	Black-and-White Warbler.....	—

VIREOS

DEPARTMENT OF THE INTERIOR
U.S. Fish and Wildlife Service

— American Redstart	u	u	u	
— Prothonotary Warbler	c	c	u	
— Worm-eating Warbler	r			
— Swainson's Warbler	r	r	r	
— Ovenbird	u		u	
— Northern Waterthrush	u		u	
— Louisiana Waterthrush	u	u	u	
— Kentucky Warbler	u	u	u	
— Connecticut Warbler	r			
— Mourning Warbler	r		r	
— Common Yellowthroat	c	c	u	r
— Hooded Warbler	c	u	u	
— Wilson's Warbler	o		o	
— Canada Warbler	o		o	
— Yellow-breasted Chat	c	c	u	



Black-and-white Warbler

Vireos - Warblers

TANAGERS

		Sp	S	F	W
—	Summer Tanager	c	c	u	
—	Scarlet Tanager	u		u	

CARDINALS, GROSBEAKS and BUNTING

—	Northern Cardinal	a	a	a	a
—	Rose-breasted Grosbeak	u		u	
—	Blue Grosbeak	u	u	u	
—	Indigo Bunting	c	c	c	
—	Dickeissel	u	u	u	

SPARROWS

—	Rufous-sided Towhee	c	u	c	c
—	Bachman's Sparrow	r			
—	American Tree Sparrow				r
—	Chipping Sparrow	e	c	c	c
—	Field Sparrow	c	c	c	c
—	Vesper Sparrow	u		u	r
—	Lark Sparrow		r		
—	Savannah Sparrow	u		u	c
—	Grasshopper Sparrow	u	u	u	u
—	LeConte's Sparrow				r
—	Sharp-tailed Sparrow				r
—	Fox Sparrow	u		u	u
—	Song Sparrow	c		u	c
—	Lincoln's Sparrow	r		r	r
—	Swamp Sparrow	u		u	c
—	White-throated Sparrow	c		c	a
—	White-crowned Sparrow				r
—	Dark-eyed Junco	u		c	c

BLACKBIRDS, MEADOWLARKS and ORIOLES

—	Bobolink	u		u	
—	Red-winged Blackbird	c	a	c	c
—	Eastern Meadowlark	c	c	c	c
—	Rusty Blackbird	u			u
—	Brewer's Blackbird				u
—	Common Grackle	c	u	c	c
—	Brown-headed Cowbird	c	c	c	c
—	Orchard Oriole	u	c	u	
—	Northern Oriole	u		u	

FINCHES

—	Purple Finch	u		u	u
—	House Finch				r
—	Red Crossbill	x	x	x	x
—	Pine Siskin			r	o
—	American Goldfinch	c	r	c	c
—	Evening Grosbeak				o

WEAVER FINCHES

—	House Sparrow	u	u	u	u
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To report unusual sightings or for further information, contact the Refuge Manager, Route 1, Box 142, Brooksville, Mississippi 39739.

ACKNOWLEDGEMENTS

This list was developed and formulated by the Oktibbeha Audubon Society. Their hard work and many trips to the refuge are gratefully appreciated.

NOTES/COMMENTS

DEPARTMENT OF THE INTERIOR

U.S. Fish and Wildlife Service

RF-44540-2 - August 1985

Wildlife You May See

WINTER (December - February)

- December** - Peak hunting month
Deer in rut
Late acorns falling
Horned owl begin nesting
Bald eagle and osprey present on lakes
- January** - Leopard frogs calling on nights above 40 degrees
Bald eagle and osprey present on lakes
Prescribe burn for wildlife
- February** - Red maple blooms
Chorus frogs calling on nights above 40 degrees
Woodcock migration
Elms bloom
Black vultures nesting
Red-shouldered hawks nesting

SPRING (March - May)

