REVIEW AND APPROVALS

WHEELER NATIONAL WILDLIFE REFUGE

Decatur, Alabama

ANNUAL NARRATIVE REPORT

Calendar Year 1984

Refuge Manager	Date	Refuge Supervisor Review	Date
02-27-85		3-19-85	

Regional Office Approval — Date

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 200,000. 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 AM until 4:30 PM, the Wildlife Interpretive Center Wednesdays through Sundays, 10:00 AM until 5:00 PM.

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.

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A. HIGHLIGHTS

Although the weather extremes of 1984 were a bit more docile than those of 1983, they were severe enough. There were single digit temperatures in January, another May flood, a serious late summer drought, an unprecedently early killing frost during the first week of October, and unprecedently mild weather in December. Despite all this, agricultural crop production was over 40 percent above that of 1983, and the fall mass crop above normal. (Section B and E.1).

There were several departures from the previous pattern of refuge administration. Enforcement of the Archaelogical Resources Protection Act and the corresponding department regulations was begun. (Section K). Dewatered land was switched from cropland to moist soil management. (Section F.2). Sixty percent of the corn crop was left standing, no food was placed around the Observation Building and waterfowl trapping was limited to a single site along the White Springs Dike throughout the waterfowl hunting seasons. (Sections F.4 and G.16). 1984 saw Wheeler's highest goose numbers in 15 years, about 40,000, although duck numbers were pathetically low and especially so during the fall and early winter months. (Section G.3.A). The first dove hunts ever permitted on this refuge were held in September.

Where personnel were concerned, a serious off-duty accident on May 29 incapacitated Maintenance Worker James Ammons for the remainder of the year. (Section E.1). ORP Lawrence J. Masters and Assistant Manager Anita Bowman were transferred to other stations, while Jimmie R. Cook was moved to Wheeler as Assistant Manager. Assistant Manager Richard M. Bays and Administrative Assistant Harvie L. Fowler were reclassified to Forester and Park Technician respectively. There were two new hirings, Molly C. Grisham as Secretary (Typing) and Teresa Adams as Park Aid. (Section E.1).

There were no official accidents, no major breakdowns and no insurmountable problems, so 1984 proved a good year and a better one than 1983. (Section E.6).

B. CLIMATIC CONDITIONS

The extreme cold of December 1983, continued into early January 1984, with the low of the year recorded at five degrees Farenheit. There were alternating cold and warmer spells with moderate rainfall until nearly nine inches of rain fell in late April and early May that resulted in a major flood May 4 through May 18, a flood that drowned several hundred acres of early-planted corn, completely overflowed both dewatered units and much of the Refuge's cropland and did some damage to roads and fills. Rainfall was reasonably well spaced through June and July, but a drought begain in mid-August and there was no measurable precipitation during the month of September.



Photo shows pines that have had dirt washed from root systems by former floods. (Photo by Bays - February 1984)

This drought continued until heavy rains came in late October. The drought resulted in Alabama declaring an emergency closure of hunting seasons that continued to October 10. An unusually early killing frost occurred October 3 and resulted in some crop damage. The weather for the remainder of the year was reasonably normal, although the latter half of December was unseasonably warm and high temperature records were set on several dates. Comparing the weather of 1984 with that of 1983, there were fewer extremes. Temperatures ranged from five degrees to the mid-ninety's and, though there were several snows, none remained on the ground for more than a few hours. Conditions for farming and other outdoor work were far more favorable.

E. ADMINISTRATION

1. Personnel



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Personnel

1. Thomas Z. Atkeson.....Refuge Manager, GS-12, PFT, EOD 06/14/39
2. Jimmie R. Cook.....Assistant Refuge Manager, GS-11, PFT, EOD 09/02/84
3. Richard M. Bays.....Forester, GS-11, PFT, EOD 07/01/63
4. Harvie L. Fowler.....Park Technician (LE), GS-09, PFT, EOD 05/15/61
5. Carolyn R. Garrett.....Outdoor Recreation Planner, GS-7, PFT, EOD 10/09/79
6. Roberta F. Blankenship.....Biological Technician, GS-06, PFT, EOD 06/28/82
7. Molly C. Grisham.....Secretary (Typing), GS-05, PFT, EOD 05/14/84
8. Cynthia R. Thomas.....Park Aid, GS-03, PFT, EOD 07/10/83
9. Teresa J. Adams.....Park Aid, GS-02, PFT, EOD 12/23/84
10. Melody M. Maxwell.....Park Aid, GS-02, Temporary, EOD 10/02/83
11. James H. Blackwood.....Heavy Mobile Equipment Mechanic, WS-11, PFT, EOD 11/07/51
12. Virgil V. McWilliams.....Engineering Equipment Operator, WS-08, PFT, EOD 08/28/72
13. James D. Ammons.....Maintenance Worker, WS-08, PFT, EOD 12/17/79
14. Randolph S. Isbister.....Maintenance Worker, WS-08, PFT, EOD 08/07/83

Effective April 1, longtime Administrative Assistant Harvie L. Fowler, GS-9, was reclassified to Park Technician, Law Enforcement, GS-7. To fill the vacancy created by this reclassification, Ms. Molly C. Grisham, a transfer from the U.S. Army Corps of Engineers, began duty as Secretary (Typing), GS-5 on May 14. Ms. Anita Bowman, Assistant Refuge Manager, GS-5, was transferred to Yazoo NWR effective June 10. Assistant Manager Richard M. Bays, GS-11, was reclassified to Forester, GS-11 effective June 24. Senior ORP L. J. Masters, GS-11, was transferred to Tennessee NWR effective August 17. Assistant Manager J. R. Cook, GS-9, Tennessee NWR, was promoted to Assistant Manager GS-11 and transferred to Wheeler NWR effective September 10. Mrs. Cynthia R. Thomas, Park Aid, GS-2, was promoted to Park Aid GS-3 effective September 16. Mrs. Carolyn R. Garrett, ORP, GS-7 was given a temporary promotion to ORP, GS-9 effective December 9. Ms. Teresa Adams was hired as Park Aid GS-2 effective December 24. Maintenance Worker James Ammons suffered serious injuries in an off-duty motorcycle accident on May 29 and has been on annual and sick leave and presently on leave without pay since. Wheeler is presently allotted 14 FTE's. There is one authorized slot presently unfilled, an Assistant Manager GS-9.

	(Number of Employees)			
	Permanent			Total
	Full-Time	Part-Time	Temporary	FTE
FY84	12	0	1	13
FY83	12	0	3	15
FY82	8	1	1	10
FY81	12	1	0	13
FY80	11	1	0	12

2. Youth Programs

A ten enrollee YCC program, five males and five females with a female youth leader, began June 11. Two carryall vehicles were procured on free loan from Redstone Arsenal to transport enrollees. No staff was hired. The program was scheduled to terminate August 5, although several enrollees were kept longer to make up missed days, the last of these on August 24. This was a highly successful program with high-quality, conscientious enrollees, no disciplinary problems and no accidents. Enrollees repainted the Cypress Pond Boardwalk, gave much needed help at the Wildlife Interpretive Center, cleaned up rubbish refuge wide, removed beaver dams, cut back foot trails and road edges and helped refuge employees with a multitude of miscellaneous tasks.

5. Funding

Total station funding for FY84 ($420,000) consisted of the following: Wildlife Resources 1260 - $406,000, Expenses for Sales 6860 - $10,000 and Quarters Maintenance 1994 - $4,000. Salaries, fixed costs and vehicle expenditures left little 1260 money for other projects.

Expenses for Sales Activities were directed toward thinning some pine stands for an initial thinning resulting in removal of 581 cords pine pulpwood with revenue of $9,054.94.

Quarters Maintenance funding was used to upgrade the electrical and energy efficiency of the two residences.

The following resume' shows funding from FY80 through FY84:

	FY80	FY81	FY82	FY83	FY84
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

There were no accidents involving refuge personnel nor YCC enrollees, and no accidents occurred during refuge hunts. Maintenance Worker James Ammons was the victim of an off-duty motorcycle accident May 29, sustained serious injuries and was off duty the remainder of the year. Roll bars were installed on the Refuge's Ford tractor-boomaxe combination.

A safety committee has been kept active and monthly safety meetings held. Although there were efforts to maintain interest by varying these, the majority involved safety discussions and a film. All worthwhile safety equipment is on hand, including fire resistant clothing.

7. Technical Assistance

Refuge personnel have continued to work closely with the DDT Review Panel concerning followup of the settlement with The Olin Corporation. Refuge employees have also been involved with Alabama Highway Department officials concerning the relocation of the Beaverdam Swamp Boardwalk and mitigation tracts for the I-565 crossing of the Beaverdam Creek Arm of the refuge. There were also contacts with the Huntsville-Madison Port Authority concerning the proposed Triana Barge Canal and mitigation for this. In addition, there were the usual contacts with boy scouts and their officials concerning nature merit badge requirements and eagle scout conservation projects. Carolyn Garrett continued on the planning board of the Decatur Wildfowl Festival and was one of the coordinators of this November Festival. Wood duck nest box plans were provided to a number of individuals and organizations, and boxes constructed and donated by scout troops were erected on the refuge by refuge employees.

F. HABITAT MANAGEMENT

1. General

Although the May flood destroyed several hundred acres of young corn and subsided too late for corn replanting, agricultural crops were generally good with overall yields about 40% above those of 1983. The mast crop was above average. TVA continued efforts to control hydrilla in Guntersville Reservoir, and none has appeared in Wheeler Reservoir nor on this refuge. Various aquatic plants, some desirable, continued to spread through refuge waters.

2. Wetlands

As usual, dewatered units were gravity drained as low as possible prior to reservoir refilling that began in late March. With this the third and last year of TVA's experimental early pumping program, actual pumping began in early April, but the May flood completely overflowed and refilled these units. After the flood subsided, pumping was resumed and the water was within ditches by mid-June, and remained so throughout summer and early fall.

The decision was made at the Regional level to withhold both cooperative and forced account farming on the majority of the unit acreage and to turn, instead, to moist soil management. Accordingly, none of the White Springs Unit was farmed, other than about 40 acres of milo previously committed to a cooperator. As a control, the limited acreage in Rockhouse Slough was planted to milo by a cooperator, though none of Buckeye Slough was planted, other than approximately 25 acres of milo previously committed cooperatively.

On July 12, Supervisor Sam Drake and Biologist Don Orr examined these units and found considerable Paspalum, eleocharis and other plants of waterfowl food value present, although there was considerable cockleburr and coffee-weed and alligator weed was spreading rapidly in the absence of cultivation and becoming a real threat. They recommended a series of trial plots, some disk, some disk and planted to millet, some mowed and some treated with herbicides. This was done and some of the worst cockleburr stretches of the White Springs Unit were also herbicide treated.

Attempt was made to evaluate the situation in fall after reflooding occurred. Although there was some duck use in the moist soil portion, the majority was concentrated in the limited milo plantings. Several ducks were collected and crop contents examined. The majority of these contents were milo, though a few contained considerable Paspalum along with unidentified smaller seeds. Present planning includes withholding all farming from these units, although portions may be disk early in an effort to hold down woody reversion and slow the spread of alligator weed.

3. Forests

With an improved pulpwood market and following a program begun in 1983, all of the overthick pine plantations along the south boundary truck trail between Black Branch and Cave Springs were thinned in 1984. This resulted



Truck removes pulpwood from refuge sale. Several curves of this refuge truck trail required widening to accommodate longbed trucks. (January 1984 - Bays)

in the sale of 589 cords of pulpwood with a total return of $9,054.94. A bark beetle infestation appeared in a small stand near Gin House Branch, and this will result in a heavy salvage cutting in 1985. Forester Richard Bays has made preparations for sales throughout the compartment encompassing the entire Flint Creek Embayment and Village Creek Arm, and these sales are scheduled for 1985. The pending construction of Interstate 565 across the Beaverdam Creek Arm of the refuge made the salvage of merchantable timber on this approximately eight acres desirable. However, the majority of this was Tupelo gum in an extremely wet situation, and no buyer could be found, although seven and a half cords of firewood were sold from the fringes for a total return of $75.00. There was no forest planting or TSI work during the year and no planned burning.

4. Croplands

There were three major departures from Wheeler's cropland management practices of the past. The majority of the dewatered acreage was devoted to moist soil management, rather than to row and broadcast crops. A thousand acres of soybeans were oversown to wheat by airplane on contract, and 60% of the rental corn was left standing through the waterfowl hunting season. In all, 33 cooperators kept 4,021 acres in various crops. To satisfy ASCS requirements, 505 acres were deliberately fallowed. Crop production was at least normal and considerably above 1983 totals. In all, farmers produced 167,399 bushels of seed and grain valued at $555,770.00, and this exceeded 1983 production by over 43%. The amount deliberately made available to wildlife totaled 43,049 bushels, and this exceeded the amount available in 1983 by over 40%. Refuge



Richard Bays loads wheat into plane hopper for soybean oversowing. A thousand acres of wheat, sown this way, provided excellent browse for geese, deer and rabbits. (September 1984 - Blackwood)

wide per acre averages included corn 87 bushels, soybeans 22 bushels, grain sorghum 58 bushels and wheet 40 bushels.

Forced account farming was reduced and accounted for only 16 acres of millet planted on the experimental plots in the White Springs Unit and 100 acres of wheat and vetch mixture planted on fallowed fields. Total green stuff available to geese for fall and winter, including wheat sown by cooperators for 1985 harvest, wheat and vetch mixtures sown by cooperators as cover crops, that planted by forced account and the contract oversowing of 1,000 acres of soybeans amounted to 2,076 acres. This is approximately a 37% increase in the available acreage of goose forage as compared with 1983. There were no cash crop rentals in 1984 and no transfers of grain or seed to other stations.

7. Grazing

Pasture at this station is limited to a few non-row crop locations. All is intergrated into cooperative farming agreements. There are no cash rentals, and pasture value is taken as additional crops left in place for wildlife use. All pastures were overflowed by the May flood and badly affected by the late summer and early fall drought. The pasture period here is from mid-April to November 1. Pasture totaled 135 acres and resulted in 484 AUM's.

