

WHEELER NATIONAL WILDLIFE REFUGE
Decatur, Alabama

ANNUAL NARRATIVE REPORT
Calendar Year 1983

NATIONAL WILDLIFE REFUGE SYSTEM
Fish and Wildlife Service
U. S. DEPARTMENT OF INTERIOR

PERSONNEL



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1. Harvie L. Fowler.....Adm. Asst. (GS-9)PFT(EOD 05/15/61)
2. Thomas Z. Atkeson....Refuge Mgr. (GS-12)PFT(EOD 06/14/39)
3. Richard M. Bays.....Asst. Ref. Mgr. (GS-11)PFT(EOD 07/01/63)

Review and Approvals

Th. Z. Atkeson

02/28/84

Submitted by

Date

Complex Office Review

Date

Sam E. Drake Jr 3/15/84

Regional Office Review

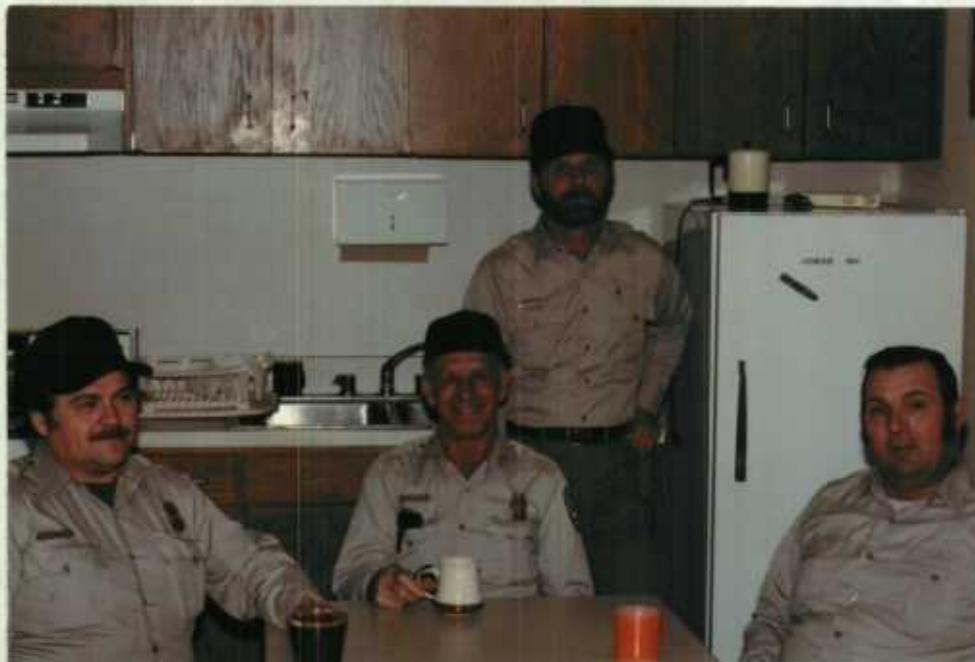
Date



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4. Faye Blankenship.....Bio. Tech. (GS-6)PFT(EOD 06/28/82)
5. Anita Bowman.....Ref. Mgr. Trainee (GS-5)PFT(EOD 01/10/83)



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6. James D. Ammons.....Maint. Worker (WG-8)PFT(EOD 12/17/79)
7. James H. Blackwood...Heavy Mobile Equip. Mechanic (WG-11)
PFT(EOD11/07/51)
8. Randolph Isbister....Maint. Worker (WG-7)PFT(EOD 08/07/83)
9. Virgil McWilliams....Eng. Equip. Operator (WG-8)PFT(EOD 08/28/72)



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10. Cynthia Thomas.....Park Aid (GS-2)PFT(EOD 07/10/83)
11. Lawrence Masters.....Supervisory ORP (GS-11)PFT(EOD 06/14/81)
12. Melody Maxwell.....Park Aid (GS-1)TPT(EOD 10/02/83)
13. Carolyn Garrett.....ORP (GS-7)PFT(EOD 10/09/79)

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INTRODUCTION

The Wheeler National Wildlife Refuge was established by Executive Order of President Franklin D. Roosevelt on July 7, 1938. Overlaid on the middle third of the Tennessee Valley Authority's Wheeler Reservoir, it was placed on land purchased by TVA as a bed for and buffer strip around the reservoir in 1934 and 1935. The reservoir was impounded in 1936.

The refuge is located in the Tennessee River Valley of Northern Alabama in parts of Morgan, Limestone and Madison Counties. Its western end lies partly within the city limits of Decatur, population approximately 50,000, and its eastern end touches the city limits of Huntsville, population about 150,000. Many smaller towns and communities are nearby and Nashville, Tennessee is about 110 miles to the north, Birmingham, Alabama, 85 miles to the south. Its topography is flat to rolling. Temperature extremes range from 10 degrees below zero to 110 degrees Fahrenheit, although winters are seldom below zero and summer temperatures rarely exceed 100 degrees. Rainfall is approximately 50 inches per year, and there is seldom protracted snow or ice cover.

TVA, the agency that purchased the area, considers that over 40,000 acres lie inside its perimeter, although the official acreage given is 34,135, omitting navigable water. Land includes about 19,000 acres, the remainder water. The land acreage consists of some 10,000 acres of Mississippi Valley type hardwoods, 3,000 acres of pine plantations, 5,000 acres of farmland with the remainder open shelves, rocket ranges, etc. Fully 5,000 acres lie inside the Redstone Arsenal boundary, while about 1,500 acres of this is partially administered by the Marshall Space Flight Center, National Aeronautics and Space Administration. Interstate-65 crosses the refuge. U. S. Highway 31 is part of its western boundary and State Highways 20 and 67 cross parts of the refuge and closely parallel the remainder.

Considered the easternmost national wildlife refuge of the lower Mississippi Flyway, it supports the southernmost wintering concentration of Canada geese of any significance, Alabama's only goose and largest duck concentrations. It was the first national wildlife refuge ever placed on a multipurpose reservoir and has supported up to 60,000 geese and near 100,000 ducks, although modern peaks are nearer 35,000 geese and 40,000 ducks. It includes interesting flora, a bird list of 304 species, mammals ranging from shrews to deer and a wide variety of reptiles, amphibians and fishes.

The refuge is now rather well developed with 112 miles of graveled roads, a modern Headquarters Complex and a large Wildlife Interpretive Center and Waterfowl Observation Building. Public use is heavy and visits of all types normally total over 600,000 annually.

The address is the Wheeler National Wildlife Refuge, P. O. Box 1643, Decatur, Alabama, 35602. The telephone number for the Headquarters Office is 205/353-7243, for the Wildlife Interpretive Center, 205/350-6639. The Headquarters Office is open Mondays through Fridays from 7:30 A.M. until 4:30 P.M., the Wildlife Interpretive Center Wednesdays through Sundays, 10:00 A.M. until 5:00 P.M.

The refuge also administers three satellites, all aimed at protecting endangered species. These are the Blowing Wind Cave National Wildlife Refuge, near Scottsboro, Alabama, the Fern Cave National Wildlife Refuge, near Paint Rock, Alabama, and the Watercress Darter National Wildlife Refuge located in the outskirts of Bessemer, Alabama.

A. HIGHLIGHTS

Perhaps the weather was the highlight of the year, for it ran the gamut of extremes. There was an unprecedentedly late freeze in April an unprecedentedly late flood in May, a severe summer drought and sub-zero temperatures in December. As a result, refuge crop production declined by half. The personnel shortage was relieved somewhat by volunteers and by the recruitment of a Park Aid, the assignment of a Refuge Manager Trainee here and the transfer to Wheeler of a Maintenance Worker from one of the closing hatcheries. Fortunately, there were no deaths, serious injuries nor insurmountable disasters.