- March** - Wild turkey gobbling
Eagles migrate off refuge
Bass spawn
Redbud, crabapple, wild plum and dog-wood bloom
Giant Canada geese and wood ducks nesting
- April** - Wild azalea, red buckeye, pawpaw bloom
Geese goslings and wood duck ducklings visible
Bull frogs croaking
Snakes and turtles become active
Doves begin nesting
Shad running in river
Turkeys nesting
Red-cockaded woodpecker nesting
- May** - Bluegill spawning
Catfish spawning
Heron rookeries active
Bluebird and prothonotary warbler nesting
Alligators active
Chuck-will's widow calling

SUMMER (June - August)

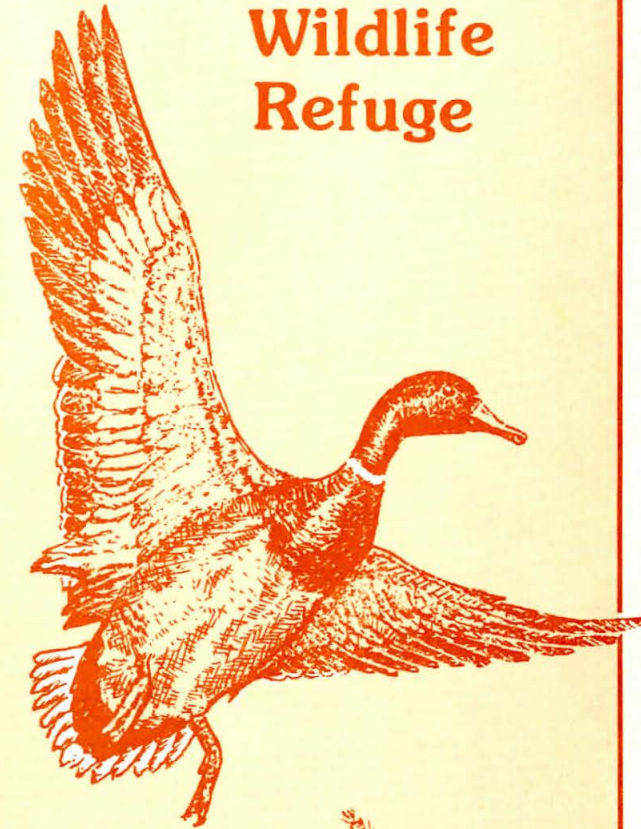
- June** - Queen Ann's lace blooms
Maypops bloom
Turkey with young visible
Gray squirrels with young
White-tailed deer dropping fawns
Blackberries ripe
Bobwhite quail calling and nesting
- July** - Purple martins leave nest
Purple cone flower blooms
Black-eyed Susans bloom
White-tailed deer with young visible
Cormorants on Bluff Lake
- August** - Early migrants - teal, shorebirds
Ironweed blooms
Wood storks present on lakes

FALL (September - November)

- September** - Muscadines and fall plums ripen
Shorebirds migrating
Broad-winged hawks migrating
Blue-winged teal pass through
- October** - Hickory nuts falling
Peak of fall bird migration
Acorns falling
Wild persimmons ripening
Fall colors showing
Begin flooding waterfowl impoundments
- November** - End of season for flowering plants
Peak of fall colors
Expect killing frost
Woodcock flights arrive from north
Wintering bald eagles and osprey appear on lakes
Waterfowl numbers build rapidly

NOXUBEE

National Wildlife Refuge



Mississippi

UNITED STATES
DEPARTMENT OF THE INTERIOR
Fish and Wildlife Service
Noxubee National Wildlife Refuge
Route 1, Box 142
Brooksville, Mississippi 39739