8. Haying

As is the case with pasture, hay is intergrated into cooperative farming agreements with the rent taken as additional hard food left for wildlife. Hay is restricted to cut-and-fill shelves and other non-row crop locations. In 1984, there were 72 acres of hay cut that resulted in 83 tons saved.

9. Fire Management

There was no planned burning. Appropriate personnel have completed fire training, and adequate fire suppressing equipment, including retardant clothing, is on hand. In 1984, there were four small fires that required suppression by refuge employees, and these totaled slightly more than 16 acres. These were surface fires that did little damage. An agreement is now in effect with the State of Alabama and with local counties that will place their reporting and suppressions systems at refuge disposal.

10. Pest Control

Although the blackbird and crow problems continued locally, refuge employees were not involved in any control efforts in 1984. Some nuisance animal control by local trappers, aimed at controlling muskrats in the display pool and beavers in dewatered units, continued through the 1983-84 fur trapping season. This was not resumed during the 1984-85 trapping season, due to the ineffectiveness of this program with present low beaver pelt prices. Some groundhog damage to refuge crops continued, though there has been no deer damage of any significance.

Direct herbicide control by refuge employees was limited to the use of small amounts of Weed-No-More, a 2-4-D compound, on patches of undesirable vegetation on the lawns on both the Interpretive Center and headquarters complexes, and to the wic-bar treatment of about 40 acres of cockleburr and alligator weed in parts of the White Springs Dewatered Unit. This latter required about 10 gallons of Rodeo and 3 gallons of 2-4-D. Some warfaring compound was used to protect grain and other materials stored in headquarters buildings from damage by rats and mice.

Johnson grass continues a major agricultural problem, and farmers were encouraged to use both maximum mechanical means and the newer herbicides in efforts to keep this under control. With dependence on moist soil management in dewatered units, alligator weed, cockleburr and coffeeweeds are certain to be major problems there and will require more herbicide use by refuge employees in the future. Insects were not a major problem this year. There was some damage to grain sorghum by army worms, but this was controlled by cooperators using Sevin and other approved insecticides.

12. Wilderness and Special Areas

Although there are no wilderness areas, there are four public use and one research natural areas. These continued in good order throughout the year. However, the present construction of Interstate 565 across the Beaverdam

Creek Arm of the refuge will eliminate access to the Beaverdam Swamp Boardwalk. This extends into the Beaverdam Tupelo Swamp, both a public use natural area and a National Natural Landmark. The Alabama Highway Department has agreed to move the parking lot for this boardwalk to the eastern side of the creek and to construct an approach trail and duplicate boardwalk on that side of the creek extending southward and westward to connect with the present boardwalk. Construction will not begin until late summer 1985.

G. WILDLIFE

1. Wildlife Diversity

The only habitat changes that would likely affect wildlife diversity were the conversion of dewatered units from actual farming to moist soil management and the fallowing of additional acreage, so providing more weed and grass cover. No new species were added to the refuge list, although there were a number of unusual sightings including a whimbrel, a sandhill crane, tundra swans, white fronted geese, Eurasian wigeons, a flock of white pelicans and both white-winged and black scoters. There were a number of early and late records of more common species. The revised refuge bird list, including 304 species, was reprinted and received during the year.

2. Endangered and/or Threatened Species

There were no bald eagle sightings during the late winter, but these resumed in late August and continued throughout the remainder of the year and are believed to represent at least four individuals. Two were noted on the December 15 Christmas count. There were golden eagle sightings in both October and November, probably the same individual. There were only three Peregrine Falcon sightings, all in October, though at least two individuals were involved. Osprey sightings were definitely more numerous during the year, not only during migration periods, but there were regular sightings through the warm weather months and one unusually late sighting on December 15. These may well be a result of local hackings out. A lone wood stork was noted July 28 and 29, the first local sighting since 1955. Although piping plovers occasionally occur here, there were no 1984 sightings. On July 6, Biologists Steve Christman and Fred Bagley conducted a twilight bat count at the Cave Springs Cave and estimated 20,000 gray bats present, double the 1983 count. Gray bats seem to be doing well locally. As mentioned in the satellite reports, Fern Cave is not only serving as a hibernaculum, but is also harboring a summering colony that is increasing steadily, and the Blowing Wind Cave population is healthy and increasing. There were a number of alligator sightings during the warm weather period, although there is no proof of local reproduction. The watercress darter population seems to be doing well.

3. Waterfowl

A. Geese and Swans

A number of Tundra swans were present at the beginning of the year, and the

count reached 34 in mid-January, though they disappeared soon after. Swan sightings resumed in late October and continued to the end of the year, though the number of individuals present never exceeded three. It is possible that the increase in underwater vegetation on this refuge may result in some regular wintering by swans.

The first air count of the year, January 3, showed 33,000 Canada geese and 2,000 snow geese, most of these blue phase, present. The next air count, January 11, showed 38,000 Canada geese and 2,000 snow geese present. This total count of 40,000 geese is the highest here since 1965 and approximately 33% above the 1983 figures, though this may well have been due to the extreme cold of December 1983 and January 1984. Subsequent counts showed numbers dropping rapidly as northward migration began.

As usual, about two dozen, probably cripples, remained through the summer, though there was no reproduction. The first incoming birds appeared in mid-September. October numbers seemed unusually high, but these soon leveled off and the peak of the fall was 25,000 Canada geese and 2,500 snow geese. This is approximately a 20% increase among Canada geese, and 15% among snow geese compared with the fall peak of 1983. A close watch was kept for collared Canada geese throughout the fall, and those found reported to proper officials. In all, 5 orange, 2 blue and 2 yellow neck collars were noted. Although the decision to devote dewatered land to moist soil rather than to cropland management will have far more effect on ducks than on geese, the decision to level no more than 40 percent of the corn crop certainly affects geese. By the end of December 1984, all readily-available hard food was gone, and geese were making only limited use of standing corn. A few white fronted geese were present during the year, though these never numbered more than 23 individuals.

B. Ducks

Wood duck nest boxes donated by local groups were erected and all existing boxes repaired, rebedded and readied for spring nesting in late February. This gave a total of 439 considered available for nesting use. However, many of Wheeler's boxes are old and deteriorating rapidly. When these boxes were rechecked in early fall to determine the degree of summer use, only 336 were considered usable with 174 of these showing definite indications of duck use. This totals 52% use, a gratifying increase over the only 35.6% use experienced in 1983. (See next page)

The January peak came late, January 11, with a count of 30,000 total ducks. Due probably to the severe cold of December and January, this exceeded the January 1983 peak by approximately 15%. Beginning in late January, numbers dropped sharply. Warm weather numbers seemed normal, although the May flood doubtless ruined many mallard and black duck nests. Fall counts were disappointingly low with November and early December numbers the lowest in 40 years. There was some influx in late December with the peak reaching 21,500. This is approximately 20% below the fall peak in 1983, and duck numbers were exceptionally low then. This locality has experienced steadily declining duck numbers for the past 20 years and local sportsmen and bird enthusiasts are much concerned. Mallard numbers seem especially low, and wigeon numbers

ANNUAL NARRATIVE REPORT FORM
WOOD DUCK BOX PROGRAM INFORMATION

REFUGE: Wheeler

NESTING YEAR: 1984

	NUMBER	PERCENT
Total Usable boxes	336	
Estimated boxes used by wood ducks	174	52%
Estimated boxes used by other ducks	0	0
Estimated boxes used by other wildlife	15	.04%
Estimated wood duck broods produced	174	
Estimated total wood ducks hatched	1392	
Estimated wood ducks surviving to flight stage*	696	*

Plans for next year (indicated number):

_____ more boxes

_____ fewer boxes

__X__ no change

REMARKS: _____

*If survival rate is other than 50%, please explain rationale in remarks section.

proportionally high. Diving duck numbers, never abundant here, have held up well with ringnecks especially numerous. Bag checks by the adjoining Swan Creek State Management Area indicated ringnecks, wood ducks and gadwalls, in that order, leading in hunters' bags. No unusual species were noted during the year.

C. Coots

Coot numbers have been increasing in recent years, but declined in 1984 with an October peak of only 5,000, a 30 percent decline compared with a similiar peak in 1983. Numbers dwindled following this fall migration peak, but about 1,000 remained through December.

4. Marsh and Water Birds

A sandhill crane sighting by J. R. Cook on October 18 was the fourth in the history of this refuge. A least bittern was found on a nest containing one egg in June, so varifying the assumption that this species nest locally. Recovering from an almost total absence a decade ago, there are now about 250 double crested cormorants using the locality, a 150% increase since 1983. All wading bird numbers continue low, and there has been no resumption of local nesting. All rail numbers seem unusually low.

5. Shorebirds, Gulls, Terns and Allied Species

The refuge continued to cooperate with the Auburn University woodcock study. These birds seem somewhat more numerous in February 1984 than in February 1983, although only a single nest was located. The fall flight appeared normal. There were no significant changes in the numbers of snipe and other shore birds nor among the gulls and terns using the locality.

6. Raptors

Although redshouldered hawks, abundant before DDT contamination, continue rare here, all other species appear normal. No changes were noted among owls. The refuge has continued its arrangement whereby the injured raptors and other wild creatures frequently brought to headquarters or to the Interpretive Center are picked up by a Birmingham news truck on its daily visit to Decatur and left by that truck with the Wildlife Rescue Service in Birmingham. This arrangement has had considerable public relations value.

7. Other Migratory Birds

No changes were noted among the numbers or behaviour of other migratory species.

8. Game Mammals

The long, narrow configuration of this refuge probably insures that no deer range wholly within the refuge, so are subject to outside hunting. Refuge deer numbers seem reasonably stable, and there have been no problems. Gray and fox squirrel numbers have definitely improved from the low experienced in

the late 1970's, but rabbit numbers continue extremely low. Raccoon and opossum numbers seem fully normal. There were no significant changes in the numbers or behavior of other mammals during the year.

10. Other Resident Wildlife

Other than a continued coyote increase, there were no changes among other resident species.



Gray Fox. Both gray and red foxes are common on the Refuge. (October 1984 - Thomas)

11. Fishery Resources

There were no significant changes in local species composition, although fishing success was definitely below the high success rate of 1983. TVA's stocking of unsexed grass carp in a portion of Guntersville Reservoir in an effort to control Hydrilla has caused some concern that these may spread into Wheeler Reservoir and that they may be able to reproduce. The State has continued its stocking of both Stripped Sea Bass and the hybrids between these and White Lake Bass in Refuge waters.

15. Animal Control

No bird control efforts were necessary during the year. Some crop damage by groundhogs continued, especially to young soybeans, and beavers continued a nuisance by plugging road culverts and daming drainage ditches in dewatered units. Considerable time was spent by refuge employees removing dams and

and unstopping culverts. TVA crews dynamited dams on parts of the refuge as a mosquito control measure. The primary animal control was conducted by issuing trapping permits for the 1983-84 fur trapping season to four cooperators. These removed 17 beavers, 1 coyote, 9 red foxes, 14 gray foxes, 9 muskrats, (from the display pool) and 9 skunks. With beaver removal the primary objective and with beaver pelt prices so low that trappers make no real effort to catch them, no trapping permits were issued for the 1984-85 fur trapping season.

16. Marking and Banding

Waterfowl banding was the only marking done during the year. As usual, this included post season duck banding with special emphasis given ringneck banding, efforts to band geese throughout the cool weather months and the banding of young wood ducks in late summer. Perfecting techniques, the banding of ringnecks and of wood ducks was the most successful in the history of the refuge, and goose banding showed at least a considerable improvement over that of 1983. A total of 1,010 mallards, 8 mallard/black duck hybrid, 134 black ducks, 289 ringnecks, 225 wood ducks, 151 Canada geese, 198 wigeons, 5 pintails, 108 redheads, 4 canvasbacks, and 7 coots were banded resulting in a grand total of 2,139 waterfowl.



A snapper, borrowed from a local farmer, was used to pull ear corn for goose trapping. Photo shows Equipment Operator V. V. McWilliams on tractor (Photo by Cook - December 1984)

In early fall, the Special-Agent-in-Charge and Refuge Supervisor determined that the only location that could be used for in-season goose banding that would not constitute a baited situation was a location midway along the White Springs Dike. This was a site that had been tried in past years and discarded as impractical. A trap was located there in late October and kept baited and

watched throughout the remainder of the year, though with no results.

In early fall, a wood duck dispersal study was begun under the sponsorship of Dr. Guy Baldesarre, Auburn University, and utilizing graduate student John Thompson. About 160 young wood ducks were trapped and marked with orange colored, plastic wing streamers and 20 were fitted with telemeters. Thompson closely monitored these throughout the remainder of the year.

17. Disease, Prevention and Control

No trichomoniasis nor pox was noted among morning doves, and there were no instances of waterfowl diseases of any type. There were no indications of hemorrhagic disease among deer, nor of diseases among any other wildlife forms. There has been some concern that the attraction of large numbers of waterfowl to the refuge's display pool could have the potential for a disease outbreak there. In early fall, the refuge was instructed to do only limited pre- and post-hunting season feeding on this pool, none during the hunting season.

H. PUBLIC USE

1. General

Sufficient personnel to staff the I&R program properly continued a problem. The year began with Senior ORP L. J. Masters, Carolyn Garrett and Cynthia Thomas as assigned personnel, helped by Melody Maxwell, employed part time under the "Stay-In-School" program. Lighter public use during the warm weather months and the beginning of the YCC program in June gave some relief. However, Masters was transferred in late summer leaving Mrs. Garrett in charge of the program with only Mrs. Thomas and the part time help of Ms. Maxwell. The employment of another Park Aid, Ms. Teresa Adams, in late December proved a real help.

The collapse of the classroom ceiling in late 1983, due to a frozen and burst overhead water pipe, required a complete ceiling replacement and other repairs. Later, a leaking roof drain of this same building made more repairs necessary. There were, in the course of the year, numerous minor repairs to both the Interpretive Center and the Observation Building, plus some additional landscaping. Other public use facilities required their usual maintenance. The granting of an easement for the I-565 crossing of the Beaverdam Creek arm will result in the eventual blockage of the approaches to the Beaverdam Swamp Boardwalk. The State Highway Department has agreed to relocate the parking lot of the boardwalk to eastern side of the creek, south of the highway, and to construct a new approach trail and adjacent boardwalk connecting with the eastern end of the present one, though the contract for this will not be let until August 1985.