B. CLIMATIC CONDITIONS

As noted under HIGHLIGHTS above, the weather of the year ran through the scale of extremes. January, February and March were reasonably normal, but there was a river flood April 5-12 that drowned early-planted crops and a sharp, late freeze on April 19. Weather continued over wet and there was an unusually late flood May 19-26. This overflowed dewatered units that had then been pumped almost dry, and, later, prevented all row cropping of these units, except their highest levels. A drought began in late June that continued until the beginning of fall rains in mid-November. The remainder of the year was both unusually cold and unusually wet. Temperatures of the year ranged from 102 degrees in August to minus 3 degrees in December. There was no snow during the year that covered the ground for more than a few hours, though there were periods of sleet and freezing rain in both January and December that glazed the countryside and paralyzed traffic. Comparing the weather with that of 1982, it was far less favorable for most activities, saw many both high and low temperature and rainfall records set and was one of the worst farming years in decades.

E. ADMINISTRATION

1. Personnel

There were no retirements nor resignations during the year. On January 10, Co-op Student Anita Bowman reported for duty. On March 20, Bowman was reclassified from Co-op Student to Refuge Manager Trainee, GS-5. On June 27, Andrew Jenkins, who had completed a 3-month tour as a Student Conservation Association volunteer, was given a 30-day appointment as a temporary laborer. On July 11, Cynthia R. Thomas, a former YACC enrollee, began duty as a Park Aid, GS-2. Andrew Jenkins completed his temporary appointment on July 26 and returned to school. On August 7 through September 6, Michael Grantland worked a 30-day temporary appointment as a laborer. Also on August 7, Randolph Isbister, transferring from the closing Pisgah Forest National Fish Hatchery, began duty at Wheeler as a Maintenance Worker, WG-7. Beginning October 7,

Melody Maxwell, a former YCC enrollee, began duty as a part-time Park Aid, GS-1, under the "Stay In School" program. On November 27, Tractor Operator Virgil McWilliams, WG-6, was reclassified to Engineering Equipment Operator, WG-8. Effective December 11, Faye Blankenship was reclassified from Maintenance Worker, WG-6, to Biological Technician, GS-6.

The assignment of a Refuge Manager Trainee, a Maintenance Worker, a Park Aid and a part-time Park Aid have done much to relieve the acute personnel shortage of 1982. However, the Soil Conservationist retired over two years ago. This slot has never been refilled and the Refuge Manager has had to give such time as could be spared from higher priority matters to the important farm program. Except for a brief period when the YACC program was in effect, the Wildlife Interpretive Center Complex has never had the staffing originally planned for it, and personnel were not available to give proper supervision to the heavy schedule of public hunts, nor to adequately patrol the refuge area throughout the waterfowl use period.

	<u>Permanent</u>		<u>Temporary</u>
	<u>Full-Time</u>	<u>Part-Time</u>	
FY-1983	12	0	3
FY-1982	8	1	1
FY-1981	12	1	0
FY-1980	11	1	0
FY-1979	10	1	1

2. Youth Programs

Wheeler was allotted 6 YCC enrollees, 3 males and 3 females, and the program began June 6. Arrangements were also made through local officials for a 6-enrollee, all male CETA program beginning that same date. The CETA program terminated July 15, the YCC program July 29, although several enrollees continued into early August to make up missed days. Where the CETA program was concerned, some disciplinary problems occurred, but, as usual, the YCC program ran smoothly. The enrollees of both programs were used to provide much needed help at the Wildlife Interpretive Center, to cut back walking trails and road edges, to paint the Beaverdam Swamp Boardwalk, to remove litter from both Wheeler itself and its satellites, to remove beaver dams, to aid with the maintenance of grounds and buildings and to help with a wide range of miscellaneous duties. (See photo on next page.)

5. Funding

The refuge received funding under Wildlife Resources-1260, Expenses for Sales-6060 and Quarters Maintenance-1994.



A YCC and a CETA enrollee paint the floor of the Beaverdam Swamp Boardwalk with an abrasive, non-slip paint obtained from military excess. (June, 1983-RMB)

Migratory Bird Enhancement is the primary objective and receiving the major portion of funding. Current waterfowl maintenance amounts to approximately 8,500,000 use days annually while other migratory birds amount to 3,000,000 use days.

Only occasional bald eagles and ospreys pass through with no local nesting. Current output for endangered and threatened species is approximately 250,000 use days and is accounted for mainly by gray bats residing in three caves, one on Wheeler property and one each on two satellite refuges.

Interpretation is of considerable importance since this refuge is located in a highly populated area and received in excess of 600,000 visits in 1983. Four public hunts were held with 4,000 plus hunters visiting the refuge.

Expenses for Sales activities are directed toward thinning refuge pine plantations.

The following resume' shows funding from FY-1980 through FY-1984:

	<u>FY-80</u>	<u>FY-81</u>	<u>FY-82</u>	<u>FY-83</u>	<u>FY-84</u>
WILDLIFE RESOURCES:	-	-	-	-	\$406,000
Migratory Birds	\$193,000	\$186,000	\$198,000	\$205,000	-
Mammals and Non- Migratory Birds.....	31,000	30,000	28,000	28,000	-
Interpretation and Recreation.....	78,000	129,000	121,000	111,000	-
Expenses for Sales....	7,000	8,000	8,000	8,000	10,000
Quarters Maintenance..	-	-	-	3,000	4,000

6. Safety

Wheeler's record of over 41 employee-years without a lost-time accident was broken when Tractor Operator Virgil McWilliams took a twig in the eye while helping with goose trapping. However, the injury was minor, required little lost time and quickly healed. There were no accidents involving YCC or CETA enrollees. Neither were there any involving refuge visitors, although a participant in the refuge's archery deer hunt went to sleep while on a tree stand, fell and was seriously injured. There were no vehicle accidents. In June, Regional Safety Officer Ken Cooper gave Wheeler a comprehensive safety inspection and found only minor hazards that have since been corrected. The International farm tractor was indefinitely deadlined due to inadequate roll bars.

A Safety Committee was kept active and regular monthly safety meetings held. These varied, but usually involved round-table safety discussions and a film. All worthwhile safety equipment is on hand.

7. Technical Assistance

After the negotiated settlement with the Olin Corporation, Wheeler personnel have continued to work closely with the review panel concerning monitoring and mitigation. Refuge employees have also worked closely with Ecological Services concerning mitigation for the pending I-565 crossing of the Beaverdam Creek Arm. There has also been close cooperation with girl, boy and explorer scout troops concerning campouts, camporees and merit badge projects. Woodduck nest boxes constructed and donated by scouts were erected in proper locations by refuge employees. Larry Masters and Carolyn Garrett donated much time toward the preparation for an actual holding of the Southern Wildfowl Festival.

F. HABITAT MANAGEMENT

1. General

Despite the April freeze, the fall mast crop seems fairly average. TVA intensified efforts to control hydrilla in Gunter'sville Reservoir, and, to date, none has been identified in Wheeler Reservoir nor on this refuge. Other aquatics continued to spread through the refuge.

2. Wetlands

For the second consecutive year, special attention was given to gravity draining dewatered units prior to the spring filling of the reservoir, and TVA began pumping in March. Units were virtually within ditches when they were overflowed by the April flood. Once this had subsided, pumping was resumed and units were again almost empty they were overflowed by the May flood. Heavy rains continued into June and, by the time they had again been pumped empty and land had dried, it was not only too late for corn planting, but too late for the planting of any crops. Only a few of the higher parts of the White Springs unit were ever planted to row crops, none of the Rockhouse-Buckeye units. In July, refuge employees began discing and planting these units to brown-top and Japanese millets, omitting all locations supporting vegetation of waterfowl food value. Nevertheless, about 525 acres were planted. This never received a rain until late October and produced little. The early pumping effort was set up as a 3-year experiment to determine whether these units could be drained early enough for corn planting. This has already failed the first two of the three years.



Using Jobs Bill funds, TVA treated willows and cleared silt from the ditches of the refuge's two dewatered units. (November, 1983-2-RMB)

3. Forests

There was no planned burning and no disease outbreak or insect infestation. Hampered for some years by lack of the pulpwood market, there was a change in late 1983 and the refuge was able to make a sale by thinning one of the overthick pine stands along the south boundary truck trail between Ginhouse Branch and Cave Springs. This involved about 12 acres and 250 cords of pulpwood and netted \$2,603.30. Hopefully, the remaining stands in that vicinity can be thinned in 1984.



