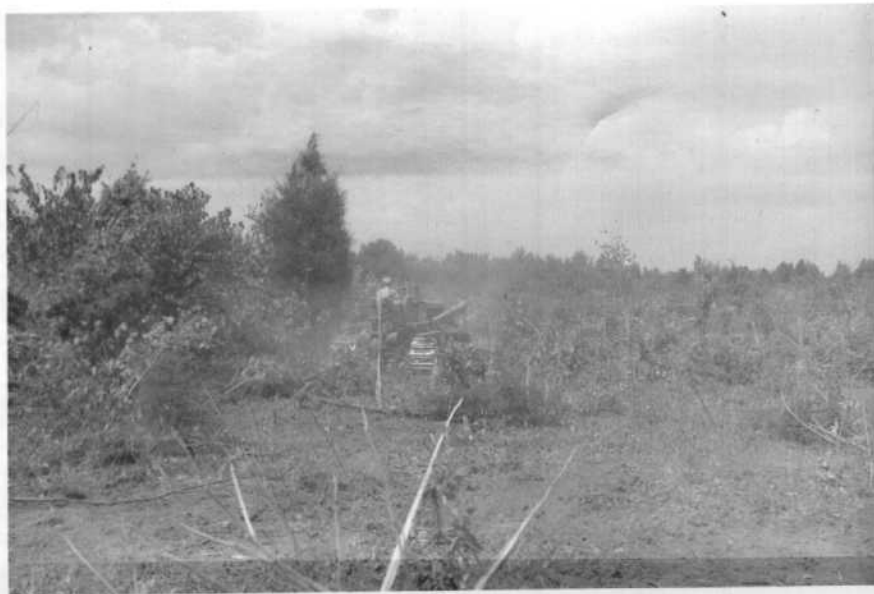


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No.3. View of area, starting initial cleanup at extreme eastern end of White Springs area.



No. 4. View of area, starting initial cleanup at extreme eastern end of White Springs area.

WHEELER NATIONAL WILDLIFE REFUGE

NARRATIVE REPORT

JANUARY - APRIL, 1957

.I. GENERAL

A. Weather Conditions:

<u>Month</u>	<u>Precipitation</u>	<u>Max. Temp.</u>	<u>Min. Temp.</u>
January	10.00	74	12
February	3.56	77	29
March	3.21	72	28
April	2.43	86	35

Continuous rains fell throughout the period until mid-April, and temperatures were somewhat higher than normal. The rains resulted in the best accumulation of soil moisture that this locality has experienced in the past 6 or 7 years. There was light sleet and snow, but none remained on the ground for more than a few hours.

Comparing the weather with that of the same period last year, rainfall was much heavier and temperatures slightly higher. There were no late freezes to damage fruit and nut production. Wet weather prevented the use of machinery and extensive field and farm work, although much of this has been done during the drier two weeks at the end of the period.

B. Water Conditions:

Wheeler Reservoir (556' bank-full level)

<u>Month</u>	<u>Elevation Range</u>	<u>Flow Range</u>
January	550.7 - 554.8	26,200 - 211,200
February	551.5 - 557.9	76,200 - 345,300
March	550.6 - 553.1	26,800 - 92,900
April	553.1 - 556.3	26,900 - 85,500

1. General Reservoir Levels: At the beginning of the period the reservoir level was only slightly above the 550 foot mark. Regular rains were falling and these became heavier in mid-January, with the reservoir level slowly rising.

	(5)	(6)	(7)
	Total Days Use	Peak Number	Total Production
Swans			
Geese	1246	50	
Ducks	91,575	1,000	101 broods
Coots	1,960	100	

# SUMMARY

Principal feeding areas scattered.

Principal nesting areas scattered

Reported by

Charles M. Parker, Refuge Manager

## INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.
- (2) Weeks of Reporting Period: Estimated average refuge populations.
- (3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.
- (4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (5) Total Days Use: A summary of data recorded under (3).
- (6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.
- (7) Total Production: A summary of data recorded under (4).



No. 5. Partial view of same area completed as shown in photos 3 and 4. Area plowed with heavy Rome harrow and disced.



No. 6. Area cleared last fall with piles burned, land plowed, disced, and seeded to oats. Picture taken from southeast of area looking west.

By January 28, flood stage had been reached and by early February gauges read above flood stage. The Decatur gauge reading was in excess of 558 feet, while pileup on creeks and upriver brought levels above the 560 contour. Fully 80 per cent of all refuge land was flooded.