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE: \$300



POSTAGE AND FEES PAID
UNITED STATES DEPARTMENT
OF THE INTERIOR
INT 423

NOXUBEE

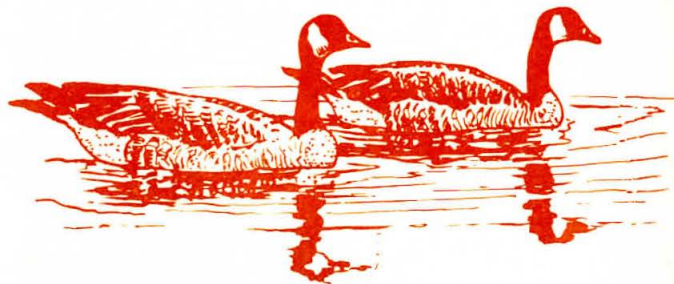
National Wildlife Refuge

Eroded Lands Reclaimed

Noxubee National Wildlife Refuge, located in east-central Mississippi, is an excellent example of how eroded and depleted soils and forest lands can be converted and managed to become productive and healthy. When first acquired in 1940, the 47,000-acre refuge was suffering from massive erosion. Tens of thousands of pine trees were planted to stop the erosion and check dams were built to collect and hold the soil in the many gullies. Forest lands were protected from wildfires and good forestry practices were adopted. As the years passed, sound land and wildlife management produced an ideal home for many species of wildlife.

Main Ingredients Present

Noxubee Refuge possesses many of the main ingredients necessary for a wildlife refuge. There are two major lakes on the refuge. Both the 1,200-acre Bluff Lake and the 600-acre Loakfoma Lake are shallow water paradises that provide ideal habitat for fish and other wildlife. Another ingredient, pine woodlands, are present along the high ridges running through the refuge while large forested wetlands comprise much of the bottomlands.



Bottomlands Crucial to Wildlife

Areas such as Noxubee are crucial to wildlife. The bottomlands serve as breeding grounds for wood ducks, wintering sites for migratory waterfowl, habitat for mammals, and spawning grounds for a variety of game fish. In an effort to enhance Noxubee's appeal to wildlife, a system of low dams has been constructed to permit winter flooding of certain bottomland wooded areas. This practice of periodically flooding woodlands is generally referred to as a green-tree reservoir management.



Managing Our Forests

Good forest management is essential to wildlife management. Noxubee's forests are manipulated to provide many kinds of habitat that wildlife needs throughout the year. Planting, thinning, selected harvest and the controlled use of fire are but a few techniques used to improve the homes of wildlife.

Seasonal Changes in Wildlife

The wildlife picture changes with the seasons. From November to March, up to 25,000 waterfowl, primarily mallards, wood ducks, ring-necked ducks, gadwalls, American wigeons and green and blue-winged teal gather on the refuge.

As many as 1,000 migrating Canada geese join Noxubee's waterfowl along with the year-round flock of 450 giant Canada geese. As the majority of waterfowl leave Noxubee for their northern breeding grounds in early spring, songbirds, swallows, egrets and herons begin arriving. Spring and summer are months for breeding and raising young wildlife. Noxubee Refuge provides a home for many animals including wild turkey, deer, raccoon, beaver, squirrel and over 254 species of birds.



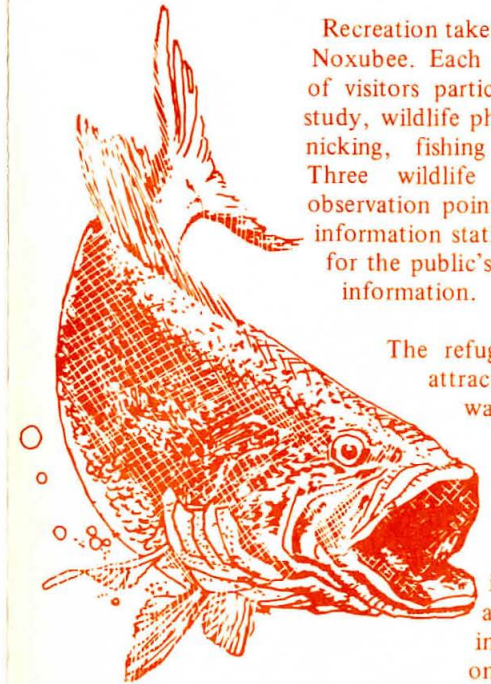
A Place for the Endangered

Three endangered species are normally found on the refuge - southern bald eagle, American alligator and red-cockaded woodpecker. A fourth, the wood stork, was seen in 1985 for the first time since 1978.