Progress was made in thinning overthick pine stands. Photo shows a Bel-Mor tree harvester at work. (December, 1983-3-RMB)

4. Croplands

1983 farming involved 35 cooperators. Forced account farming was increased, partly in an effort to place food in dewatered units where flood prevented cooperative row cropping and partly in an effort to offset low crop production by making a greater acreage of forage available for geese. This included 525 acres of millet and 511 acres of wheat and wheat-vetch mixtures. Cooperators planted 678 acres of corn, 673 acres of grain sorghum, 470 acres of wheat and 2,065 acres of soybeans. This resulted in a total production of 94,939 bushels of seed and grain and 137 tons of hay valued at \$446,693.00. Reflecting the spring floods and summer drought, the total production declined by 51.26 percent compared with 1982 production. Nevertheless, 25,685 bushels of grain and seed were left in fields for wildlife, although, compared with 1982,

this also declined by 49.78 percent. In all, 4,398 acres were kept in various forms of agriculture and a substantial acreage was fallowed to satisfy ASCS set-aside requirements. There were 1,328 acres of young wheat and wheat-vetch mixture available in the fall as goose forage.



In an effort to offset drought damage, one of the cooperators purchased this modern irrigation unit and put it to work on Flint Creek Island. (August, 1983-4-RMB)

7. Grazing

There were no cash rentals, and all grazing was incorporated in cooperative agreements. With the majority of all the pasture lowlying, these were overflowed by both the April and May floods and badly damaged by the summer drought. In all, 135 acres were pastured resulting in only 95 AUMs, due to drought.

8. Haying

There were no cash rentals, and all hay was incorporated in farming agreements. There were 122 acres hayed with 137 tons harvested.

9. Fire Management

Only a single 3-acre surface fire required suppression by refuge personnel during the year, and this did slight damage.

10. Pest Control

As usual, the only bird control required during the year was the moving of a large blackbird roost located just inside the refuge that was causing complaints from adjoining householders. Several refuge employees devoted three late afternoons to this, using shell-crackers, scare pistols and some live ammunition. The roost shifted, and there were no further complaints. However, crows, starlings, and the blackbird group continued to plague local farmers and to take a considerable portion of the grain and seed that this refuge leaves for wildlife. During the December 17 Christmas bird count, for example, over 90,000 of these birds were tallied on the refuge.

Mammal problems have included the damming of dewatered ditches and the plugging of road culverts by beavers, tunneling into dams and dikes by muskrats and crop damage by groundhogs. As yet, there has never been serious crop damage here by deer. Remedial efforts have included muskrat and beaver control by cooperating trappers, the removal of beaver dams by hand labor and by dynamiting and gassing of groundhog burrows. Rabbits have caused some damage to the shrubbery of the Wildlife Interpretive Center complex.

Johnson grass continues the primary plant pest here. The refuge used no herbicides, but relied on mowing and discing for vegetative control. Cooperative farmers were restricted to approved herbicides, and their use well monitored.

There were no serious insect pest outbreaks, although there was some greenworm damage to grain sorghum and soybeans. Cooperators used comparatively small amounts of Sevin and other approved insecticides, and this use was also closely monitored.

12. Wilderness and Special Areas

Although there is no wilderness here, there are four public use and one research natural areas. A bronze plaque designating the Beaverdam Creek Swamp public use natural area a National Natural Landmark was received from the National Park Service. Refuge employees mounted this on an attractive concrete and stone base near the beginning of the Beaverdam Creek Boardwalk. All these natural areas continued in good order throughout the year. (See photo on following page.)

G. WILDLIFE

1. Wildlife Diversity

Wheeler's Wildlife Diversity continued to reflect its habitat diversity and there were no real changes from the 1982 situation other than the addition of several new species to the bird list. This list was revised, sent in for reprinting and now totals 304 species.



This bronze plaque indicating a National Natural Landmark was placed on a concrete and stone base near the beginning of the Beaverdam Creek Swamp Boardwalk. (June, 1983-5-RMB)

2. Endangered and/or Threatened Species

Although bald eagle sightings were frequent during January and February, they were only occasional in the fall and early winter, and only one was noted on the Christmas bird count. Peregrine Falcon sightings continued to increase. In October, a refuge employee picked up an injured Peregrine Falcon near the Huntsville-Decatur Jetport. This had evidently been injured by some impact and was promptly sent to the Wildlife Rescue Service, Birmingham, where it is said to be recovering.

The refuge cooperated with a TVA and State sponsored osprey hacking project. An artificial eyrie was erected. Two young were flown in from Florida and were fed by refuge employees. One soon died, but the other flighted successfully. (See photo on following page.)

Alligator sightings declined, though there were several during late spring, summer and early fall. Most of these involved 3 to 5 foot individuals.

Two twilight gray bat counts were made at the mouth of the Cave Springs Cave. One on June 2 showed 8,000 while one on August showed 8,700. This can be compared with an August 2, 1982 count of 10,000. The fluctuations of this colony are not understood.



Cooperating with a TVA and State project, these ospreys were hacked by refuge employees. (June, 1983-6-LJM)



Anita Bowman holds a wounded juvenile tundra swan, while the camera and sound men of the Charles Kuralt Show team record the scene. (December, 1983-7-LJM)

3. Waterfowl

A. Geese and Swans

Only a single tundra swan was noted on the refuge and that in December. However, a number of swans were reported using on Guntersville Reservoir and from Guntersville Dam down river to near the eastern end of the refuge. On December 15, a fisherman caught a wing shot juvenile near Whitesburg and telephoned the refuge office. An employee picked it up; it was promptly sent to the Wildlife Rescue Service, Birmingham, where it is reported recovering nicely. (See photo on previous page.)

The goose peak for the 1982-83 season came on January 13 with a count of 27,500 Canada geese and 2,300 snow geese, the majority blue phase. However, numbers remained high through January, then dwindled rapidly through February. As usual, about 25 Canada geese, mainly cripples, remained through summer and, although there was one nesting attempt, no goslings resulted.

The first incoming Canada geese appeared on schedule in mid-September. The build-up was slow through October and November, but accelerated with the cold weather of December. The final air count of the year, December 15, showed 21,000 Canada geese and 2,000 snow geese. This indicated Canada goose numbers lagging well behind those of late 1982, and the food supply was already vanishing from refuge fields. No white-fronted geese nor other unusual species were sighted during the year.



This Canada goose without feet was shot adjoining the refuge by a Birmingham hunter. (December, 1983-8-RMB)

*poorly
wooded*

B. Ducks

A February check of woodduck nest boxes showed 485 in good condition for 1983 nesting. However, a late August check indicated that only 472 had remained so and that only 35.6% showed positive indications of duck use. This use figure has declined steadily for the past decade or more and its cause is not understood.

The peak of the 1982-83 season seems to have come about January 5 when an air count indicated a disappointingly low 26,000. Summer duck numbers were normal, although the April and May floods must have ruined the nests of many mallards and black ducks. Fall arrivals were gradual and a December 15 air count showed only 26,000 present, an even poorer showing than in 1982. There is much concern here, both by refuge personnel and by local sportsmen, over steadily declining duck numbers.

The two Ruddy Shell ducks, noted in the 1982 report, continued in January, 1983. On January 27, a cannon trap shot netted both these Shell ducks, along with over a hundred mallards, wigeons, etc. After examination by a number of bird enthusiasts, the Shell ducks, evidently a mated pair, were banded and released, and have not been seen since. No other unusual species were noted during the year.



This pair of Ruddy Shell-ducks was netted in a refuge banding trap, then released. (January, 1983-9-RMB)

C. Coots

Again, coots continued to increase with the increase of submerged vegetation. About 7,000 were estimated present in late October, although numbers dwindled as weather became colder and only about 500 were present during the iced conditions of late December.

4. Marsh and Water Birds

Double-crested cormorants continued their comeback with about 100 present at last count. A Louisiana heron, an unusual visitor here, appeared on May 5. All wading bird numbers continue low, though showing a slight improvement over recent years. Rail numbers continued unusually low.

5. Shore Birds, Gulls, Terns and Allied Species

The refuge continued to cooperate with the Auburn woodcock study, and several nests were located in late winter and early spring, although the fall flight was unusually light. Snipe numbers seemed normal, although both species must have suffered severely during the sub-zero temperatures of December. No changes were noted among other shorebird species, nor among terns. Gulls were unusually numerous throughout December, the majority of them ring-billed gulls.