With the heavy rains general, T.V.A. storage reservoirs were closed in an effort to prevent flooding the city of Chattanooga. When the flood threat began to subside, these storage reservoirs were over full and heavy rainfall was still predicted. This resulted in tributary reservoirs discharging water rapidly downstream in an effort to bring levels to a safe point. This caused local main river levels to remain at or near flood stage for at least 3 weeks, the longest flood period experienced in the history of the refuge and, according to local sources, the highest water levels in over 30 years.

This flood caused minor damage to fills and bridges and heavy damage to roads, especially those along the river bank. Fields were littered with drift and some were covered with layers of sand and silt. Stretches of river bank, including that between Rockhouse Landing and Limestone Creek, that between Cave Springs Branch and Flint Creek and that between the mouth of Cotaco Creek and Bluff City, were badly eroded. Small grain crops suffered the heaviest damage ever experienced here, with most of those on low areas a total loss.

For a brief period between the third week of February and mid-March the reservoir was brought down to about the 551 foot mark, but spring filling began in mid-March and, helped by continued rains, the lake was slightly above bank-full by the beginning of the second week of April.

(1)	(2)		(3)		(4)		(5)			(6)
III. <u>Doves and Pigeons:</u>										
Mourning dove	Permanent resident		1500	Aug. 31	-	-	-	500	700	2500
White-winged dove										
IV. <u>Predaceous Birds:</u>										
<del>Bald</del> <del>Cockspur</del> eagle	1	May 1	4	May 1	2	Aug. 22	-	-	-	6
Duck hawk										
Horned owl										
Magpie										
Raven										
Crow	Permanent resident		1100	Aug. 31	-	-	-	325	950	1500
Cooper's Hawk			250	Aug. 31	-	-	-	70	200	450
Sharp-shinned hawk			75	Aug. 31	-	-	-	20	45	175
Barred owl			60	Aug. 31	-	-	-	15	35	85
Sparrow hawk			50	Aug. 31	-	-	-	25	50	100
Red-shouldered hawk			425	Aug. 31	-	-	-	100	250	600
Reported by.....										

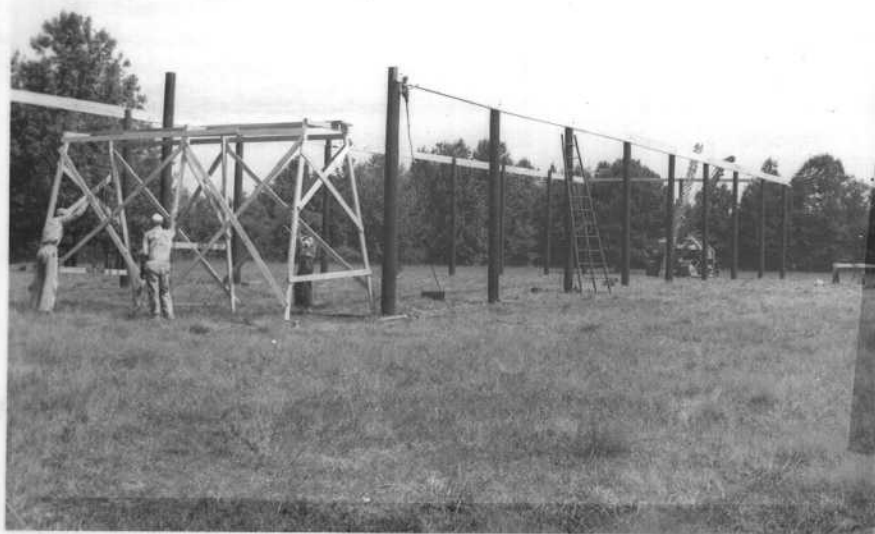
Charles A. Parker

#### INSTRUCTIONS

- (1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiformes)  
 II. Shorebirds, Gulls and Terns (Charadriiformes)  
 III. Doves and Pigeons (Columbiformes)  
 IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)
- (2) First Seen: The first refuge record for the species for the season concerned.
- (3) Peak Numbers: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned.
- (5) Production: Estimated number of young produced based on observations and actual counts.
- (6) Total: Estimated total number of the species using the refuge during the period concerned.



No. 7. Same area as No. 6 with picture taken from exact location looking north.



No. 8. Partial construction of equipment shed at end of period.



At the end of the period the reservoir gauge read 556 or slightly above.

2. Dewatered Units: At the beginning of the period, the White Springs unit was at about the 553.5 contour and the Rockhouse-Buckeye-Blackwell unit at about the 554 mark. Regular rains kept both units rising and they were at or near the 555 mark by the end of the waterfowl season. With heavy rains predicted, T.V.A. opened all flood gates in both units and quickly drew the upper unit down to river level, about the 552 mark, and the White Springs unit down to the 554 mark. The flood of late January and early February completely filled both units, submerging the White Springs dike. In late February T.V.A. again opened all flood gates in an effort to draw the units down, then bank-full. The upper unit soon dropped to river level, about the 552 mark, and the gates were closed. The White Springs unit drained slowly and was at the 554 mark when gates were closed in early March. Since the closing of the gates, rain has raised the levels of both units and both now stand at about the 554.5 contour, with pumping due to begin May 1.