Recreation at Noxubee

Recreation takes many forms at Noxubee. Each year thousands of visitors participate in nature study, wildlife photography, picnicking, fishing and hunting. Three wildlife trails, several observation points, and a visitor information station are available for the public's enjoyment and information.



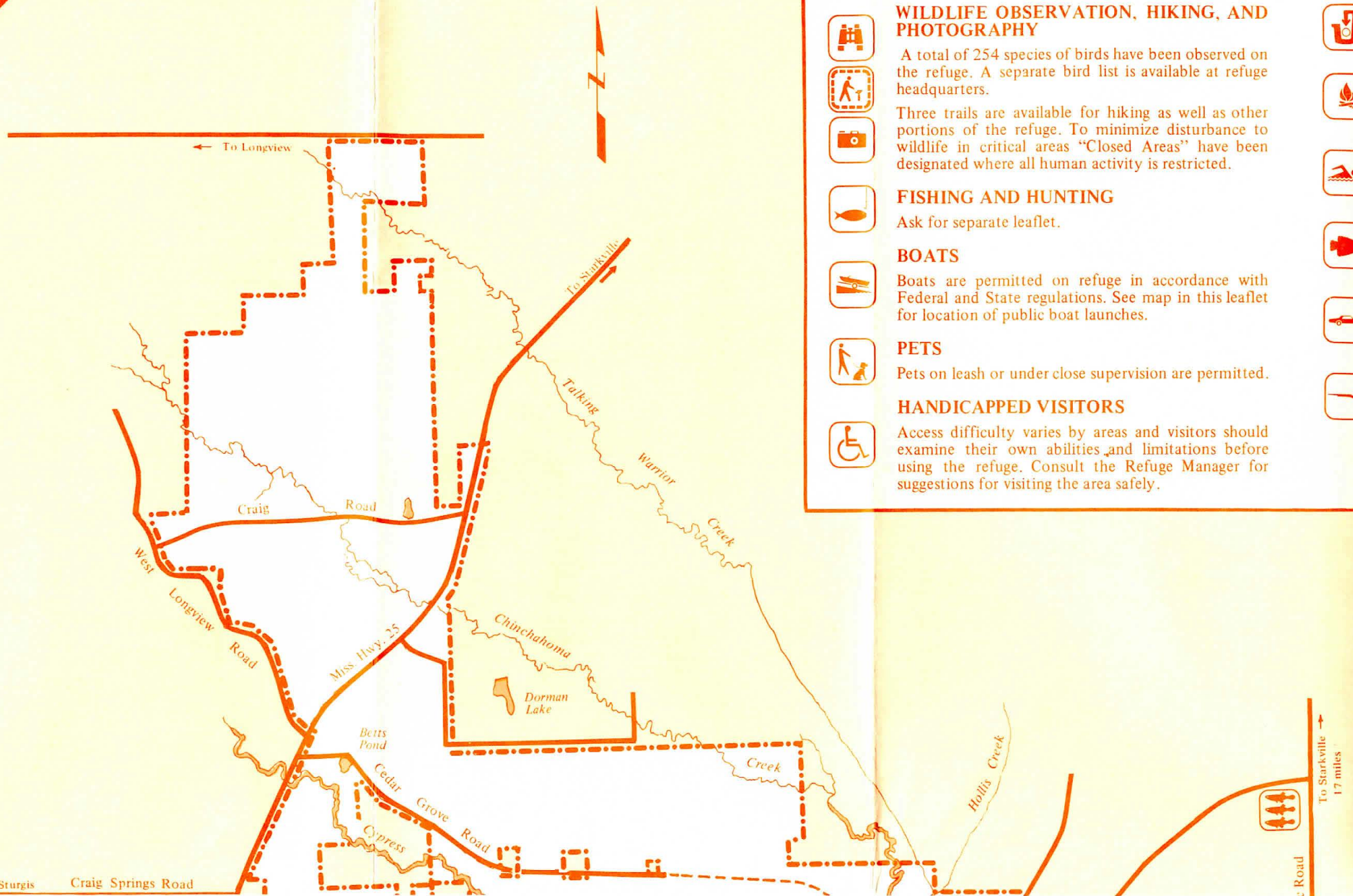
The refuge is especially attractive for bird watching, and a sanctuary of 3,225 acres has been established on which no hunting is allowed at any time. Hunting is permitted on selected areas each year for