There were 34,155 visits to the Interpretive Center during the year, 29,225 to the Observation Building. In all, there were 329 prearranged group visits that total 13,790 individuals, and these included universities, colleges, high and grade school classes, kindergarten groups, special education classes,



A burst waterpipe dissolved the sheetrock ceiling of the Interpretive Center's classroom. Photo by L. J. Masters - February 1984)

garden and sportsmen club groups, senior citizens groups, boy, girl, cub, browies and explorer scouts, etc. Several special seminars dealing with various natural history subjects were held. Thirty off-site programs were given to various schools and organizations. There were 36 field trials with 1,765 people attending, and these included both retriever and coon dog trials. Individual visitors came from virtually every state and from many foreign countries. The total visitation for the year is set at 586,644, with fishing leading all other recreational uses.

2. Outdoor Classrooms - Students

Using the refuge as an outdoor classroom, 2,743 students pursued various ecological and environmental studies. The most frequent and numerous users were Huntsville's Environmental Education studies groups, but Snead College, Athens State College and a number of high schools also participated.

3. Outdoor Classroom - Teachers

A single teachers workshop was held during the year with 182 participants. These, in turn, conducted various outdoor classes during subsequent visits.

4. Interpretive Foot Trails

Foot trails were maintained in good condition with rubbish policed up regularly and signs replaced, when necessary. YCC enrollees brushed these

back and added crushed stone to soft spots. Trails were regularly used with especially heavy use in spring and fall. On the Cypress Pond Trail, YCC enrollees built a short section of boardwalk across a corner of the Bays Pond to connect two branches of this trail. They also coated the flooring of



A short stretch of boardwalk was constructed over one of the small ponds. Photo shows R. M. Bays and YCC enrolles completing construction. (Photo by Maxwell - July 1984)

the main boardwalk with a non-slip compound for more secure footing during wet periods.

5. Interpretive Tour Routes

There were twenty conducted tours during the year involving 483 individuals. Although the majority were local school and garden club groups, these included an Environmental Interpretation Class from the U.S. Corps of Engineers, the DDT Review Panel, a group from the Birmingham Zoo and groups from five different colleges and universities. In addition, ten other groups were permitted to hold self-conducted tours.

6. Interpretive Exhibits/Demonstrations

In conjunction with local garden clubs, the refuge prepared a waterfowl exhibit that was displayed at the October Morgan County Fair. The refuge also prepared an exhibit, manned by Cynthia Thomas, for the Alabama Wildfowl Festival, and this brought many compliments from the public. Mrs. Thomas also sold Duck Stamps at this exhibit, selling out the entire refuge supply.



The refuge prepared and maintained a display at Decatur's Wildfowl Festival. Photo shows Park Aid Cynthia Thomas selling Duck Stamps. (Photo by Garrett - November 1984)



Fred Youngblood, of the Regional Office, serves as one of the judges of the Wildfowl Festival. (Photo by Garrett - November 1984)

Carolyn Garrett served on the planning committee for the Wildfowl Festival and, during the festival, served as one of it's coordinators. The songbird display, under modification near the end of 1983 was completed in early 1984 and formed one of the permanent displays at the Interpretive Center throughout the remainder of the year. A waterfowl identification poster was purchased and attractively mounted in the Observation Building, where it has provided a real aid to waterfowl identification and been much used by the public.

7. Other Interpretive Programs

Wildlife and conservation films, many of these Service films, were shown three times each Saturday, twice each Sunday throughout the year at the Wildlife Interpretive Center and were viewed by 5,000 individuals. Service films were also shown or loaned to a number of local schools and organizations. Special seminars were held at the Wildlife Interpretive Center dealing with reptiles, Indian culture, raptor rehabilitation and hunter safety. The Wildlife Intercenter was used as a meeting place by a number of groups including a service-



Several special seminars were held at the Interpretive Center. Photo shows small visitor admiring Indian handicraft. (Photo by Garrett - July 1984)

sponsored programatic fishery meeting, several meetings of the DDT Review Panel, one by the U.S. Forest Service, several meetings by science clubs and a statewide agricultural meeting. The refuge was visited by Birmingham, Muscle Shoals, Memphis and Nashville Chapter's of the Audubon Society. There were 21 off-site programs given to various schools and organizations. Refuge

visitors of the year were from 43 states and 9 foreign countries.

8. Hunting

Again, the heavy hunting schedule of past years was scaled down in an effort to reduce waterfowl disturbance and reverse the downward waterfowl trend here. The 1984-85 hunt schedule calls for two afternoon dove hunts, the first ever held on this refuge, to take place in September, a public squirrel hunt



Two dove hunts, the first ever held on this refuge, was scheduled in September. Photo shows Secretary Typist Molly Grisham issuing hunt permits while Atkeson loafs nearby. (Photo by Fowler - September 1984)

October 1-15, an archery deer hunt from October 13 - November 15, then no hunting of any type until the opening of a flintlock and bow deer hunt January 14, 1985 through January 31, a night hunt for raccoons and opossums throughout the month of February, and a rabbit hunt the last two weeks in February. As usual, approval was given the Army to integrate deer hunting on the refuge portion of the Redstone Arsenal Reservation with that of the reservation as a whole, provided half the permits were issued to civilians.

One of the afternoon dove hunts was held on the Beaverdam Peninsula on September 22, the other on the Upper and Lower Limestone Peninsulas September 29. With these, the first such hunts ever held on this refuge and with, in each case, all hunters funneled through single entrances, each hunter, upon leaving the field, was asked the number of doves bagged, the number crippled and the number of shots fired. Combined results of the two

hunts showed that 224 hunters bagged 498 doves, crippled 135 and fired 3,819 shots. The areas hunted were as broad as any found on this refuge. Nevertheless, it was estimated that about half the shot fired fell in water or on mudflats. This would compute over 119 pounds of lead deposited, and leads us to question the wisdom of dove hunting on any refuge area of the type configuration that Wheeler has.

A night hunt for raccoons and opossums was held throughout February 1984. This resulted in 1,700 participants, 10,000 hunting trips, 50,000 hunting hours and a bag of 1,400 raccoons and 200 opossums.

A rabbit hunt was held throughout February 1984, although refuge rabbit numbers continued unusually low. There were 600 hunters, 2,000 hunting trips, 9,000 hunting hours, and a bag of 700 cottontails and 50 swamp rabbits.

Although squirrel numbers have definitely recovered since the low of five years ago and a hunt was scheduled for the period October 1-15, extreme drought caused the State to declare an emergency closure of hunting seasons, due to high fire hazards, from October 1 through October 9. The hunt actually began October 10, so permitting only five hunting days. However, about 1,000 permits issued resulted in 1,500 hunting trips, 6,000 hunting hours and a bag of 2,000 gray and 50 fox squirrels. Although sharply curtailed from the original plan, the five hunting days seemed to satisfy the local demand. Again, cuterebra infestation was heavy, although somewhat less so than in 1983, and was estimated at 15 to 20 percent.

The year began with deer hunting on the refuge portion of the Redstone Reservation that continued intermittently through January. On the remainder of the refuge, there was a bow and flintlock hunt that began January 16 and continued through January 31. This hunt resulted in 13 deer taken, 9 with flintlocks and 4 with bows. The total refuge deer kill for the 1983-84 season, including those taken from the fall archery hunt, those on the January bow and flintlock hunt and those from hunts on the refuge portion of the Redstone Reservation, totaled 248 animals. Deer hunting was resumed in the fall of 1984 with an archery hunt that began October 15 and continued through November 15, although only three were taken.

Overall, the hunting situation was satisfactory, although the value of dove hunting here seems questionable and the rabbit hunt overlong, in view of limited rabbit numbers. Game was generally in good condition, and hunters reasonably well satisfied. There were no accidents, and, though there were a number of violations, most were minor. A wildfire or two that occurred during hunt periods may not have been hunt related.

9. Fishing

Fishing continued the heaviest single public use and accounted for about 350,000 visits during the year. Success was less high than in 1983. Again, a Kiddie Fishing Rodeo was held around the refuge's display pool with high attendance by youngsters, parents and grandparents, many prizes and refreshments donated by local merchants, no accidents and a good time had by all.

This is the second year of this Junior Rodeo and, hopefully, it can become a permanent feature.

10. Trapping

As discussed under Animal Control above, only limited trapping aimed at nuisance animal removal and involving four cooperating trappers occurred here. As a part of the 1983-84 season, this continued through February 20, 1984. However, due to the low value of beaver pelts and the reluctance of trappers to take these, no trapping was resumed during the 1984-85 season.

11. Wildlife Observation

The waterfowl concentration continues as Wheeler's major visitor attraction, and there is much photography connected with this. The decision to stop all feeding in the water around the Observation Building throughout the 1984-85 goose and duck hunting seasons resulted in few birds there for public viewing after such feeding was halted in late October and led to many disappointed and disgruntled visitors. Total visits involving wildlife viewing are estimated to be at least 35,000.

12. Other Wildlife Oriented Recreation

Field trials, both retriever and coon dog, continued to be popular with 36 held during the year. A local Tally-Ho Fox Hunting Club continued on-and-off use along a portion of the refuge on the northern side of the river. There was some practice duck calling. Wildlife viewing certainly played a part in some of the hiking, picnicking and pleasure boating.

13. Camping

Camping continued limited to supervised youth groups. There were twenty such campouts totaling 443 individuals.

14. Picnicking

Picnicking continued throughout all the milder parts of the year. About 8,000 individuals are estimated involved in picnics during the year.

16. Other Non-Wildlife Oriented Recreation

The heavy human population of this general locality with approximately a third of a million individuals within an hours travel distance of this refuge leads to heavy use from those who simply want to get out of town and into rural surroundings. This is especially during the show of spring blooms and during the period of autumn colors. There also is considerable nut and berry picking, jogging, hiking, bicycling, etc.

17. Law Enforcement

The reclassification of Harvie L. Fowler from Administrative Assistant, GS-9, to Park Technician, Law Enforcement, GS-7 gave this refuge a permanent law

enforcement employee and has done much to improve visitor protection, property protection and general law enforcement. His efforts were supplemented by those of from one to two other refuge employees for hunt supervision and during the period of heavy waterfowl usage. Special emphasis has been placed on night and boat patrol. Although violations continue and probably always will, it is felt that the refuge is again well under control in this respect. In all, 43 cases were made during the year for a wide variety of offenses, and good cooperation was received from local courts.

I. EQUIPMENT AND FACILITIES

3. Major Maintenance

Shortly before the beginning of the year, the sub-zero temperatures of late December had ruptured water pipes above the ceiling of the classroom of the Interpretive Center. When these thawed, the resulting flood dissolved the sheetrock ceiling of the classroom, damaged walls and soaked carpets. The ceiling was completely replaced with Celotex tile, walls repainted, base boards and carpets replaced and pads dried and cleaned. This building



Ruined classroom ceiling was replaced with Celotex tiles. Photo shows contractors working on this. (Photo by Bays - March 1984)

continued to require considerable maintenance with leaks around roof drains and louvers, back drainage through windows and problems with the heating and cooling system and with light fixtures. There was also serious leakage around the windows of the Observation Building and weather stripping there was replaced. The telephone, burgular and fire alarm systems of the center

gave frequent trouble and required repairs. A base station radio was obtained by transfer and placed in the Observation Building to permit communication there with the center, with headquarters and with mobile units. A board fence was constructed along the southern side of the observation building trail to prevent visitors from damaging shrub and wildflower beds and to reduce waterfowl disturbance on the display pool.

Early in the year, an energy audit, procured without charge from TVA, was made of the two residences. Following its recommendation, the hot water heaters of both residences were wrapped with insulated blankets and all doors weatherstripped. A damaged exterior door of residence #2 was replaced. Overhead wiring, forty years old and with insulation cracking badly, was replaced and four inches of overhead insulation were added. The headquarters boatramp, constructed during one of the early YCC programs, had cracked badly and become unusable. This was rebuilt.

The road and trail systems received their usual maintenance. The May flood did some damage to roads, trails and fields, though this was not major. A total of 389 tons of crushed limestone were purchased and used to reenforce weak spots in the road system south of the river. Some culverts were replaced and new lines added. North of the river, Limestone County, as payment for the use of the refuge gravel pit, added new gravel to weak areas. All roads were graded, some as many as three times. YCC crews were used to cut back road edges along some of the worst stretches, and the majority of these edges were mowed in early fall. The various trails were brushed back by YCC crews. Several loads of finely crushed limestone were purchased and used to build up weak spots in these trails, with major repairs made to the Dancey Bottoms Trail.

4. Equipment Utilization and Replacement

The TD-15 bulldozer, Ford truck-tractor and low bed trailer were borrowed by the Mississippi Sandhill Crane NWR in early June and kept until November. This virtually eliminated all heavy equipment use here, except road maintenance by the motor grader. Twice during the year, the rear axle of the 1981 Chevette sedan came loose, and it had done this twice previously. The last occurrence was in August. This time, the local agency replaced everything, including housings, connected with the rear end of this vehicle, and it has given no trouble since. This has proved a highly unsatisfactory unit, although all costs of repairs have been borne by the agency. There were numerous small repairs and replacements to other vehicles and to farm tractors including fuel and water pumps, brake linings, etc. There were also numerous servicings, greasings, oil and filter changes. The headquarters grain bin arrangement required frequent repairs to augers, heating units and electric motors. Radios, lawn mowers and chain saws were also frequently repaired, though there were no wrecks nor major breakdowns during the year. A water main leading into the headquarters complex leaked badly and was dug up and repaired by forced account. Two 1600 bushel grain bins, complete with feed and sweep augers, forced air and heating units, were purchased and installed by forced account in the headquarters complex. Other major items obtained during the year included the purchase of a Ford Ranger ½-ton truck, an IBM



These two old grain bins, erected in 1940, were demolished and sold as scrap. (Photo by Bays - July 1984)



These two new grain bins, purchased during the period and erected by force account, replaced the old ones. Photo shows Mechanic J. H. Blackwood and a YCC enrollee unloading material. (Photo by Bays - July 1984)

electric typewriter, a rotary seeder, a 12-volt electric winch, a wide 12-foot disc harrow, a heavy duty carpet vacuum cleaner and a heavy duty shop vacuum



A new rotary seeder was purchased. Photo shows Mechanic J. H. Blackwood planting wheat for goose forage with this. (Photo by Bays - October 1984)



A wide disc was purchased to speed up operations. Photo shows Equipment Operator V. V. McWilliams using this. (Photo by Bays - October 1984)

cleaner and three walkie talkie radio units. Acquisitions by transfer included Traveler Information Station Equipment from Ding Darling NWR, a base station radio from McKinney Lake NFH, and a power air hack saw and a pneumatic screwdriver from military excess.