The refuge cooperated with the State woodcock study. Photo shows a Brittany Spaniel, used in the sturdy, pointing a fledging. (February, 1983-10-RMB)

6. Raptors

With the comeback of barred owls, all our species numbers appear normal. Where the hawks are concerned, red-shouldered hawks continue almost absent from this locality, though the numbers of other species seem normal, with red-tailed hawks especially abundant. The refuge has continued its arrangement whereby injured raptors and other species,

often brought to headquarters or to the Wildlife Interpretive Center by the public, are picked up by a Birmingham News truck making daily visits to Decatur, then left by that truck with the Wildlife Rescue Service, Birmingham.



This goshawk, Alabama's first specimen, was found dead and brought to the refuge by an alert State Conservation Officer. (February, 1983-11-LJM)

7. Other Migratory Birds

No new species were added to the bird list this year, although there were some unusual sightings and some unusually early and late appearances. The refuge bird list was revised for reprinting and now includes 304 species. No significant changes were noted in the numbers or behavior of other migrants, although house finches continued to increase locally.

8. Game Mammals

Although deer are now thinly spread throughout the entire refuge area, they are not numerous and hunters complain that they are being overhunted. Coyotes continue to increase, and squirrel numbers showed some improvement. Rabbit numbers continued low.

10. Other Resident Wildlife

Skunks appear increasing, probably due to the fact that their fur has been almost worthless in recent years. Beaver numbers may have stabilized, but are certainly high. No significant changes were noted among other refuge species, including reptiles and amphibians.



Peppy LaPue, Chemical Warfare Specialist, PU-9/1.
(February, 1983-12-RMB)

11. Fisheries Resources

Perhaps the most pronounced change has been the spread of yellow perch throughout Wheeler Reservoir and this refuge. These first appeared in the upper end of Guntersville Reservoir several years ago and have been steadily spreading downriver. Catches on the refuge throughout 1983 were fairly common. The State continued the stocking of hybrid lake bass this year. As was the case in 1982, fishing success was unusually high throughout 1983. Local State fishery biologists are crediting the spread of aquatic vegetation with this improvement.

15. Animal Control

The only bird involved the moving of a blackbird roost in early fall. Some gassing of groundhog burrows was done to placate farmers. Beavers continued a problem and refuge employees spent some time with efforts to night shoot these, though with little success. Considerable time was spent removing dams and unplugging culverts.

The primary animal control was carried on by four cooperating trappers operating under this refuge's Animal Control Plan. During the 1982-83 fur trapping season, these removed 38 muskrats, all from the display pool, 37 beavers, 1 coyote, 5 red foxes, 19 gray foxes and 6 skunks. This trapping was resumed, again with four cooperators, during the 1983-84 season, though pelt prices have been so low there has been little enthusiasm for trapping and limited catches to date.

16. Marking and Banding

The only marking done during the year was the banding of waterfowl. Although Wheeler again had little success trapping Canada geese, other quotas were filled, including the first banding of ringnecks and other divers ever done here. As usual, young woodducks were banded in late summer. Total banding for the year included 23 Canada geese, 939 mallards, 79 ringnecks, 109 woodducks, 16 redheads, 11 canvasbacks, 189 black ducks, 296 wigeons, 7 pintails and 3 coots.



Faye Blankenship and Richard Bays band ringnecks from a deep water trap. (February, 1983-13-LJM)

17. Disease, Prevention and Control

Neither trichomoniasis nor pox were noted among doves this year. There was no evidence of any type of waterfowl disease, no rabies among small mammals and no signs of hemorrhagic or other diseases among deer.

H. PUBLIC USE

1. General

The year began with no personnel assigned solely to the Wildlife Interpretive Center complex except ORPs Larry Masters and Carolyn Garrett. However, this situation was partially remedied January 10 by the assignment of Anita Bowman to Wheeler as a Co-op Student. There was further relief in June with the beginning of the YCC program and in early fall under the "Stay-In-School" program provided further help during the fall and winter heavy use period.

The original sewage storage tank and lift pump provided the WIC was totally inadequate. During periods of heavy use, this system became overloaded and backed sewage into bathrooms, overflowing and resulting in messy and embarrassing situations. In the spring, this was replaced by a larger unit that has solved this problem. During the sub-zero temperatures of late December, an attic water pipe above the classroom froze and ruptured dissolving the sheetrock ceiling and soaking walls and carpet. This was under repair at the close of the year.



The inadequate sewage lift pump and storage tank of the Wildlife Interpretive Center were replaced by a larger unit. (February, 1983-14-LJM)

During the year, 36,685 visits were logged at the Wildlife Interpretive Center, 31,644 at the Waterfowl Observation Building. By pre-arrangement, 295 groups totaling 12,559 individuals visited the refuge. Total refuge visits, with public fishing leading all others, are set at 619,000 for the year.

2. Outdoor Classrooms-Students

A total of 1,865 students participated in structured outdoor classroom activities, using the refuge as a learning resource. Special assistance was provided for four classes of handicapped students, totaling 71 individuals.

3. Outdoor Classroom-Teachers

Again, the Huntsville school system proved most active in conducting outdoor teacher classrooms. A total of 81 teachers were involved in refuge learning experiences. "Project Earthscope", a Title IV program in the Huntsville school system, involves two full-time teachers. After a training period with ORP Larry Masters, these teachers continued extensive outdoor training with both teachers and students. Lesson plans, suggestions for activities and additional help in planning outdoor learning experiences were provided another 14 teachers.

4. Interpretive Foot Trails

New signs were designed and placed along both the Cypress Pond Boardwalk and the Environmental Education Study Area trails. In the absence of counters, no accurate figures can be given for trail use, though they were regularly used and this use was especially heavy in spring and fall. Trails were brushed back during the YCC program and regularly policed for rubbish.

5. Interpretive Tour Routes

Twenty conducted tours, involving 416 visitors, were given during the year. Some were general, though the majority were for waterfowl viewing. One involved a U. S. Corps of Engineers group and the remainder were for ornithological and school groups.

6. Interpretive Exhibits/Demonstrations

A total of 908 visitors participated in conducted waterfowl identification exercises at the Waterfowl Observation Building. A second telescope was procured from excess, mounted in the building and several thousand visitors used these telescopes and nearby mounted

illustrations to increase their knowledge of waterfowl. ORPs Larry Masters and Carolyn Garrett helped with the local Wildfowl Festival, both in the planning state and its actual conduction.



Carolyn Garrett helps with the local Wildfowl Festival. (November, 1983-15-LJM)

7. Other Interpretive Programs

Conservation films, changed weekly, are shown each weekend at the Wildlife Interpretive Center and were viewed by 6,955 individuals during the year. These films came from a wide spectrum of sources. Four special seminars involving songbirds, reptiles, waterfowl identification and local Indian cultures were held. Two hunter safety courses, one involving bow hunters, the other gun users, were conducted. (See photo on following page.)

A new songbird exhibit was contracted for and received, but the case was of improper dimensions, and this was rejected and is pending replacement.

Refuge visitors of the year came from 39 states and from 10 foreign nations. A total of 25 off-site programs were given by various refuge members.

8. Hunting

In an effort to relieve the obvious waterfowl disturbance that the heavy hunt schedule had caused in recent years, this schedule was modified in 1983 to provide for a squirrel hunt throughout the month



A local professor demonstrates a rat snake at the refuge's reptile seminar. (July, 1983-16-LJM)

of October and an archery deer hunt October 15-November 15, but with a disturbance-free period from November 16 to the resumption of a flintlock and bow deer hunt beginning January 16, 1984 and continuing through January 31 and with both rabbit and night hunting for raccoons and opossums permitted throughout February, 1984.