squirrels, rabbits, raccoons, deer, bobwhites, wild turkeys and ducks. The harvest of surplus animals is one tool used to manage wildlife populations at a level compatible with the environment, provide wholesome recreational opportunities and permit the use of a valuable renewable resource. Further information on hunting is available from the refuge manager.

Fishing is permitted in refuge waters between March 1 and October 31 each year. Closure is necessary on all waters except Noxubee River in late fall and winter to prevent disturbance to wintering waterfowl. Noxubee River is open all year to sport fishing. Large-mouth bass, bream and crappie are the principal game fish. Catfish are common and frequently caught; some weighing up to 60 pounds.

Further information may be obtained by writing the Refuge Manager, Route 1, Box 142, Brooksville, Mississippi 39739, or call 601/323-5548.

**TAKE PRIDE
IN YOUR REFUGE!
PROTECT AND ENJOY
IT'S WILDLIFE**



ENJOY YOUR VISIT

Public use is limited to areas which will conserve wildlife for generations to come.



WILDLIFE OBSERVATION, HIKING, AND PHOTOGRAPHY

A total of 254 species of birds have been observed on the refuge. A separate bird list is available at refuge headquarters.



Three trails are available for hiking as well as other portions of the refuge. To minimize disturbance to wildlife in critical areas "Closed Areas" have been designated where all human activity is restricted.



FISHING AND HUNTING

Ask for separate leaflet.



BOATS

Boats are permitted on refuge in accordance with Federal and State regulations. See map in this leaflet for location of public boat launches.



PETS

Pets on leash or under close supervision are permitted.



HANDICAPPED VISITORS

Access difficulty varies by areas and visitors should examine their own abilities and limitations before using the refuge. Consult the Refuge Manager for suggestions for visiting the area safely.



LITTERING

Please take your litter with you.



CAMP FIRES

Camp fires are limited to the campground and designated areas within the picnic grounds provided that the fires are attended at all times.



SWIMMING

Swimming is prohibited.



COLLECTION

Collection of any items of antiquity, including Indian artifacts, is prohibited.



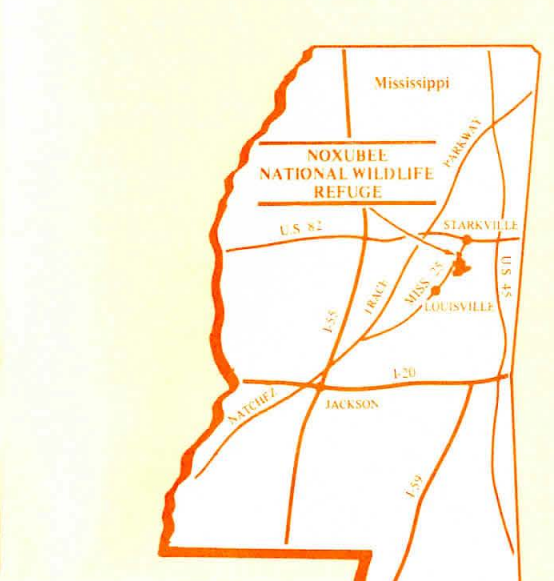
VEHICLE ACCESS

Use of any motorized vehicle is permitted only on designated roads and parking areas.