The above acquisitions were offset by a number of dispositions. Two old 1,000 bushel grain bins, erected in 1940, were demolished and sold as scrap. The 1976 Hornet sedan and the 1976 Ford ½-ton truck was disposed of through exchange sales. A mobile unit radio was transferred to the McKinney Lake NFH. A seeder, a spreader and an air compressor were transferred to the state excess property agency.

7. Energy Conservation

Again, this refuge made a sincere effort to stay within its energy allotments. By reducing unnecessary driving and concentrating use with those vehicles that gave best mileage, only 91 percent of the gasoline allotment was used. The elimination of dewatered farming in favor of moist soil management, the reduction of forced account goose forage planting and the fact that the refuge bulldozer was on loan throughout most of the warm weather work period resulted in only a little more than half of the diesel fuel allotment actually used. The kilowatt allotment remained unrealistic and was exceeded, although there were sincere efforts to reduce this. As mentioned under I.3 above, an energy audit was obtained for the two headquarters residences, doors weatherstripped and one replaced, water heaters blanketed and additional insulation added in residence #2.

J. OTHER ITEMS

1. Cooperative Program

In cooperation with the U.S. Forest Service, gypsy moth traps were again 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 Auburn University and its woodcock study and wood duck dispersal study. It cooperated with the reporting of goose neck collars and other special bird markings, with eagle and goose surveys, 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.

Close cooperation with local newspapers and television stations continued whenever events of public interest occurred on the refuge. Again, there was close cooperation with the Wildlife Rescue Service, Birmingham, with numerous injured wildlife specimens temporarily treated and transferred to the rescue service.



Injured wildlife was given first aid, then sent to Rescue Service. Photo shows refuge employee feeding injured hummingbird. (Photo by Garrett - August 1984)



Rehabilitated wildlife were returned to the refuge. Photo shows ORP Larry Masters with a swan scheduled for release. (Photo by Garrett - March 1984)

Important special use permits of the year included one to the Alabama Highway Department authorizing the crossing of the Beaverdam Creek Arm by the I-565 spur and one to the Huntsville-Madison Port Authority authorizing construction of the Triana Barge Canal. A cooperative agreement was also signed with the Alabama Forestry Commission arranging for fire detection and suppression by State and County employees.

3. Items of Interest

At least four special news releases, dealing with seminars, schedules for the Interpretive Center, were distributed to and published by local newspapers. A weekly outdoor column, written by refuge personnel, was continued throughout the year and used by seven local newspapers as well as by radio and television stations. In addition, refuge employees spent some time helping newspaper reporters and magazine writers with background, sometimes with photographs, for nature oriented articles. Television crews visited the refuge several times during the year for short footage used with news programs.

During the year, nominations were made for four of the new Service Awards. All were approved and presented. These went to David Harris, Public Affairs Officer, Redstone Arsenal, Edward Peters, Editor of the Redstone Rocket, Percy M. Johnson, now age 92 and this refuge's original clerk and to David C. Hulse, local wildlife artist, woodcarver and author. All are individuals

who have given this refuge much support and cooperation for years.

In order to accommodate the new rectangular signs, the stone bases of both the headquarters entrance signs and that on the west boundary along Highway 67 were demolished and rebuilt. This converts all major signs to the rectangular type. In addition, several secondary entrance signs were replaced, others repainted and stretches of weak boundary reposted.

Volunteers proved a real help throughout the year. They kept an eye on Wheeler's far-flung satellites, aided with the conduction of the Interpretive Center, accompanied refuge employees on night patrol, constructed wood duck nest boxes and cleared litter from parts of the refuge. This latter was done by such local organizations as the Mooreland Hunt Club, retriever clubs and bow hunter associations scheduling cleanup Saturday's for their members.



Volunteer rubbish cleanup. Photo shows members of North Alabama Retrievers Club participating in a Saturday cleanup. (Photo by Blankenship - March 1984)

Since the establishment of this refuge in 1938, the Sharpsford bridge across Cotaco Creek has been a local landmark and has formed the southern boundary of that portion of the refuge that extends up Cotaco Creek. The bridge had become risky and was demolished in late 1984 with the construction of a modern structure now in progress.



Longtime landmark, the Sharpsford Bridge. This bridge was demolished shortly after the photo was taken, and the county will replace it with a modern structure. (Photo by Fowler - August 1984)

4. Credits

The section on funding was prepared by Assistant Manager Jimmie R. Cook. Photographs are by Richard M. Bays, Jimmie R. Cook, Carolyn Garrett, Faye Blankenship, Harvie Fowler, Lawrence J. Masters, Homer Blackwood, Melody Maxwell and Cynthia Thomas. ORP Carolyn Garrett provided Public Use data. Molly Grisham arranged and typed the final draft of this report.

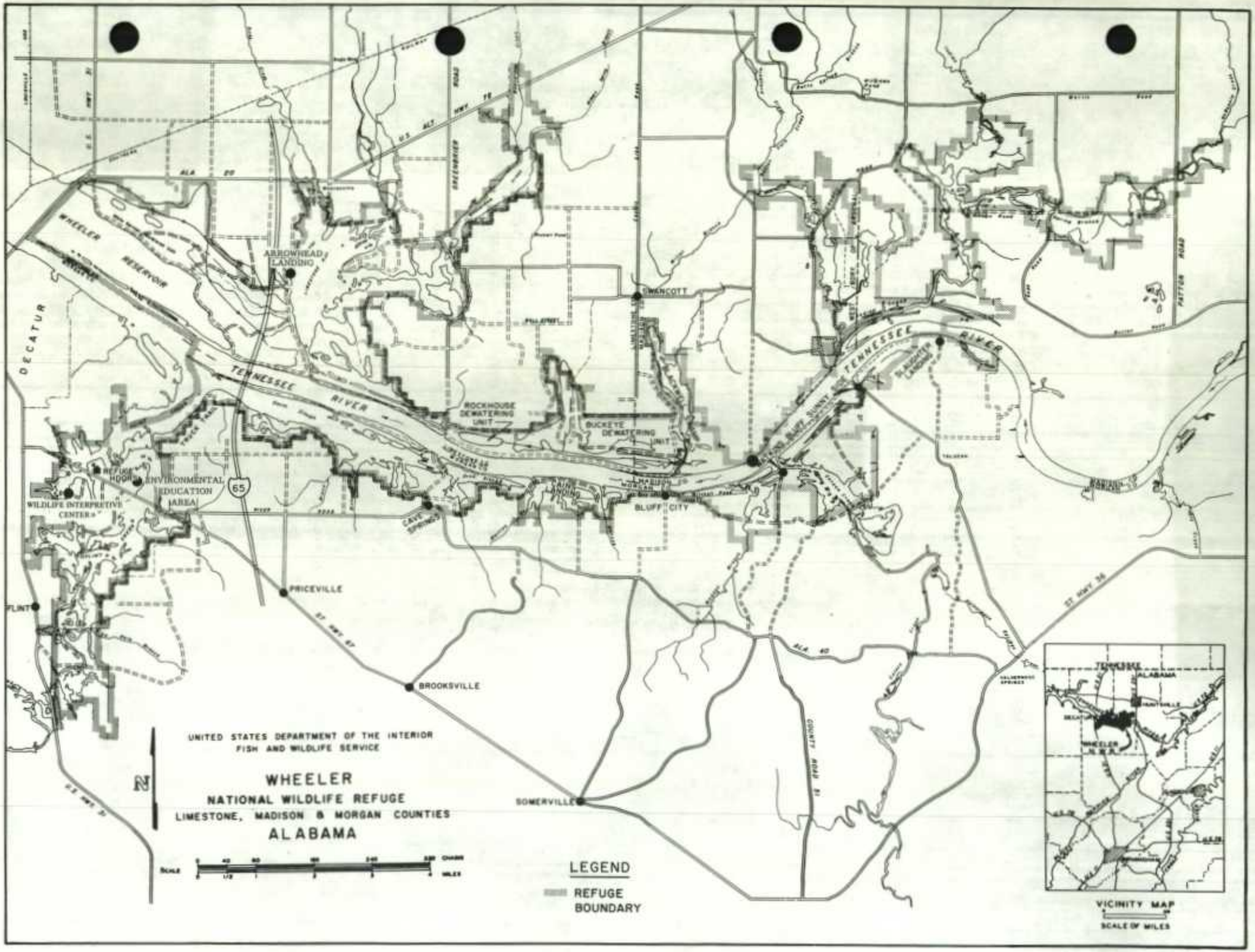
K. FEEDBACK

Again, the year was a good one. Although two employees were transferred and two reclassified to different positions, there were two new hirings and an Assistant Manager transferred here. Funding was certainly adequate. The weather of the year was less extreme than that of 1983, although there were single digit temperatures, an unusually-late May flood, a severe late-summer drought and an unprecedently-early October frost. Despite all this, agricultural production was good and about 40 percent above that of last year, and the mass crop was above normal. Although fall duck numbers were the lowest in years, January goose numbers were the highest in years. The revised hunt schedule proved ample, and there were no hunting accidents. The refuge came through 1984 without major catastrophies, with no official accidents and no major equipment breakdowns. Morale seems high.

On the other hand, there were negative factors. Maintenance man James Ammons

was critically injured in an off-duty accident in late May and never able to return to duty the remainder of the year. Although revised hunt schedules gave waterfowl an undisturbed period in late fall and early winter, there is still a shortage of rabbits and the feeling that the rabbit hunt is overlong. The decision to stop all feeding near the Waterfowl Observation Building disappointed many would be viewers and caused much public grumbling. Refuge efforts to enforce the Archaelogical Resources Protection Act and the Departmental Regulations against the removal of historic objects stirred up a storm of protests. The decision to leave at least 60 percent of the corn crop standing until after the waterfowl hunting season meant that birds were without hard food a part of the late fall and early winter. The decision to turn from row cropping to moist soil management in dewatered units brought both criticism from local hunters and much skepticism from refuge personnel. The requirements of the Office of Aircraft Services that heavier planes be used and that waterfowl inventories be taken at higher speeds and higher altitudes has proved both more expensive and less effective. There continued real problems with having YCC enrollees paid properly, new employees paid on time and overtime paid in full. There were problems with the Denver Service Center and it's slowness in bill paying with threats from utility companies to cut off services. Despite these problems, the year seemed a good one and an improvement over 1983.

"THE END"


UNITED STATES DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
WHEELER
NATIONAL WILDLIFE REFUGE
LIMESTONE, MADISON & MORGAN COUNTIES
ALABAMA
LEGEND
REFUGE BOUNDARY
VICINITY MAP
SCALE OF MILES
TENNESSEE RIVER
WHEELER RESERVOIR
DECATUR
ARROWHEAD LANDING
SWANCOTT
ROCKHOUSE DEWATERING UNIT
BUCKEYE DEWATERING UNIT
BLUFF CITY
CAVE SPRINGS
PRICEVILLE
BROOKSVILLE
SOMERVILLE
FLINT
REFUGE HOUSE
ENVIRONMENTAL EDUCATION AREA
WILDLIFE INTERPRETIVE CENTER
65
ALA 20
ALA 40
ST HWY 67
ST HWY 36
COUNTY ROAD 81
PATTON ROAD
U.S. ALT. HWY 72
GREENBRIER ROAD
TENNESSEE
ALABAMA
HUNTSVILLE
DECATUR
WHEELER N.W.R.

WHEELER NATIONAL WILDLIFE REFUGE
Box 1643
Decatur, Alabama 35602
Phone 205/353-7243

You are visiting the Wheeler National Wildlife Refuge which provides 34,500 acres of public land and water on which you can enjoy a wide range of outdoor activities, including photography, hiking, boating, fishing, picnicking, and wildlife observation. The refuge is open to hunting at certain times. You can obtain further information on hunting from the Refuge Office or Interpretive Center.

Although there are many regulations covering public uses of national wildlife refuges, those given below are the ones that apply to the majority of visitors. Please abide by these rules during your visit.

1. Obviously, guns and dogs should not be brought onto a wildlife refuge. Please leave both at home unless a refuge hunt is in progress, and then bring them only if you have a hunt permit.

2. Wildlife should be disturbed as little as possible and left unalarmed for others to see. Please don't blow horns, slam doors or attempt to make wild creatures fly or run.

3. Overnight camping is not allowed.

4. Please help keep the refuge clean by disposing of litter properly. You will be doing a public service if you will help clean litter left by thoughtless individuals.

5. Refuge roads are narrow and traffic is frequently heavy. The speed limit is 30 mph. Please drive carefully.

6. Road gates may be closed for management purposes. However, foot traffic is permitted behind closed gates.

7. All vehicles must remain on the roads shown on the reverse map. Off road vehicular travel is not permitted.

BLOWING WIND CAVE NATIONAL WILDLIFE REFUGE

Scottsboro, Alabama

ANNUAL NARRATIVE REPORT

Calendar Year 1984

U.S. Department of the Interior
Fish and Wildlife Service
NATIONAL WILDLIFE REFUGE SYSTEM

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. It is approximately 70 miles from Wheeler Refuge Headquarters.

The log dwelling on the tract continued to be occupied by Michael Banzhoff, Jackson County Forester, throughout the year. Mr. Banzhoff has proved a conscientious custodian and is largely responsible for the minimum problems at this satellite. In June, he reported the road entrance gate damaged by an auto impact. Richard Bays and Refuge Mechanic J. H. Blackwood promptly repaired this.

With the transfer of Research Biologist George Haas, responsibility for bat reasearch was shifted to Biologist Steve Christman, based in Gainsville, Florida. On July 5, Christman, accompanied by Fred Bagley, Jackson Mississippi Endangered Species Office, L. J. Masters, Molly Grisham and Atkeson from Wheeler Refuge, conducted the annual bat count there. The count was 360,000, well above the 274,000 counted on June 1, 1983, but below the 386,000 count made on August 1, 1983.