Deer hunting for the 1982-83 season continued through January 24, 1983 with both a refuge flintlock and bow hunt and general hunting on the refuge portion of the Redstone Arsenal reservation in progress at the beginning of the year. Summing up, 1982-83 deer hunting resulted in 26 deer taken on the all-refuge hunt and 174 known taken from the refuge portion of the Redstone reservation. This gives a total of 200 deer known removed from the refuge that season. However, total removal, including unreported and illegal kills, road kills and crippling losses may well have doubled that figure. Only 6 additional deer were reported taken during the October 15-November 15, 1983 archery hunt.

The February, 1983 rabbit and night hunts resulted in the removal of 75 swamp and 725 cottontail rabbits with 2,400 hunting trips and about 10,000 hunting hours. To this can be added 1,200 raccoons and 150 opossums removed by night hunting with an estimated 9,000 hunting trips and 45,000 hunting hours. The October, 1983 squirrel hunt brought an estimated bag of 200 fox and 4,500 gray squirrels from 2,700 trips and 12,000 hunting hours. The usual on-and-off tally-ho fox hunting was permitted on a portion of the refuge along the northern side of the river.

Although there were no firearm accidents, a young hunter was seriously injured during the fall archery hunt by a fall from a tree stand. Several small fires, none serious, occurred during hunt periods, and there were a number of violations, though most of these were minor. The 1983 hunt schedule, providing approximately two hunt-free months during the height of the waterfowl use period, was certainly a proper move aimed at halting the downward trend of waterfowl here. The month-long squirrel and rabbit hunts are much too long in view of the low numbers of both species. Deer hunters are complaining of refuge overhunting. In general, the local public attitude is that the refuge is being overhunted and that this constant disturbance is largely responsible for lowering waterfowl numbers.

9. Fishing

The heaviest single public use, fishing accounted for 394,000 visits and fishing success was unusually high. A Junior Fishing Rodeo, sponsored by a local television program, was held at the refuge's display pool. This was heavily attended by youngsters along with parents and grandparents. The sponsor provided free refreshments and numerous prizes. There were no accidents and this was a real success. Hopefully, it can be repeated.



A Junior Fishing Rodeo, sponsored by a local TV program and held at the refuge's display pool, was a real success. Photo shows Larry Masters helping supervise the youngsters. (August, 1983-17-MWM)

10. Trapping

As discussed under Animal Control above, only limited trapping aimed at nuisance animal removal and involving four cooperating trappers occurs here.

11. Wildlife Observation

Wheeler continued the mecca of bird watchers from a wide radius including those from Birmingham, Nashville and Atlanta as well as from many smaller towns and communities. Its waterfowl concentration continued the primary attraction. Wildlife photography ranks close behind. In all, visits of this type for the year were estimated at 25,750.

12. Other Wildlife Oriented Recreation

Field trials were popular throughout the year. These included 30 coon dog, 4 retriever and the refuge's first quail dog trial. A total of 1,292 individuals participated in these. There was also, of course, boating, canoeing, horseback use and hiking related to wildlife observation.

13. Camping

As usual, camping was limited to supervised youth groups under permits. Nevertheless, 24 such groups totaling 739 individuals camped on the refuge during the year. Though the majority were local church and scout youth groups, the list does include an Audubon Society Junior Campout, a Mormon Father and Son Campout and a District Scout Camporee.

14. Picnicking

There was the usual picnicking throughout all but the coldest months with the total for the year set at 8,514 individuals.

16. Other Non-Wildlife Oriented Recreation

With this locality's heavy human numbers, uses of this type seem inevitable. These range from warm weather water skiing, swimming and boating to berry, nut and muscadine gathering, the gathering of volunteer turnip greens from wheat fields, hiking, jogging, bicycling and much general driving throughout the refuge road system.

17. Law Enforcement

Wheeler's staffing, though improved, still does not permit the thorough job of refuge enforcement and visitor protection that once characterized

this refuge, even though there has been close cooperation from Alabama Conservation Officers, other local enforcement officials and from local courts. A reasonably steady patrol was maintained through the heavy public hunt and waterfowl use periods. In all, 155 cases were made during the year.

I. EQUIPMENT AND FACILITIES

3. Major Maintenance

The maintenance of the year was relatively normal. The two floods damaged the road system, though this damage was not serious. The refuge purchased 1,305 tons of crushed stone and used this on weak areas throughout the roads on the southern side of the River. Similarly, Limestone County, as pay-back for the use of the refuge's gravel pit, reenforced weak areas on roads on the northern side. Refuge employees replaced several lines of culvert and installed others. The entire road system was well graded and edges brushed back.

The sub-zero temperatures of December again ruptured water pipes in the refuge shop, as mentioned above; one in the attic above the classroom of the Wildlife Interpretive Center. Pipes were quickly repaired, but the considerable damage done to the Center was still under repair at the end of the year. As mentioned above also, the sewage lift pump and storage tank serving the Center were replaced with a larger unit, so eliminating a problem that has plagued the Center since its opening. By forced account, a back wall of the classroom was fitted with shelves, then fronted with sliding glass doors to improve specimen storage and display. However, there are still problems with this building, for its shake roof leaks and there is trouble with rain blowing into louvers.

The only maintenance to residences involved the repainting of walls, ceiling and woodwork in three bedrooms of Residence #1. The TD-15 bulldozer was used to clear hedgerows and improve drainage in a large, former pasture area along the eastern side of the Flint Creek embayment and the peninsula area near Brushy Creek, both now converted to row crops. Both the bulldozer and motorgrader were used to improve the drainage of several Flint Creek Island fields and the bulldozer used to push back encroaching wood edges around several fields on the northern side of the River. (See photo on following page.)

4. Equipment Utilization and Maintenance

Again, Wheeler has attempted to conserve fuel by minimizing heavy equipment use and by holding vehicle use to a practical minimum. A three-wheeled all-terrain cycle was purchased and has made several types of field work more effective, saved gasoline and shoe leather.



The motorgrader and bulldozer were used to improve the drainage of farmed fields. Virgil McWilliams operates the refuge grader. (September, 1983-18-RMB)

The only heavy equipment repairs of the year included the replacement of a water pump and alternator of the TD-15 bulldozer and the replacement of the kingpin along with repairs to the fifth wheel and trailer brakes of the truck-tractor lowbed trailer combination. Sedans and half-ton trucks required the usual repairs to brakes and replacements of wheel bearings, water pumps, etc. There were no major repairs to farm tractors, although there were the usual replacements of discs, scrapers, axles and bearings in the various harrows and plows. As usual, lawnmowers and chainsaws required continuous small repairs and there were numerous filter changes, greasings, oil changes, tire and battery changes and minor adjustments to most of the vehicle and equipment items. Fortunately, there were no accidents nor major equipment breakdowns during the year.

New equipment items purchased during the year included a Dodge half-ton truck, a Chevrolet Chevette sedan, a Honda all-terrain-cycle, a 12-ton hydraulic press, a small bearing puller, a self-propelled power mower, a 20-inch cut push mower, a gasoline operated grass trimmer, and, for use at the Wildlife Interpretive Center, a motion picture projector and a cassette recorder. Transfers to Wheeler from other stations or from military excess included a telescope, a wood lathe, a zoom lens, a two-way Motorola radio, an IBM electric typewriter and six .357 caliber revolvers.

These acquisitions were offset by a number of disposals through transfer or sale. Transfers included four .38 caliber Smith and Wesson revolvers, a 3-HP sprayer with boom, six Homelite chainsaws, a portable electric

saw, a reel type power mower, a Case-500 farm tractor, a Grass-Hog trimmer, a lawnmower and bagger, two portable toilets, a toilet pump, three typewriters, and a Minolta pocket camera. Sales included a 1974 half-ton Ford truck and an old IBM electric typewriter. Other dispositions were pending at the end of the year.

6. Energy Conservation

Wheeler has made an earnest effort to remain within its energy quotas. Reducing vehicle use to a practical minimum enabled remaining within the gasoline allotment. The purchase of a Honda all-terrain-cycle and its use for woodduck nest box checks, boundary reposting, boardwalk repairs and mild weather patrols certainly saved gasoline. On the other hand, an emergency situation that prevented row cropping dewatered units and required their sowing by forced account coupled with expanded green forage plantings in an effort to offset reduced hard food production meant increased diesel fuel use, and a supplementary allotment of 1,000 gallons was requested and received. The thermal storage unit experimentally placed in the Wildlife Interpretive Center by TVA was instrumental in markedly reducing electricity use there. However, with the present headquarters and WIC complex, kilowatt allotments are unrealistic and unlikely to be met.