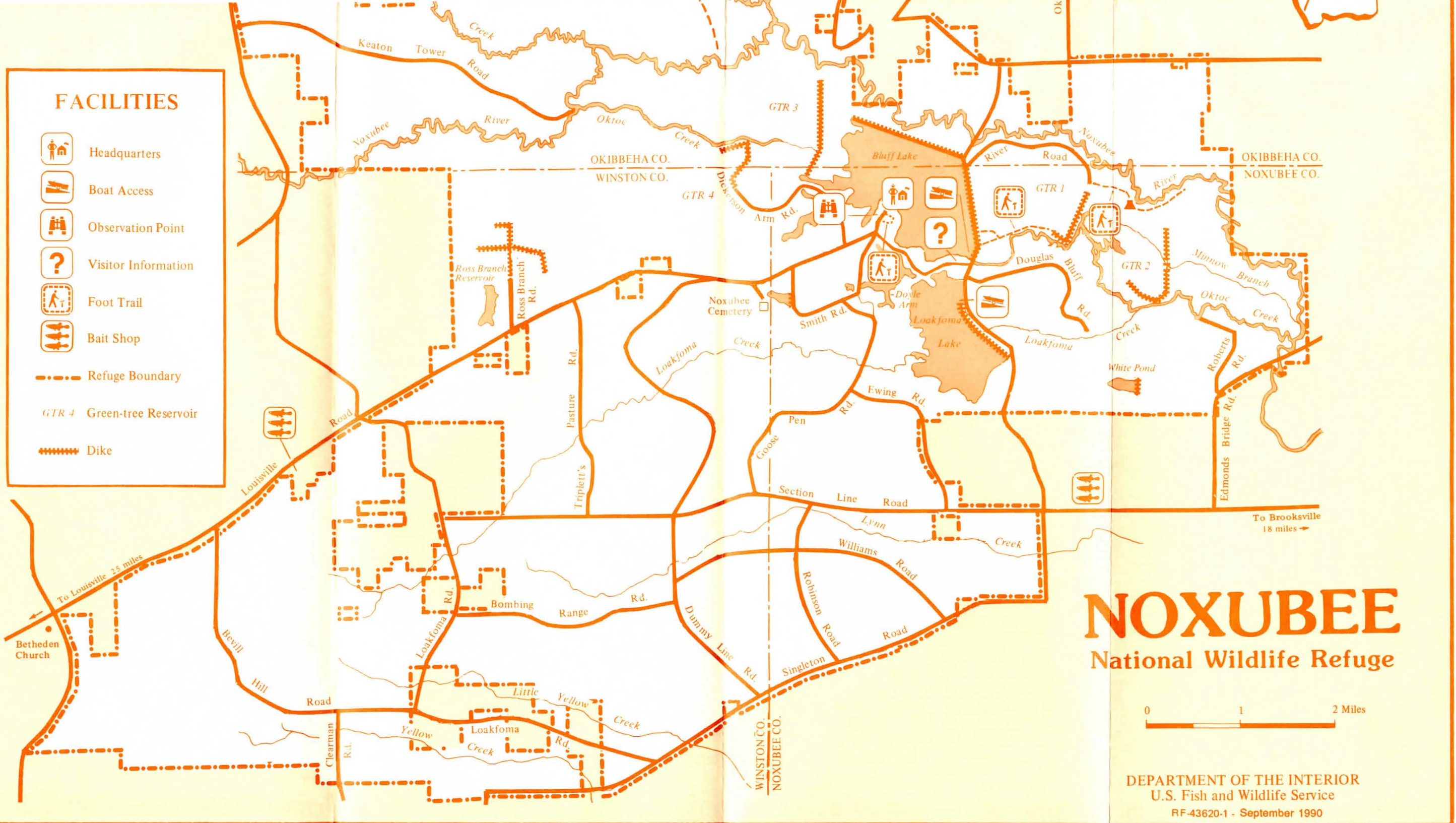
WEAPONS

Weapons are permitted only during authorized refuge hunting seasons.



FACILITIES

-  Headquarters
-  Boat Access
-  Observation Point
-  Visitor Information
-  Foot Trail
-  Bait Shop
-  Refuge Boundary
-  GTR 4 Green-tree Reservoir
-  Dike



NOXUBEE

National Wildlife Refuge



DEPARTMENT OF THE INTERIOR
 U.S. Fish and Wildlife Service
 RF-43620-1 - September 1990