A Gray Bat (May 1984-RMB)

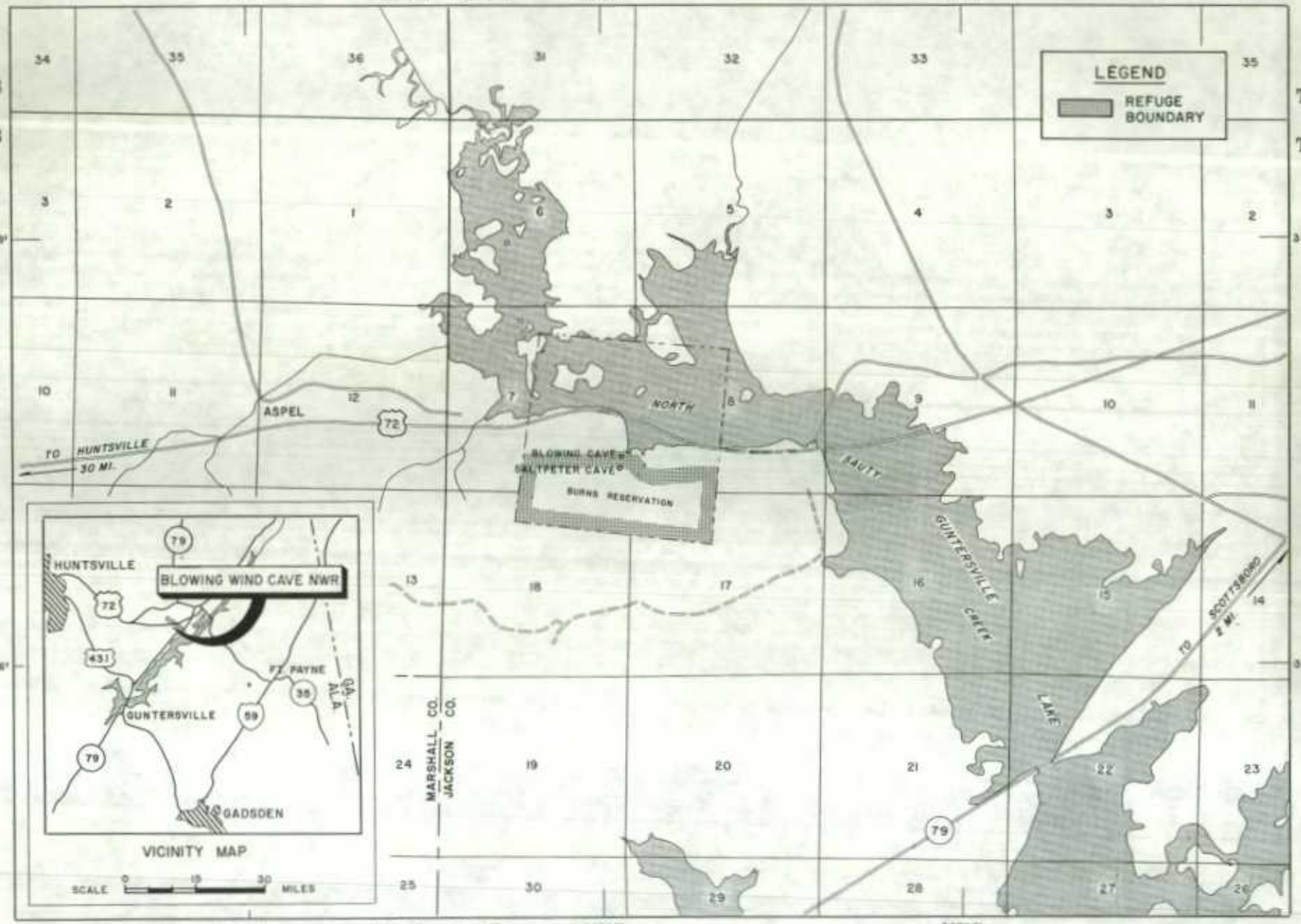
Christman was interested in testing that acceptance of various entrance types and proposed to place panels with different bar sizes and arrangements in the upper level barricade for this purpose. The refuge cooperated by conducting

various measurements, loaning equipment, etc. On August 21, Christman and his assistant, John Seginak, did install two of these panels. This was followed by a series of observations that indicated a definite preference for openings with vertical, rather than horizontal, bars. Christman plans more intensive preference studies in 1985.

Refuge employees visited this satellite regularly, usually monthly or more often. No endangered species funds were available during FY84 and personnel time was charged to Project 1260.

BLOWING WIND CAVE NATIONAL WILDLIFE REFUGE

JACKSON COUNTY, ALABAMA



HUNTSVILLE MERIDIAN

0 2000 4000 6000 8000 FEET

0 1/4 1/2 MILE

TRUE NORTH
MAGNETIC N.
0°20'
MEAN DECLINATION 1977

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

ATLANTA, GEORGIA AUGUST 1977

4R ALA 930 403

WATERCRESS DARTER NATIONAL WILDLIFE REFUGE

Bessemer, Alabama

ANNUAL NARRATIVE REPORT

Calendar Year 1984

U.S. Department of the Interior
Fish and Wildlife Service
NATIONAL WILDLIFE REFUGE SYSTEM

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 spoil piles resulting from the construction of a quarter-acre pond just south of Thomas Spring in 1983 remained a problem in 1984. These continued too wet for spreading throughout the late winter, spring and early summer. A drought began in late summer, and there were several contacts by the Jackson Mississippi Endangered Species Office urging Wheeler personnel to spread these while conditions were favorable. This was impossible, for Wheeler's TD-15 bulldozer was on indefinite loan to the Mississippi Sandhill Crane NWR. The Jackson Office offered to make a maximum of $2,000.00 available, if Wheeler personnel could arrange a small contract for the spreading. Park Technician Harvie Fowler contacted several equipment owners and operators in the Bessemer area and was able to have all spoil leveled, fertilized and seeded for $1,500.00. Results have been entirely satisfactory with the spoil now blended with surroundings and covered with a good grass sod.



Contractor spreading spoil from new pond. This was completed, leveled and seeded. (September 1984-1-HLF)

Thomas Spring is now heavily vegetated, and this has already spread throughout much of the new pond. It is understood that the presence of substantial darter

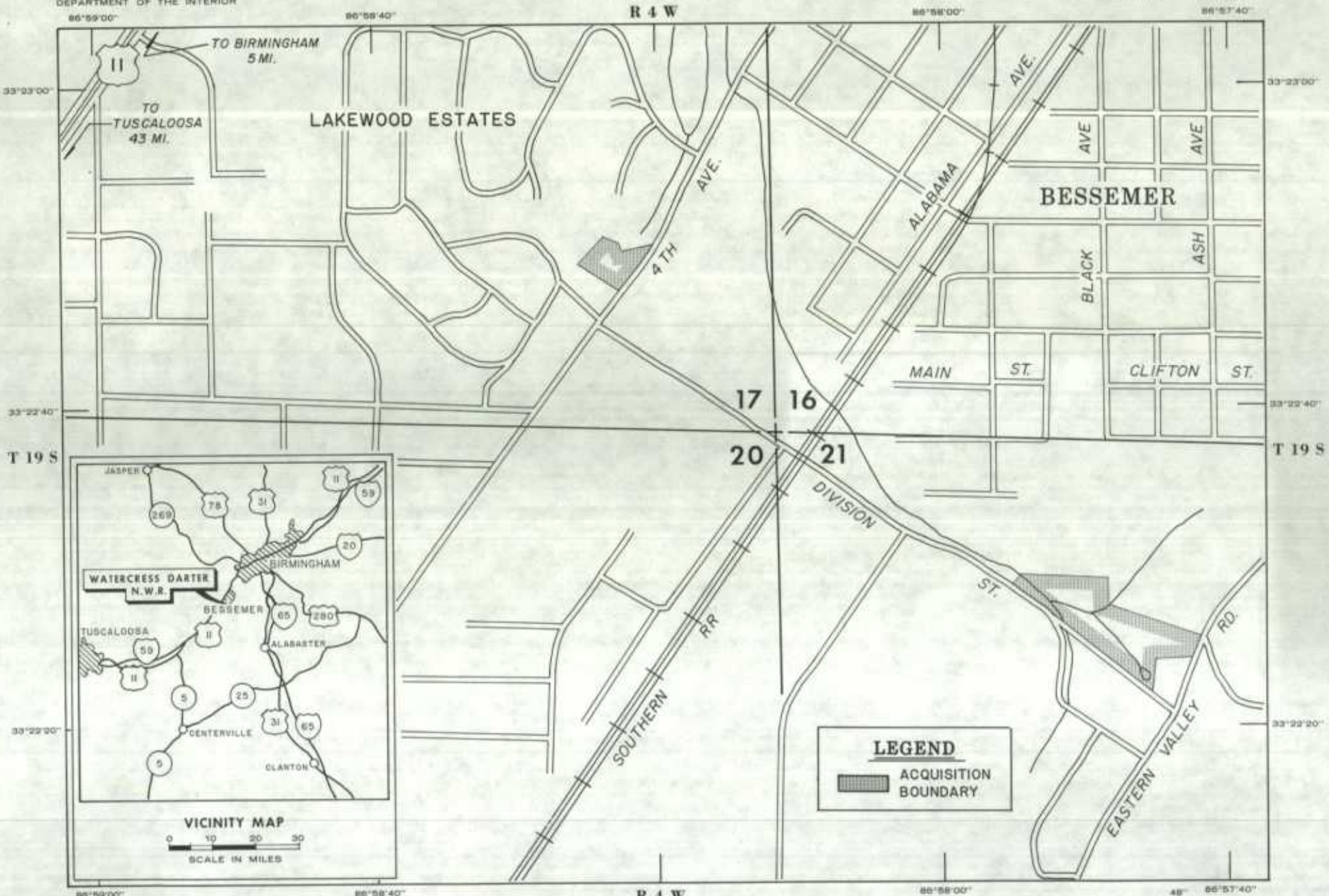
numbers has been verified by Dr. Mike Howell, the recovery team leader. Wheeler personnel visited the site whenever opportunity offered. Charles Leek, the adjoining house holder, and Charles Brasfield, a retired individual and Audubon Society member who lives nearby, continued to keep watch over the satellite throughout the year and to report any changes to the Refuge office. Although funds for the spoil pile leveling were made available by the Jackson Endangered Species Office, there were no funds to cover personnel time spent on inspection trips and this was charged to Project 1260.

WATERCRESS DARTER NATIONAL WILDLIFE REFUGE

JEFFERSON COUNTY, ALABAMA

UNITED STATES
DEPARTMENT OF THE INTERIOR

UNITED STATES
FISH AND WILDLIFE SERVICE



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FROM SURVEYS BY U.S.G.S.

ATLANTA, GEORGIA FEBRUARY, 1981

4R ALA 985 403

FERN CAVE NATIONAL WILDLIFE REFUGE

Paint Rock, Alabama

ANNUAL NARRATIVE REPORT

Calendar Year 1984

U.S. Department of the Interior
Fish and Wildlife Service
NATIONAL WILDLIFE REFUGE SYSTEM

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 entrance road was kept locked throughout the hunting period, but was opened during spring and summer to facilitate entry by cave exploration parties.



Harts Tongue Fern. This rare fern is found only in the bottom of the Morgue Entrance Pit. (July 1984-CRG)

During the evening of July 7, Research Biologist Steve Christman, along with Fred Bagley of the Jackson Mississippi Endangered Species Office, checked the Morgue and Fern Entrances and noted about 1,000 gray bats emerging from these. In 1983, approximately 500 gray bats had been counted emerging from the Johnston Entrance. These observations are indicating that a bachelor or maternity colony has become established, where previously there was a hibernaculum only, and is growing. If sufficient personnel can be assembled, there

should be a simultaneous count at all entrances made in 1985 to determine the extent of this warm weather use.

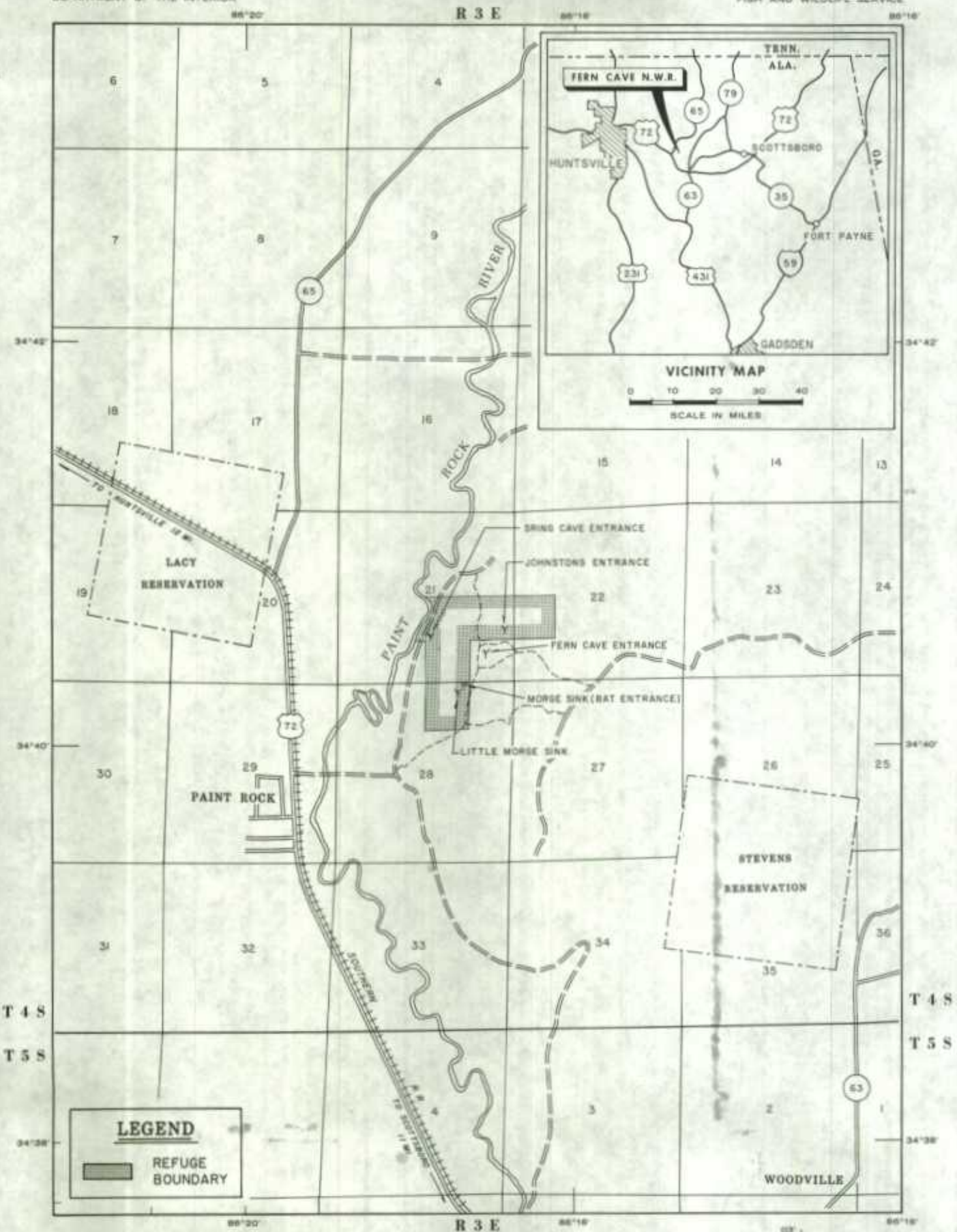
Wheeler Refuge employees visited this site regularly throughout the year. No FY84 endangered species funds were available and personnel time has been charged to Project 1260.