Homer Blackwood uses the 3-Wheeler while repairing the Beaverdam Creek Swamp Boardwalk. Its small tow trailer was constructed by refuge employees. (June, 1983-19-RMB)

J. OTHER ITEMS

1. Cooperative Program

In cooperation with the U. S. Forest Service, gypsy moth traps were placed on the refuge and watched by refuge employees throughout the warmer months in an effort to determine if these are present in this locality, though no moths resulted. The refuge continued to cooperate with the Statewide woodcock study, with eagle and goose surveys, the reporting of specially marked birds, etc. Cooperation with the U. S. Geological Survey and its test well, located on the refuge for the purpose of monitoring ground water levels, continued. There was the usual cooperation with all types of scouts for camp sites and for help with merit badge and eagle qualifications. Help was given numerous students with background material to be used in the preparation of term papers. Cooperation with the Lurleen Wallace Development Center, North Alabama Regional and Retreat mental hospitals continued with a day camp site provided, fishing in the display pool allowed and special programs given patients. There was cooperation with all the schools in the area and especially so with the nearby John C. Calhoun Junior College, Athens State College, and the University of Alabama, Huntsville. A close working relationship was maintained with the Alabama Department of Conservation and Natural Resources and its locally assigned game biologists, fishery biologists and conservation officers. The refuge cooperated with the Agricultural Stabilization and Conservation Service and its crop related programs. With not only our Service but with TVA, the Department of Defense and the National Aeronautics and Space Administration also involved with the refuge area, close contacts were maintained with these.

2. Items of Interest

A dozen news releases were written during the year, most of these announcing special programs offered at the Wildlife Interpretive Center, and were sent to local newspapers. In addition, a weekly outdoor column, written by refuge employees, was continued throughout the year and used by seven local newspapers as well as by radio and television stations.

Two of the new "National Wildlife Refuge System" awards were recommended during the year and approved. One was presented to J. B. "Jack" Tanner, a retired Alabama Conservation Officer, the other to Gordon G. Esslinger, a retired supervisor of the Alabama State Conservation Officers. Both had been staunch supporters of this refuge since its earliest days.

In addition to changing individual signs, several weak stretches of boundary were reposted and repainted. The rock base of the large entrance sign along State Highway 67 east of Flint Creek was demolished and rebuilt in order to accommodate one of the new rectangular signs.



The stone base of one of the large entrance signs was demolished and rebuilt to accommodate one of the new rectangular signs. (June, 1983-20-RMB)

3. Credits

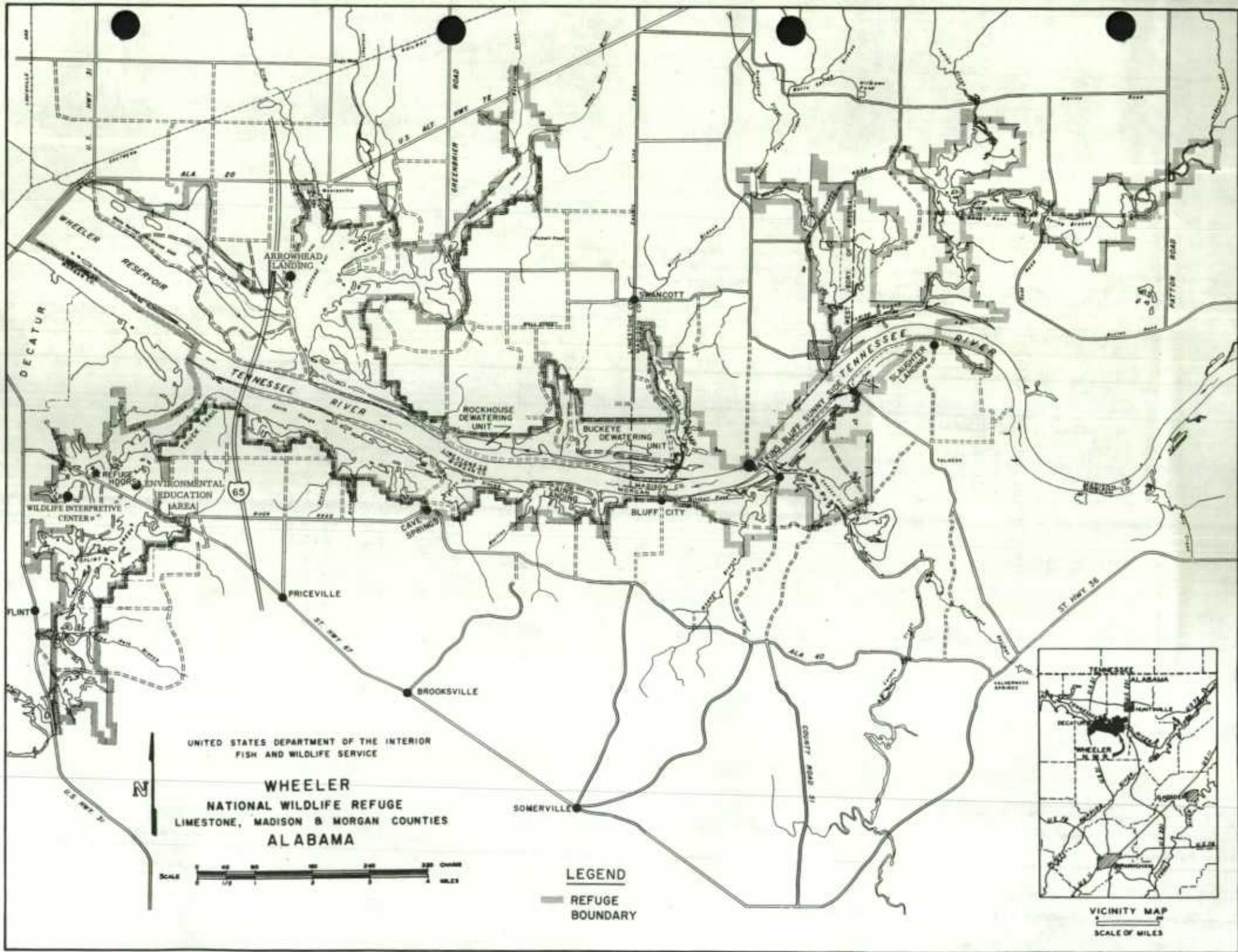
The Administrative Assistant Harvie Fowler and Assistant Refuge Manager Richard Bays prepared the section on Funding. Outdoor Recreation Planners Larry Masters and Carolyn Garrett provided Public Use data. The majority of the photographs were taken by Richard Bays, although some were contributed by Larry Masters and Carolyn Garrett. Faye Blankenship arranged and typed the final draft on this report.

K. FEEDBACK

There is much to be grateful for. The year's funding was certainly adequate. Refuge buildings are modern, and its equipment up-to-date and in good condition. The assignment of two new full-time employees, a trainee and a part-time employee did much to relieve the personnel shortage. The reshuffling of the hunt schedule to provide a two-month free gap helped reduce waterfowl disturbance. Goose numbers continued to improve and duck numbers, still pathetically low, were at least no worse than those of the year before. Relations with the general public, with other agencies and with local political figures continued smooth. There were no personnel injuries, no wrecks or building fires and morale here is high.

On the red side of the ledger, weather ranged from extreme heat to extreme cold, from drought to floods and the crop year was one of the worst on record. By the end of the year, Wheeler's fields had been picked as bare as Mother Hubbard's cupboard. There were administrative problems, too. There were real difficulties with YCC payrolls and with those of new employees, often taking months for these to be properly paid. The problem of getting utility bills paid on time continued with penalties assessed and threats to cut off service. Although the 1983 public hunt schedule was more realistic, there is still the feeling throughout this locality that there is too much hunting and that hunts are overlong, especially those for squirrels and rabbits. On the whole, the year was a good one and, like the farmers, we can always hope for a better one next time.