FERN CAVE NATIONAL WILDLIFE REFUGE

JACKSON COUNTY, ALABAMA

UNITED STATES
DEPARTMENT OF THE INTERIOR

UNITED STATES
FISH AND WILDLIFE SERVICE



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

R 3 E
HUNTSVILLE MERIDIAN

0 2000 4000 6000 8000 FEET
0 1/4 1/2 1 MILE

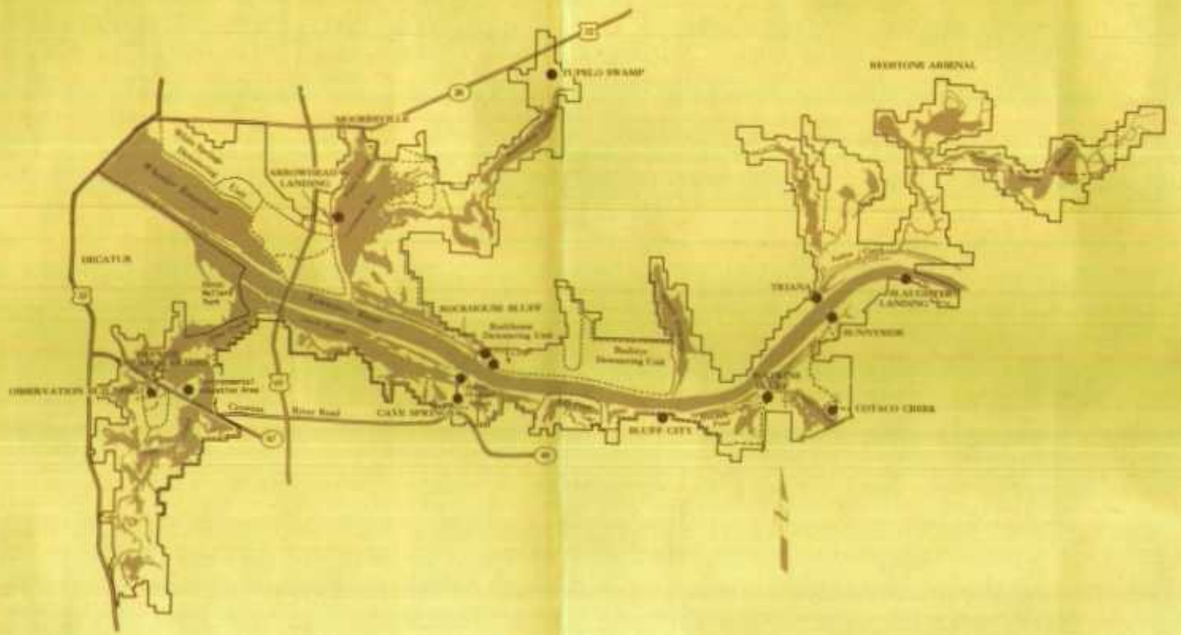
MEAN
DECLINATION
1982

ATLANTA, GEORGIA APRIL, 1982

4R ALA 1009 403

DEPARTMENT OF THE INTERIOR
U.S. Fish and Wildlife Service
RF-43660-1 - March 1984

WHEELER NATIONAL WILDLIFE REFUGE
P.O. BOX 1643
DECATUR, ALABAMA 35602



WILDLIFE INTERPRETIVE CENTER, Wednesday through Sunday, 10:00 AM - 5:00 PM.
Telephone (205) 350-6639.

WHEELER HEADQUARTERS OFFICE, Monday through Friday, 7:30 AM - 4:30 PM.
Telephone (205) 353-7243.

WHEELER



national wildlife refuge

The **WHEELER NATIONAL WILDLIFE REFUGE** is one of more than 400 national wildlife refuges administered by the U.S. Fish and Wildlife Service, and was established to protect waterfowl and other migratory birds, endangered species, and their habitats.

In July 1938, President Franklin D. Roosevelt, by Executive Order, set aside the middle third of Wheeler Reservoir on the Tennessee River in northern Alabama as a national wildlife refuge. A few years earlier, Wheeler Reservoir, a multipurpose impoundment, had been created with the completion of the Tennessee Valley Authority's Wheeler Dam. The refuge was established primarily as an experiment, to determine whether or not water power impoundments could be made attractive to waterfowl. It was the first national wildlife refuge to be placed on a reservoir of this type.

The westernmost end of Wheeler National Wildlife Refuge is within the city limits of Decatur, while it's easternmost end touches the city limits of Huntsville. Located as it is in a heavily populated section that is rapidly expanding industrially, the refuge not only plays an important role in the conservation of waterfowl and other wildlife, but also contributes significantly to the recreational values of northern Alabama.

The refuge stretches 20 miles along the Tennessee River. It includes the backwaters along either side of the river, as well as an adjacent strip of upland, and covers approximately 34,500 acres - roughly half land and half water. In addition to the former river channel, the refuge's waters include many sloughs and embayments. The land alternates between hardwood bottoms, pine plantations, farmlands and pastures.



WILDLIFE

Wheeler National Wildlife Refuge, considered the easternmost national wildlife refuge on the lower Mississippi Flyway, winters thousands of Canada geese and ducks. It is Alabama's oldest and largest national wildlife refuge and is the southernmost wintering ground of Canada geese in significant numbers. It supports one of the southeast's highest concentrations of these birds.

Banding studies show that the majority of geese wintering here nest along James Bay, a southern projection of Hudson Bay, while the majority of ducks come from Canada's prairie provinces. Most waterfowl that winter here nest far to the north, but many wood ducks, and some mallards and black ducks, bring off broods on the refuge each spring.

Although waterbirds are the most spectacular visitors, a wide variety of other wildlife is present. Many species of shorebirds stop briefly in early fall, and again in the spring. Bobwhites and mourning doves are numerous. In all, the refuge bird list includes 304 species.

Mammals range from tiny shrews to white-tailed deer. Gray squirrels, swamp rabbits, cottontails, raccoons, opossums, woodchucks (groundhogs), chipmunks, skunks, and red and gray fox are common on the uplands. Beaver, muskrats, mink, and a few otters occur around water.

AGRICULTURE

The reservoir's fluctuations reduce marsh and aquatic plant growth that waterfowl normally use for food. Farm crops, including pasture, provide a substitute food supply. Local farmers manage the majority of the refuge's agricultural land on a share basis, leaving about a quarter of their crops in the fields for wildlife. Summer crops include corn, grain sorghum, soybeans and millet. All species of geese, along with mallards, pintails, and black ducks, use the upland fields. Since geese depend on green browse for a substantial part of their diet, a high percentage of the refuge land is kept in wheat and similar crops.





On the north side of the river, TVA annually dewaters large slough areas. The refuge takes advantage of this annual pump-down to plant waterfowl food crops in the dry slough beds. When pumps are cut off again in early fall, rainfall and flows from springs gradually refill these sloughs and provide nearly ideal feeding conditions for all species of waterfowl.

RECREATION

HUNTING AND FISHING. The refuge is open to year-round fishing, subject to the restrictions of State law. Spring and fall are favorite fishing periods. Crappie, bass, and bream are angler's favorites. Various public hunts, held annually, remove surpluses that otherwise might be wasted and hold wildlife populations in better balance. Permits are always required, and the number issued is consistent with safety requirements. Contact the refuge office for full information about hunts.

BOATING. Pleasure boating is allowed and permits are not required. For safety reasons, water skiing should be restricted to the old river channel.

CAMPING. General overnight camping is prohibited. However, special permits are issued without charge for camp-outs by Scouts and other supervised youth groups.

SIGHTSEEING, BIRD STUDY, AND PHOTOGRAPHY. These activities are encouraged, although certain strategic roads are closed during the peak of the waterfowl season to allow birds to feed undisturbed. Waterfowl concentrations command attention of the photographer and bird student. Bird, mammal, and woody plant lists are available at the refuge's Wildlife Interpretive Center.

FIELD TRIALS. The refuge offers ideal grounds for certain types of field trials. Retriever and coon dog trials are held every year.

RESTRICTIONS. Although the refuge is open year-round to a wide range of outdoor activities, there are a few restrictions that must be observed. Guns and dogs must never be brought onto the refuge, except during public hunts, and then only under permit. There must not be any overnight camping except by supervised youth groups under permit. Rubbish must not be left on the refuge. Care must be used not to start wildfires, and crops, fences, signs and other property must not be damaged.

COOPERATION BETWEEN PUBLIC AGENCIES

Wheeler National Wildlife Refuge is an outstanding example of cooperation between various public agencies and the concurrent use of public lands. The refuge area was originally purchased by TVA in 1934 and 1935 to provide a bed for, and a buffer strip around, Wheeler Reservoir. The Executive Order creating a national wildlife refuge placed it under the administration of the U.S. Fish and Wildlife Service of the Department of the Interior, although TVA still retains the power production and navigation. Several thousand acres of the northeastern part of the refuge lie within the Redstone Arsenal Reservation, a Department of the Army installation that is the cradle of American rocket development. A smaller amount of refuge land lies within the Marshall Space Flight Center, the scene of our national space effort development. The four agencies work in close harmony in the use of this tract of public land.



	SP	S	F	W
BLUEBIRDS and THRUSHES				
Eastern Bluebird*	c	c	c	u
Veery	u		u	
Grey-cheeked Thrush	u		u	
Swainson's Thrush (Olive-backed Thrush)	u		u	
Hermit Thrush	u		c	c
Wood Thrush*	c	c	c	
American Robin*	c	c	c	u
MIMICS				
Grey Catbird*	c	c	c	
Northern Mockingbird*	c	c	c	c
Brown Thrasher*	c	c	c	c
PIPITS				
Water Pipit	r		c	c
Sprague's Pipit				x
WAXWINGS, SHRIKES and STARLINGS				
Cedar Waxwing	c	r	c	c
Loggerhead Shrike*	c	c	c	c
European Starling*	a	a	a	a
VIREOS				
White-eyed Vireo*	c	c	c	
Yellow-throated Vireo*	c	c	c	
Warbling Vireo	o		o	
Philadelphia Vireo	o		u	
Red-eyed Vireo*	c	c	c	
Solitary Vireo	u		u	
WOOD WARBLERS				
Blue-winged Warbler	u		u	
Golden-winged Warbler	u		u	
Tennessee Warbler	c		c	
Orange-crowned Warbler	u		u	o
Nashville Warbler	u		c	
Northern Parula	c	u	c	
Yellow Warbler*	c	u	c	r
Chestnut-sided Warbler	u		u	
Magnolia Warbler	c		c	
Cape May Warbler	u		u	
Black-throated Blue Warbler	x			
Yellow-rumped Warbler (Myrtle Warbler)*	c		c	c
Black-throated Green Warbler	u		u	
Blackburnian Warbler	u		u	
Yellow-throated Warbler	c	r	c	
Pine Warbler*	c	c	c	c
Prairie Warbler	c	u	c	
Palm Warbler	c		c	u
Bay-breasted Warbler	u		u	
Blackpoll Warbler	c		r	
Cerulean Warbler	u		u	
Black-and-white Warbler*	c	c	c	
American Redstart*	c	u	c	
Prothonotary Warbler*	c	c	c	
Worm-eating Warbler	u	u	u	
Swainson's Warbler	u		u	
Ovenbird	c		c	
Northern Waterthrush	u		u	
Louisiana Waterthrush*	u	u	u	
Kentucky Warbler	c		c	
Connecticut Warbler	o		o	
Mourning Warbler	r		r	

	SP	S	F	W
Common Yellowthroat*	c	c	c	o
Hooded Warbler*	c	c	c	
Wilson's Warbler	u		o	
Canada Warbler	u		u	
Yellow-breasted Chat*	c	c	c	
TANAGERS				
Summer Tanager*	c	c	u	
Scarlet Tanager	u		u	
CARDINALS, GROSBEAKS and BUNTING				
Northern Cardinal*	c	c	c	c
Rose-breasted Grosbeak	c		c	
Blue Grosbeak*	c	c	c	
Indigo Bunting*	c	c	c	
Dickcissel*	c	c	u	
SPARROWS				
Rufous-sided Towhee*	c	c	c	c
Bachman's Sparrow	r	r		r
American Tree Sparrow (Townsend's Sparrow)	o		o	o
Chipping Sparrow	u	u	u	u
Clay-colored Sparrow	x			
Field Sparrow*	c	c	c	c
Vesper Sparrow	o		o	c
Lark Sparrow	r	r	r	
Savannah Sparrow	u		c	c
Grasshopper Sparrow*	u	u	u	r
Henslow's Sparrow	r		r	r
Le Conte's Sparrow	r		r	r
Sharp-tailed Sparrow (Nelson's Sparrow)	x			
Fox Sparrow	u		u	u
Song Sparrow	u		c	c
Lincoln's Sparrow	u		o	
Swamp Sparrow	c		c	c
White-throated Sparrow	c		c	a
White-crowned Sparrow			u	u
Harris' Sparrow			x	
Dark-eyed Junco (Slate-colored Junco)	c	o	c	c
Lapland Longspur			u	u
BLACKBIRDS, MEADOWLARKS and ORIOLES				
Bobolink	c		u	
Red-winged Blackbird*	c	c	a	a
Eastern Meadowlark*	c	c	a	c
Western Meadowlark			x	x
Yellow-headed Blackbird	x		x	x
Rusty Blackbird	u		c	c
Brewer's Blackbird	o		u	u
Common Grackle*	c	c	a	a
Brown-headed Cowbird*	c	c	a	a
Orchard Oriole*	c	c		
Northern Oriole (Baltimore Oriole)	u	o	u	
FINCHES				
Purple Finch	u		c	c
House Finch	u		u	u
Red Crossbill				x
Pine Siskin			u	u
American Goldfinch*	c	u	c	c
Evening Grosbeak	u		u	u
WEAVER FINCHES				
House Sparrow*	c	c	c	c

Birds of Wheeler National Wildlife Refuge



BIRDS OF WHEELER NATIONAL WILDLIFE REFUGE

Wheeler National Wildlife Refuge, located in the Tennessee River Valley of northern Alabama, was established in 1938 to provide protection and wintering areas for waterfowl and other wildlife. The refuge's great diversity of habitat includes deep river channels, tributary creeks, tupelo swamps, open backwater embayments, bottomland hardwoods, pine uplands and agricultural fields.