"THE END"



WATERCRESS DARTER NATIONAL WILDLIFE REFUGE
Bessemer, Alabama

ANNUAL NARRATIVE REPORT
Calendar Year 1983

NATIONAL WILDLIFE REFUGE SYSTEM
Fish and Wildlife Service
U. S. DEPARTMENT OF INTERIOR

WATERCRESS DARTER NATIONAL WILDLIFE REFUGE

HIGHLIGHTS

This seven-acre satellite of the Wheeler National Wildlife Refuge is located eighty-five miles from the parent station and is in the outskirts of Bessemer, Jefferson County, Alabama. The area is covered by a few large trees, brush and some open grasslands. The water area originally consisted only of Thomas Spring, about a quarter-acre in size, and the run below it. This spring is one of only three springs known to contain the endangered watercress darters.

The recovery team had originally recommended that one or more ponds be dug below the spring to increase darter habitat and insure survival. Fred Bagley, of the Endangered Species Office, Jackson, Mississippi, met with Wheeler Assistant Refuge Manager Richard Bays and representatives of the Soil Conservation Service concerning additional pond construction. It was agreed that the construction of more than one additional pond was impractical, and SCS drew up plans for this second pond. Bids were solicited for this construction, but those received were considered over-priced, and it was decided to proceed with this by forced account.

During the third week of August, Thomas Hudson, Eufaula National Wildlife Refuge, reached the site with a D-3 bulldozer and immediately began preliminary clearing. On August 23, Bays and mechanic Homer Blackwood delivered a TD-15 bulldozer to the site and left this with Hudson. Overwet soil proved a real problem and eventually, an excavator was rented to complete the job. The final result was a second pond fully a quarter-acre in size along with recommended control structures. This pond was promptly filled by the run from Thomas Spring. However, huge spoil piles resulted from this construction, and these were too wet for spreading. On November 8 and 9, Bays and Engineering Equipment Operator Virgil McWilliams returned with the TD-15 bulldozer and were able to spread parts of these piles. Interiors remained overwet and cannot be spread until a dry period occurs in 1984. (See photo on following page).

Thomas Spring is now heavily vegetated, though with Nitella, Chara, etc., but with little or no watercress present. The grasscarp are gone. Presumably, the darter population is intact, though this has never been verified. Throughout the year, Wheeler Refuge employees inspected this satellite intermittently as opportunity offered. It has been regularly monitored by Mr. Charles Leek, the adjoining resident, and by Mr. Charles Brasfield, a retired individual and active Audubon Society member who lives nearby. Although funds for pond construction were made available by the Jackson, Mississippi Endangered Species Office, there were no funds to cover personnel time spent on inspection trips and this was charged to project 1220. (See photo on following page.)



Virgil McWilliams on TD-15 spreading spoil pile near new pond. (November, 1983-1-RMB)



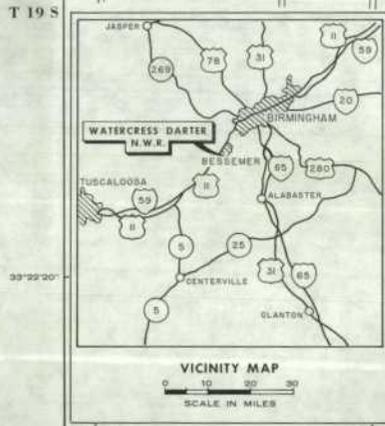
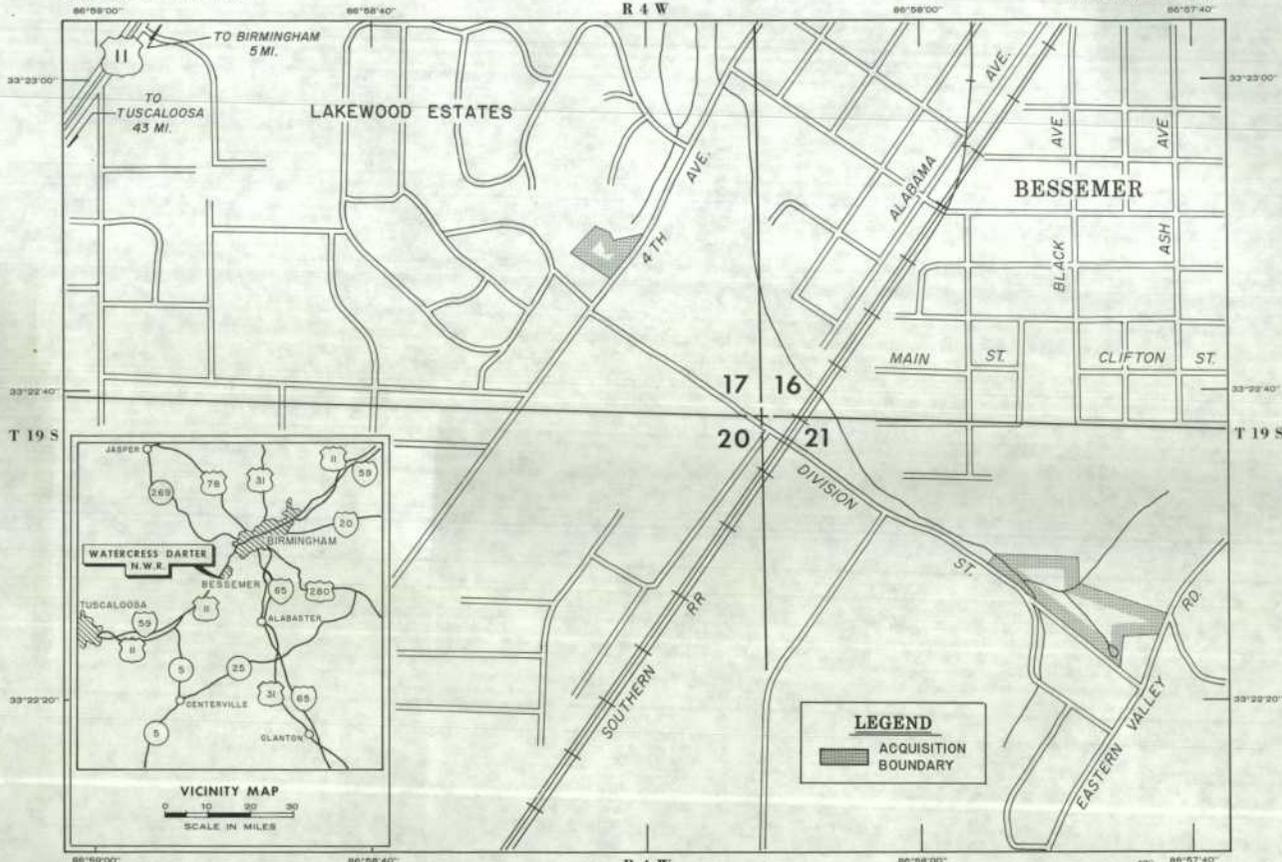
Thomas Spring with vegetation and fall leaves. (November, 1983-2-RMB)

WATERCRESS DARTER NATIONAL WILDLIFE REFUGE

UNITED STATES
DEPARTMENT OF THE INTERIOR

JEFFERSON COUNTY, ALABAMA

UNITED STATES
FISH AND WILDLIFE SERVICE



LEGEND

ACQUISITION BOUNDARY

COMPILED IN THE DIVISION OF REALTY
FROM SURVEYS BY U.S.G.S.



48°
 True North
 Magnetic N
 MEAN DECLINATION
 1981

BLOWING WIND CAVE NATIONAL WILDLIFE REFUGE
Scottsboro, Alabama

ANNUAL NARRATIVE REPORT
Calendar Year 1983

NATIONAL WILDLIFE REFUGE SYSTEM
Fish and Wildlife Service
U. S. DEPARTMENT OF INTERIOR

BLOWING WIND CAVE NATIONAL WILDLIFE REFUGE

HIGHLIGHTS

This 264-acre wooded tract, located in Jackson County, Alabama, seven miles west of the small city of Scottsboro was established in 1978. It includes a large cave with entrances at two levels that shelters a huge summering colony of the endangered gray bats and a small hibernating colony of the endangered Indiana bat and was established to protect these species.