Bird watching is a growing outdoor pastime that provides many hours of enjoyment in a natural environment. Over 304 different species of birds have been observed on the refuge since 1938.

The Art of Birding

A good field guide and binoculars provide the basic tools useful in the observation and identification of birds. While some species are easy to approach, others are more wary. It is best to walk slowly and quietly and to avoid sudden movements. Many kinds of birds can be found on Wheeler Refuge. Waterfowl and other water birds are plentiful during the fall and winter months. The greatest number of waterfowl are present during the months of December and January. During this time over 50,000 ducks and 30,000 Canada geese winter on the refuge. When looking at a bird, pay close attention to characteristics such as color, size, shape, wing, and head markings. Always observe first, then refer to your identification book because the bird may not remain where it can be readily seen for a long period of time.

SEASON

SP - Spring	March-May
S - Summer	June-August
F - Fall	September-November
W - Winter	December-February

c - common	certain to be seen in suitable habitat.
u - uncommon	present, but not always found.
o - occasional	occurs erratically.
r - rare	seen at intervals of 2 to 5 years.
x - accidental	has been seen fewer than 5 times.
*	nests locally.

DEPARTMENT OF THE INTERIOR
U.S. Fish and Wildlife Service
RF-43660-2 - November 1984

LOONS AND GREBES	SP	S	F	W
Red-throated Loon				x
Common Loon	c	r	c	c
Pied-billed Grebe*	c	u	c	c
Horned Grebe	u		c	c
Red-necked Grebe			o	o
Eared Grebe	o		o	
PELICANS AND CORMORANTS				
American White Pelican			o	
Double-crested Cormorant	u		u	u
ANHINGA				
Anhinga	r	r	r	
BITTERNS, EGRETS and HERONS				
American Bittern	u		u	
Least Bittern	u	u		
Great Blue Heron	c	c	a	a
Great Egret	u	u	u	r
Snowy Egret	u	u		
Little Blue Heron	c	c	u	
Tricolored Heron (Louisiana Heron)	o	o		
Cattle Egret	c	c	u	
Green-backed Heron (Green Heron)	c	c		
Black-crowned Night-Heron	u	u	u	r
Yellow-crowned Night-Heron*	c	c	u	
IBISES and STORKS				
White Ibis	o	o	o	
Glossy Ibis	r	r	r	
Wood Stork (Wood Ibis)		r	r	
WATERFOWL, DUCKS, GEESE and SWANS				
Fulvous Whistling-Duck (Tree Duck)				x
Tundra Swan (Whistling Duck)			o	o
Mute Swan		x	x	
Greater White-fronted Goose	o		o	o
Snow Goose	u		c	c
Ross' Goose				x
Brant				x
Barnacle Goose			x	x
Canada Goose*	u	u	a	a
Egyptian Goose	x		x	
Wood Duck*	c	c	a	c
Green-winged Teal	u		c	c
American Black Duck*	u	u	c	c
Mallard*	u	u	a	a
Northern Pintail	u	r	c	c
Blue-winged Teal	c	r	c	c
Cinnamon Teal				x
Northern Shoveler	c		c	u
Gadwall	u	r	c	c
Eurasian Wigeon			x	x
American Wigeon	u		a	a
Canvasback	c		c	c
Redhead	u		u	u
Ring-necked Duck	c		c	c
Greater Scaup			o	o
Lesser Scaup	c		c	c
Common Eider				x
King Eider				x
Harlequin Duck				x
Oldsquaw	r		u	u
Black Scoter (Common Scoter)			r	r
Surf Scoter				r
White-winged Scoter			u	u
Common Goldeneye	r		c	c
Bufflehead	r		u	c
Hooded Merganser*	u	r	c	c
Common Merganser (American Merganser)	r		u	u
Red-breasted Merganser	c		u	u
Ruddy Duck	u		c	c
Masked Duck	x			
Ruddy Shelduck			x	x
VULTURES				
Black Vulture	u	u	u	r
Turkey Vulture	u	u	u	r
OSPREYS, KITES, EAGLES and HAWKS				
Osprey	u		u	
Mississippi Kite	o	o		
Bald Eagle	r		u	u
Northern Harrier (Marsh Hawk)	u		c	c
Sharp-shinned Hawk*	u	u	c	u
Cooper's Hawk*	u	u	c	u
Red-shouldered Hawk*	u	u	u	u
Broad-winged Hawk	u		c	
Swainson's Hawk			x	x
Red-tailed Hawk*	u	u	c	c
Rough-legged Hawk			o	o
Golden Eagle			o	o
American Kestrel (Sparrow Hawk)*	c	c	c	c
Merlin (Pigeon Hawk)	u	r	u	u
Peregrine Falcon (Duck Hawk)	r		r	r
GALLINACEOUS BIRDS				
Ring-necked Pheasant	r	r	r	r
Wild Turkey*	u	u	u	u
Northern Bobwhite (Quail)*	c	c	c	c
RAILS, COOTS and GALLINULES				
Yellow Rail				x
Black Rail		x		
King Rail	c	c	c	u
Virginia Rail	c		c	
Sora	c		c	
Purple Gallinule	o	o		
Common Moorhen (Common Gallinule)	u	u	o	
American Coot*	a	u	a	c
CRANES				
Sandhill Crane			x	
PLOVERS				
Black-bellied Plover	u		u	
Greater Golden Plover	u		u	
Wilson's Plover	x			
Semipalmated Plover	c		c	
Piping Plover	u		u	
Killdeer*	c	c	a	c
STILTS and AVOCETS				
Black-necked Stilt	x		x	
American Avocet			u	
SHOREBIRDS	SP	S	F	W
Greater Yellowlegs	a	u	a	u
Lesser Yellowlegs	a	u	a	u
Solitary Sandpiper	c	u	c	
Willet	u	u	u	
Spotted Sandpiper*	c	c	c	r
Upland Sandpiper (Upland Plover)	u		u	
Whimbrel (Hudsonian Curlew)	r		r	
Hudsonian Godwit	r		r	
Marbled Godwit	r			
Ruddy Turnstone	u		u	
Red Knot			r	
Sanderling	u		c	
Semipalmated Sandpiper	c	u	c	r
Western Sandpiper	u		c	
Least Sandpiper	a	u	a	u
White-rumped Sandpiper	u		c	
Baird's Sandpiper	o	r	o	
Pectoral Sandpiper	a	u	u	r
Dunlin (Red-backed Sandpiper)	u		c	u
Stilt Sandpiper	u		u	
Buff-breasted Sandpiper	o		u	
Short-billed Dowitcher	u		u	
Long-billed Dowitcher	c	r	u	
Common Snipe	c	u	c	c
American Woodcock	u	u	c	c
Wilson's Phalarope	u	r	u	
Red-necked Phalarope (Northern Phalarope)	r		o	
GULLS and TERNS				
Laughing Gull	u		o	u
Franklin's Gull	r	r	r	r
Bonaparte's Gull	u		u	u
Ring-billed Gull	u	r	a	a
Herring Gull	u	r	c	c
Glaucous Gull				r
Great Black-backed Gull				r
Caspian Tern	u	u	u	
Common Tern	o	o	o	
Forster's Tern	u	u	u	
Least Tern	o	o		
Black Tern	u	u	c	
PIGEONS and DOVES				
Rock Dove (Domestic Pigeon)	c	c	c	c
White-winged Dove			x	
Mourning Dove*	c	c	a	c
Common Ground Dove	o	o	o	
CUCKOOS				
Black-billed Cuckoo	u		u	
Yellow-billed Cuckoo*	c	c	c	
OWLS				
Common Barn Owl*	c	c	c	c
Eastern Screech-Owl*	c	c	c	c
Great Horned Owl*	u	u	c	c
Barred Owl*	u	u	u	u
Short-eared Owl			u	u
Northern Saw-whet Owl				x
GOATSUCKERS				
Common Nighthawk*	c	c	c	
Chuck-will's widow*	c	c	c	
Whip-poor-will	u		u	
SWIFTS				
Chimney Swift*	c	c	c	
HUMMINGBIRDS	SP	S	F	W
Ruby-throated Hummingbird*	c	c	c	
KINGFISHERS				
Belted Kingfisher*	c	c	c	c
WOODPECKERS				
Red-headed Woodpecker*	c	c	c	u
Red-bellied Woodpecker*	c	c	c	c
Yellow-bellied Sapsucker	c		c	c
Downy Woodpecker*	c	c	c	c
Hairy Woodpecker*	c	c	c	c
Northern Flicker (Common Flicker)*	c	c	c	c
Pileated Woodpecker*	c	c	c	c
FLYCATCHERS				
Olive-sided Flycatcher	r		r	
Eastern Wood-Pewee*	c	c	c	
Yellow-bellied Flycatcher			o	
Acadian Flycatcher*	c	c	c	
Least Flycatcher	u		u	
Ash-throated Flycatcher			x	
Great Crested Flycatcher*	c	c	c	
Eastern Kingbird*	c	c	c	
Scissor-tailed Flycatcher			x	
LARKS				
Horned Lark*	c	o	c	c
MARTINS and SWALLOWS				
Purple Martin*	c	c	c	
Tree Swallow	c		c	
Northern Rough-winged Swallow*	c	c	c	
Bank Swallow	c		c	
Cliff Swallow*	c	c	c	
Barn Swallow*	c	c	c	
BLUE JAYS and CROWS				
Blue Jay*	c	c	c	c
American Crow (Common Crow)*	c	u	a	a
CHICKADEES and TITMICE				
Carolina Chickadee*	c	c	c	c
Tufted Titmouse*	c	c	c	c
NUTHATCHES				
Red-breasted Nuthatch	u		u	c
White-breasted Nuthatch*	u	u	u	u
Brown-headed Nuthatch	r		r	
CREEPERS				
Brown Creeper			c	c
WRENS				
Carolina Wren*	c	c	c	c
Bewick's Wren*	u	u	r	r
House Wren			u	u
Winter Wren	u		c	c
Sedge Wren (Short-billed Marsh Wren)	r		r	
Marsh Wren (Long-billed Marsh Wren)	o		u	r
KINGLETS and GNATCATCHERS				
Golden-crowned Kinglet	u		c	c
Ruby-crowned Kinglet	c		c	c
Blue-grey Gnatcatcher*	c	u	c	

Eastern Worm Snake (*Carphophis amoenus amoenus*). Common, though seldom seen.
Northern Black Snake or Black Racer (*Coluber constrictor constrictor*). Common.
Rough Green Snake (*Opheodrys aestivus*). Fairly common.
Gray Rat Snake (*Elaphe obsoleta spilaides*). Uncommon.
Corn Snake (*Elaphe guttata guttata*). Common.
Scarlet Snake (*Cemophora coccinea*). Rare.
Scarlet Kingsnake (*Lampropeltis doliata doliata*). Rare.
**Red Milk Snake (*Lampropeltis doliata syspila*). Uncommon.
Mole Snake (*Lampropeltis calligaster rhombomaculata*). Rare.
Black Kingsnake (*Lampropeltis getulus niger*). Fairly common.
Crowned Snake (*Tantilla coronata coronata*). Fairly common.

POISONOUS SNAKES OR PIT VIPERS

Since the coral snake (*Micrurus fulvius*) is not known to occur here, all poisonous snakes belong to the pit viper group. All snakes listed below are poisonous, dangerous, and should not be approached. However, none will deliberately attack humans, and all are unlikely to bite unless handled, stepped upon, or at least, brushed closely.

Northern Copperhead or Highland Moccasin (*Agkistrodon contortrix mokeson*). Uncommon, but sparingly present over all refuge land area, though rat snakes and other spotted species are often mistaken for copperheads.

Eastern Cottonmouth Moccasin (*Agkistrodon piscivorus piscivorus*). Uncommon, though sparingly present along water edges and in low areas throughout the refuge. Various water and fish snakes are frequently mistaken for cottonmouths.

Timber or Southern Canebreak Rattlesnake (*Crotalus horridus atricaudatus*). Rare on all parts of refuge. Most frequently noted in hilly areas on southern side of Tennessee River.

Carolina Pigmy or Ground Rattlesnake (*Sistrurus milliarus and milliarus*). Rare and evidently limited to parts of the refuge on the southern side of the Tennessee River.