The dwelling on the tract was occupied by Michael Banzhoff, Jackson County Forester, throughout the year, and Mr. Banzhoff has proved an excellent and conscientious custodian. In May, he reported that one of the metal bars of the upper entrance barricade had been sawn through and an entry forced. Refuge employees promptly repaired this.



Upper cave entrance. (November, 1983-3-RMB)

On June 1, Research Biologist George Haas and his assistant, John Seginek, accompanied by Wheeler Refuge Manager Trainee Anita Bowman, and Student Conservation Association volunteer Andrew Jenkins conducted a twilight gray bat inventory, estimating 274,000. However, in order to obtain a better comparison with the August, 1982 count, a second inventory was made on August 1 by Haas assisted by Wheeler ORP Larry Masters. This showed 386,000 gray bats present. This can be compared with the August 2, 1982 count of 360,000, an increase of slightly more than 7 percent.

Although Banzhoff has done an excellent job of cleaning up this tract and burning the woody debris remaining from demolished buildings, Wheeler Assistant Refuge Manager Richard Bays and several YCC enrollees visited it on July 12 and removed a large truck load of old metal.



Lower cave entrance. This is the one used by the majority of the bats. (November, 1983-4-RMB)

Banzhoff obtained approval to use the tract as a Future Farmers of America demonstration forest and has proceeded with this, including some pruning, planting of woody species of wildlife food value in remaining openings, etc. Public hunting on the tract has been intergrated with that on the adjoining Sauty Creek State Waterfowl Refuge.

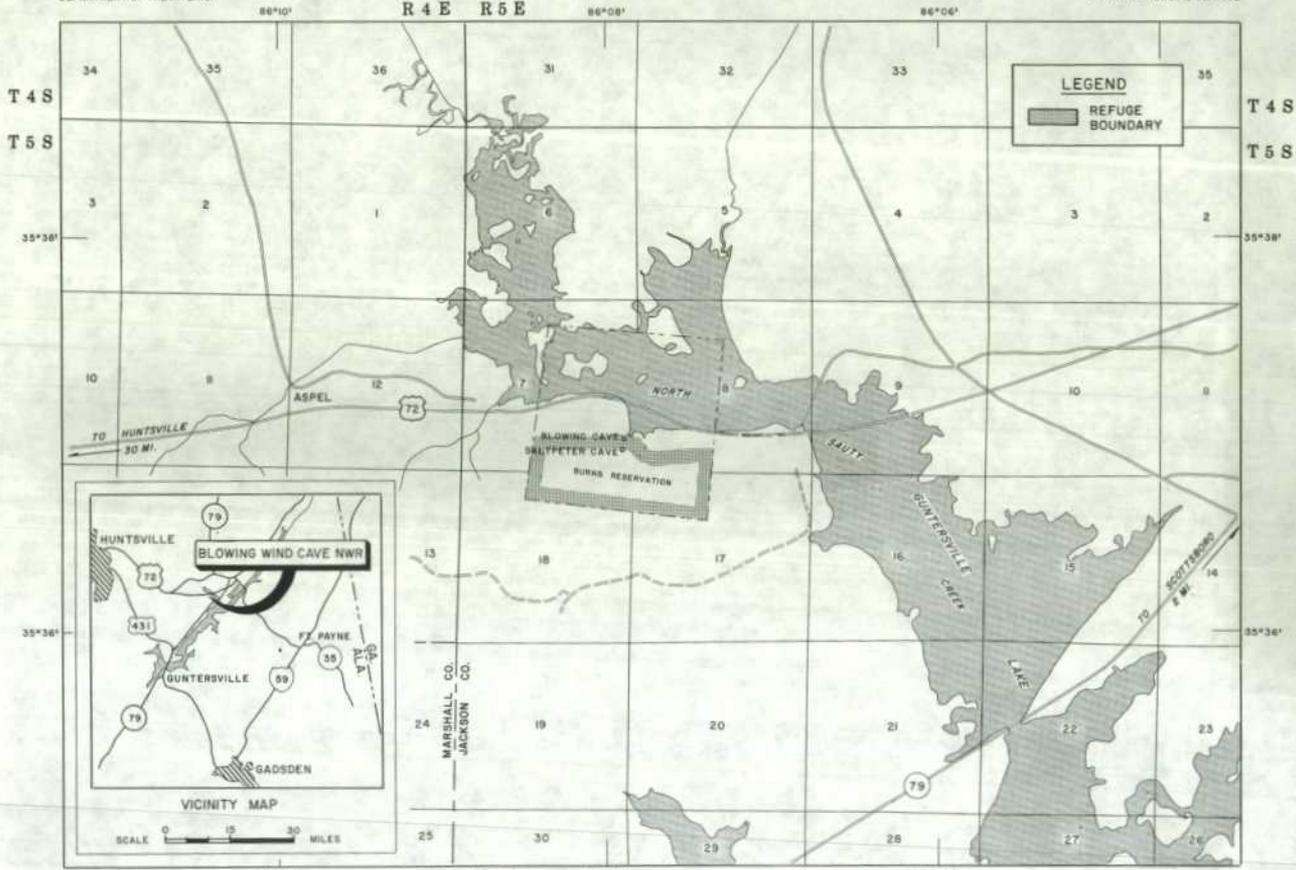
Wheeler Refuge personnel visited this satellite, about seventy-five miles from the parent refuge, regularly throughout the year. No endangered species funds were available during FY-1982 and FY-1983 and personnel time was charged to project 1220.

BLOWING WIND CAVE NATIONAL WILDLIFE REFUGE

UNITED STATES
DEPARTMENT OF THE INTERIOR

JACKSON COUNTY, ALABAMA

UNITED STATES
FISH AND WILDLIFE SERVICE



LEGEND

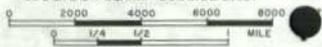
REFUGE BOUNDARY



COMPILED IN THE DIVISION OF REALTY
FROM SURVEYS U.S.G.O.S.

ATLANTA, GEORGIA AUGUST 1977

R 4 E R 5 E HUNTSVILLE MERIDIAN



TRUE NORTH
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1977

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FERN CAVE NATIONAL WILDLIFE REFUGE
Paint Rock, Alabama

ANNUAL NARRATIVE REPORT
Calendar Year 1983

NATIONAL WILDLIFE REFUGE SYSTEM
Fish and Wildlife Service
U. S. DEPARTMENT OF INTERIOR

FERN CAVE NATIONAL WILDLIFE REFUGE

HIGHLIGHTS

The Fern Cave National Wildlife Refuge, a satellite of the Wheeler National Wildlife Refuge and about forty miles distant, is located in Jackson County, Alabama about two miles north of the community of Paint Rock. Established in 1981, it covers 199 acres of wooded hilltop and includes four entrances of a huge cave complex. This shelters a hibernating colony of approximately a million and a half endangered gray bats and smaller numbers of the endangered Indiana bats. It was established to protect these species.

Again, no hunting was allowed on this tract. Permits were issued to a number of speleological groups to tour those parts of the cave complex not used by hibernating bats. For safety reasons, a copy of each permit was forwarded to the Huntsville office of the National Speleological Society. The previously installed gate across the approach road was kept locked throughout the year.

On April 12, Wheeler Assistant Refuge Manager Richard Bays, ORP Carolyn Garrett and Student Conservation Association volunteer Andrew Jenkins helped Fred Bagley, of the Jackson, Mississippi Endangered Species Office install appropriate signs, previously prepared by that office,



Richard Bays installing sign at Johnston entrance.
(April, 1983-5-CRG)

at the Johnston and Morgue entrances. On July 12, Bays and several CETA summer workers cleaned up a large rubbish dump that had become established prior to the installation of the locked gate. On August 2,



CETA summer workers removing litter from Fern Cave tract.
(August, 1983-6-RMB)

Wheeler ORP Larry Masters helped Research Biologist George Haas and his assistant, John Seginek, conduct a twilight bat count at the Johnston entrance. This showed about 500 gray bats using that entrance and is interesting because it indicates the recent establishment of a bachelor or maternity colony in this cave, previously used only as a hibernaculum. There have been no recent efforts to determine hibernating numbers.

Wheeler Refuge employees visited this site regularly throughout the year. No FY-1982 or FY-1983 endangered species funds were available and personnel time has been charged to project 1220.