SAURIANS

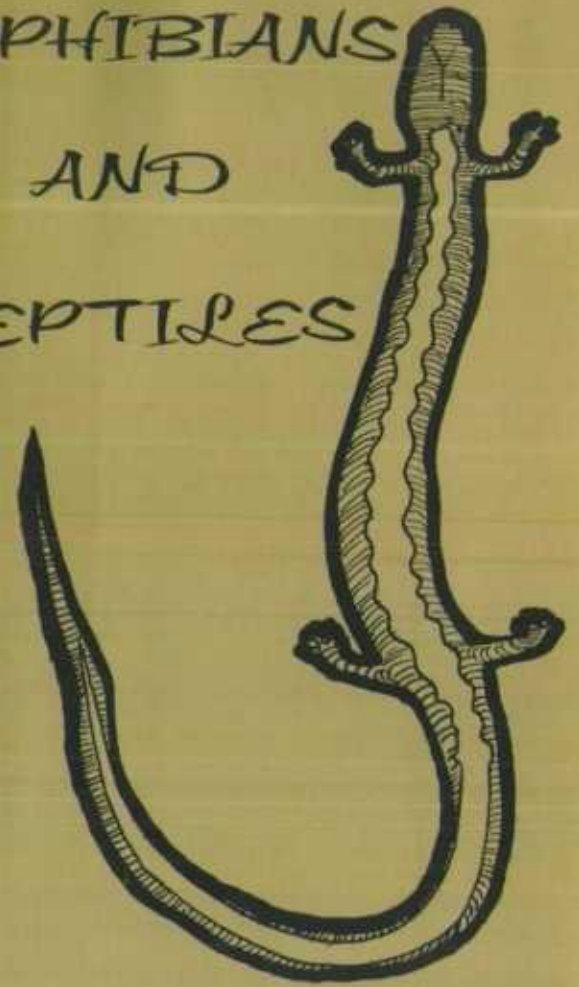
Evidently, this locality was never within the original range of the American alligator (*Alligator mississipiensis*). However, there have been a number of saurians sighted on the refuge by reliable observers, and these are probably young alligators or tropical caimans brought here as pets and later released in the reservoir.

*These may occur on the refuge, but frequently integrate with closely related subspecies.

**These have not been collected from the refuge, but are known to occur in this general locality.

DEPARTMENT OF THE INTERIOR
U.S. Fish and Wildlife Service
RF-43660-5 MAY 1980

AMPHIBIANS AND REPTILES



WHEELER NATIONAL WILDLIFE REFUGE

(Prepared by Drs. Dan W. Speake and Robert Mount)

Covering approximately 34,500 acres, the Wheeler National Wildlife Refuge includes sloughs, creeks, branches, springs, caves, woodland, and open fields. Its amphibian and reptile life is varied and interesting. These cold-blooded creatures are most in evidence during the warmest months. As with all refuge wildlife, they are protected and must not be harmed, but should be appreciated for the interest and variety they add to the outdoors. If you find errors in this list, or identify species not included on it, please contact the refuge office at Box 1643, Decatur, Alabama 35601.

AMPHIBIANS

Amphibians are creatures with moist skins. The majority are able, at least during certain phases of their life cycle, to breathe both on land and under water. They include:

TOADS AND TREEFROGS

Spadefoot Toad (*Scaphiopus holbrooki*). Common.
American Toad (*Bufo americanus*). Common.
Fowlers Toad (*Bufo woodhousei fowleri*). Common.
Northern Cricket Frog (*Acris crepitans crepitans*). Common.
Northern Spring Peeper (*Hyla crucifer crucifer*). Common.
Eastern Gray Treefrog (*Hyla versicolor versicolor*). Common.
Upland Chorus Frog (*Pseudacris triseriata feriarum*). Common.
Mountain Chorus Frog (*Pseudacris brachyphona*). Common.
Eastern Narrow-mouthed Toad (*Gastrophryne carolinensis*). Common.

TRUE FROGS

Bullfrog (*Rana catesbiana*). Uncommon.
Green Frog (*Rana clamitans melanota*). Common.
Southern Leopard Frog (*Rana pipiens sphenocephala*). Fairly common.

NEWTS AND SALAMANDERS

These are harmless, lizard-like amphibians with moist skins, found in water, caves, and wet locations. They are often called mudpuppies, waterdogs, or spring lizards.
Hellbender or Waterdog (*Cryptobranchus alleganiensis alleganiensis*). Rare.
Mudpuppy (*Necturus maculosus maculosus*). Common.
Red-spotted Newt (*Notophthalmus viridescens viridescens*). Fairly common.
Spotted Salamander (*Ambystoma maculatum*). Common.
Marbled Salamander (*Ambystoma opacum*). Common.
Small-mouthed Salamander (*Ambystoma texanum*). Rare.
Eastern Tiger Salamander (*Ambystoma tigrinum tigrinum*). Fairly common.
Dusky Salamander (*Desmognathus fuscus*). Common.
Zigzag Salamander (*Plethodon dorsalis*). Fairly common.
Slimy Salamander (*Plethodon glutinosus glutinosus*). Fairly common.
Northern Red Salamander (*Pseudotriton ruber ruber*). Fairly common.
Long-tailed Salamander (*Eurycea longicauda longicauda*). Fairly common.
Two-lined Salamander (*Eurycea bislineata ssp.*). Fairly common.
Cave Salamander (*Eurycea lucifuga*). Uncommon, but occurs in local caves.

REPTILES

Reptiles differ from amphibians in that they don't have slime on their bodies and must breathe air, even though some species live in water.

TURTLES

Common Snapping Turtle (*Chelydra serpentina serpentina*). Common.
Common Musk Turtle (*Sternotherus odoratus*). Common.
Eastern Mud Turtle (*Kinosternon subrubrum subrubrum*). Common.
Eastern Box Turtle, Tortoise or Terrapin (*Terrapene carolina carolina*). Common.
Map Turtle (*Graptemys geographica*). Common.
Ouachita Map Turtle (*Graptemys pseudogeographica ouachitensis*). Common.
*Southern Painted Turtle (*Chrysemys picta dorsalis*). Common.
*Midland Painted Turtle (*Chrysemys picta marginata*). Common.
*Cumberland Turtle (*Pseudemys scripta troosti*). Common.
*Red-eared Turtle (*Pseudemys scripta elegans*). Common.
River Cooter (*Pseudemys concinna concinna*). Common.
Midland Smooth Softshell Turtle (*Trionyx muticus muticus*). Uncommon.
Eastern Spiny Softshell Turtle (*Trionyx spinifer spinifer*). Uncommon.

LIZARDS

Contrary to popular superstition, there are no poisonous lizards in the Eastern United States. These harmless and interesting reptiles are beneficial, feeding primarily on insects.
Green Anole or Chameleon Lizard (*Anolis carolinensis carolinensis*). Rare.
Fence Lizard or Rustycut (*Sceloporus undulatus hyacinthimus*). Fairly common.
Six-lined Racerunner (*Cnemidophorus sexlineatus*). Uncommon.
Eastern Glass Lizard, Joint Snake, or Glass Snake (*Ophisaurus attenuatus longicaudus*). Fairly common.
Ground Skink (*Lygosoma laterale*). Common.
Five-lined Skink (*Eumeces fasciatus*). Common.
Southeastern Five-lined Skink (*Eumeces inexpectatus*). Uncommon.
Broad-headed Skink (*Eumeces laticeps*). Common.

NON-POISONOUS SNAKES

Although the inexperienced should stay well away from all snakes, those listed under this category are completely without poison and harmless. They may bite humans, but the resulting wounds are inconsequential. Many of these snakes are beneficial, feeding on insects. Like all creatures on this refuge, they are protected and must not be harmed.
Eastern Smooth Earth Snake (*Virginia valeriae valeriae*). Fairly common, though seldom seen.
Northern Red-bellied Snake (*Storeria occipitomaculata occipitomaculata*). Common.
Midland Brown Snake (*Storeria dekayi wrightorum*). Common.
Midland Water, or Fish Snake (*Natrix sipedon pleuralis*). Common.
Yellow-bellied Water, or Fish Snake (*Natrix erythrogaster flavigaster*). Common.
Queen Snake (*Regina septemvittata*). Common.
Eastern Garter Snake (*Thamnophis sirtalis sirtalis*). Common.
Eastern Ribbon Snake (*Thamnophis sauritus sauritus*). Common.
**Western Mud or Horn Snake (*Farancia abacura reinwardti*). Uncommon.
Hognose Snake, Spreading Adder, or Puff Adder (*Heterodon platyrhinos*). Common.
*Northern Ringneck Snake (*Diadophis punctatus edwardsii*). Common.
*Mississippi Ringneck Snake (*Diadophis punctatus stictogenys*). Fairly common.

THE CANADA GOOSE

WHEELER NATIONAL WILDLIFE REFUGE

DEPARTMENT OF THE INTERIOR
U.S. FISH AND WILDLIFE SERVICE

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interests of all our people. The Department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

RF-43660-2 OCTOBER 1984

THE CANADA GOOSE at Wheeler



THE ARRIVAL

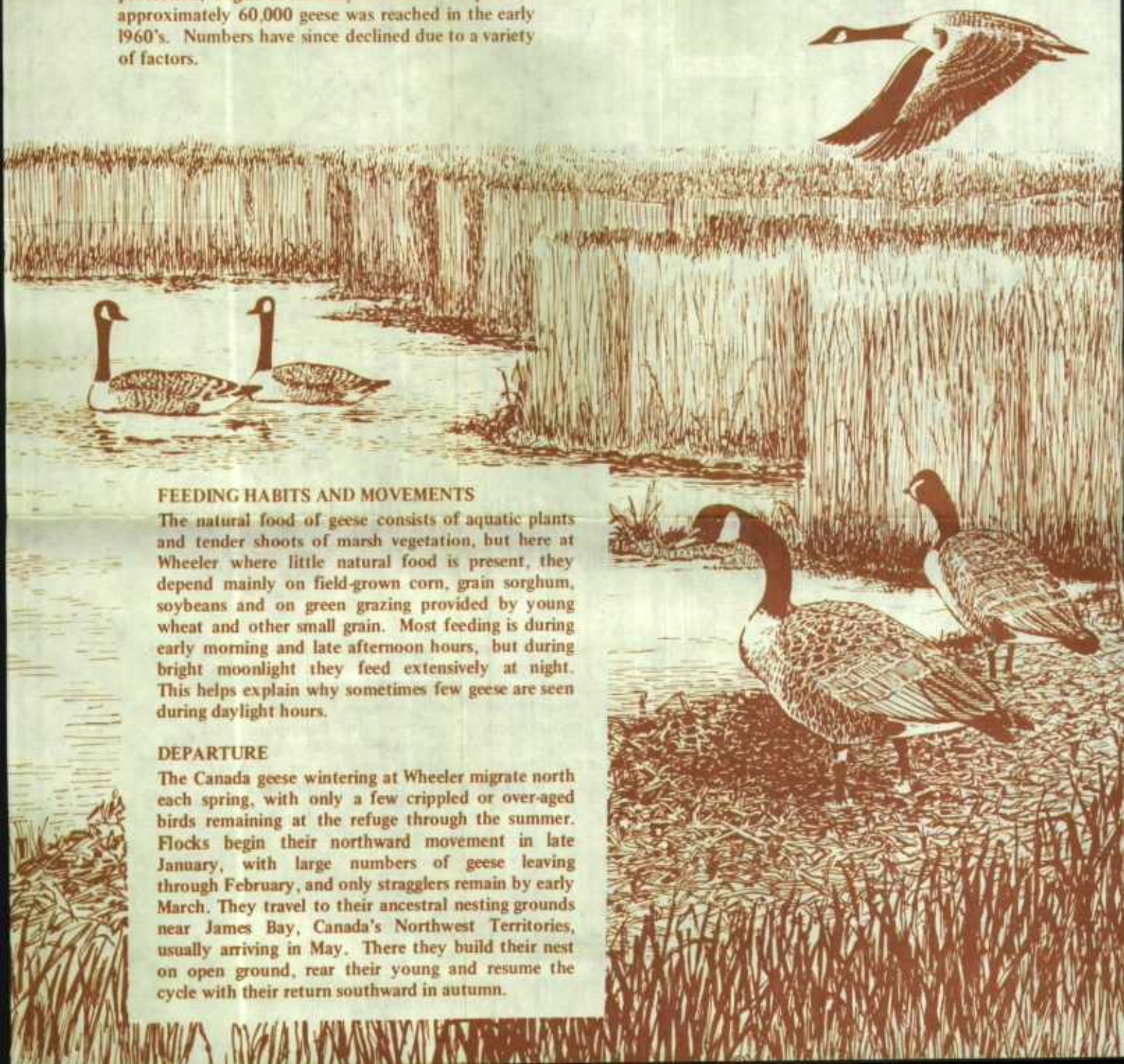
The advanced guard usually arrives in mid-September and goose numbers increase steadily throughout fall and early winter. A peak is reached between mid-December and mid-January.

NESTING AND FAMILY LIFE

Canada geese were first noted on Wheeler Refuge during the fall of 1940. From the small flock of fifteen seen then, geese, reacting quickly to food and protection, began to steadily increase. A peak of approximately 60,000 geese was reached in the early 1960's. Numbers have since declined due to a variety of factors.

MIGRATION

There has been much speculation as to what stimulates geese to begin their spring and fall migrations. The increasing or decreasing length of days, combined with weather conditions and other variables, are significant factors in goose migration. Fat deposits accumulated just prior to migration provide energy for the long flight. The usual "V" flight formation provides each goose (except the leader) with favorable air currents in which to fly. Older geese alternately share the lead position. Flocks have been observed at altitudes of 29,000 feet, although normal migration seldom exceeds 3,000 feet.



FEEDING HABITS AND MOVEMENTS

The natural food of geese consists of aquatic plants and tender shoots of marsh vegetation, but here at Wheeler where little natural food is present, they depend mainly on field-grown corn, grain sorghum, soybeans and on green grazing provided by young wheat and other small grain. Most feeding is during early morning and late afternoon hours, but during bright moonlight they feed extensively at night. This helps explain why sometimes few geese are seen during daylight hours.

DEPARTURE

The Canada geese wintering at Wheeler migrate north each spring, with only a few crippled or over-aged birds remaining at the refuge through the summer. Flocks begin their northward movement in late January, with large numbers of geese leaving through February, and only stragglers remain by early March. They travel to their ancestral nesting grounds near James Bay, Canada's Northwest Territories, usually arriving in May. There they build their nest on open ground, rear their young and resume the cycle with their return southward in autumn.