T.V.A. plans mosquito control experiments in Blackwell Swamp. Blackwell will be cut off from Buckeye and Rockhouse Sloughs and will not be dewatered until mid-summer.

The Crabtree Slough impoundment had stoplogs set at about the 553 contour and did not drop below that level. Above that level, it fluctuated with the reservoir.

C. Fires: The wet weather of the period held fire danger low and not a single wild fire occurred.

## INSTRUCTIONS

### Form NR-2 - UPLAND GAME BIRDS.\*

- (1) SPECIES: Use correct common name.
- (2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.
- (4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.
- (5) REMOVALS: Indicate total number in each category removed during the report period.
- (6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.
- (7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

\* Only columns applicable to the period covered should be used.

3-1570  
NR-8a

# REFUGE GRAIN REPORT

Refuge Wheeler

Months of May thru August 1957.

(1) VARIETY	(2) ON HAND BEGINNING OF PERIOD	(3) RECEIVED DURING PERIOD	(4) TOTAL	(5) GRAIN DISPOSED OF				(6) ON HAND END OF PERIOD	(7) PROPOSED USE		
				TRANS- FERRED	SEEDED	FED	TOTAL		SEED	FEED	SURP.
Milo	500 bu	125 bu	625 bu	0	500 bu	0	500 bu	125 bu	125 bu	0	0
Shelled corn	60 bu	0	60 bu	0	0	0	0	60 bu	0	0	60 bu
Brown-top millet	735 bu	10 bu	795 bu	0	770 bu	0	770 bu	25 bu	25 bu	0	0
Japanese millet	90 bu	90 bu	180 bu	0	130 bu	0	130 bu	50 bu	50 bu	0	0
Pearl millet	45 bu	0	45 bu	0	30 bu	0	30 bu	15 bu	15 bu	0	0
Black millet	1 bu	0	1 bu	0	1 bu	0	1 bu	0	0	0	0
Siberian Millet	4 bu	0	4 bu	0	4 bu	0	4 bu	0	0	0	0
Tenn. millet	0	2 bu	2 bu	0	2 bu	0	2 bu	0	0	0	0
Combine compens	34 bu	16 bu	50 bu	0	18 bu	0	18 bu	32 bu	17 bu	0	15 bu
Gar peas	4 bu	0	4 bu	0	2 bu	0	2 bu	2 bu	0	0	2 bu
Dorman soybeans	60 bu	0	60 bu	0	60 bu	0	60 bu	0	0	0	0
Ogden soybeans	40 bu	0	40 bu	0	40 bu	0	40 bu	0	0	0	0
Pasero	0	65 bu	65 bu	0	0	0	0	65 bu	65 bu	0	0
Ryegrass	70 bu	710 bu	780 bu	0	0	0	0	780 bu	780 bu	0	0
Oats	0	655 bu	655 bu	0	0	0	0	655 bu	655 bu	0	0
Wheat	0	315 bu	315 bu	0	0	0	0	315 bu	315 bu	0	0

(8) Indicate shipping or collection points \_\_\_\_\_

(9) Grain is stored at \_\_\_\_\_

(10) Remarks \_\_\_\_\_

*CWP*

## II. WILDLIFE

### A. Migratory Birds:

#### 1. Population and Behavior.

a. Geese: Only a single airplane count was taken during the period, January 12. This showed 16,000 geese, all Canadas except 300 blues and 30 snow geese. No blue geese or snow geese were seen after the beginning of flood conditions during the last few days of January. While continuous rain prevented further airplane counts during January, February, and early March, ground observations indicated a steady drop in goose numbers after late January. The last flock of migrant Canada geese was noted on April 22.

Comparing this period with the same period in 1956, blue and snow goose numbers were approximately the same, but Canada geese showed a 20 per cent decline. Comparing goose numbers of the 1956-57 season with those of the 1955-56 season shows no real change in the peak population, although this peak came earlier in the 1956-57 season. While Canada goose numbers showed little or no change, blue geese declined about 65 per cent and the majority of the birds were adults. Actually, the Wheeler Canada/<sup>goose</sup>flock has shown little change in the past 3 seasons. This may indicate that the refuge has reached its carrying capacity or may be only a temporary leveling off that will be followed by another increase.

The cannon trap was kept in operation throughout most of January and 16 more Canada geese were caught. All total, 44 Canada geese were trapped during the 1956-57 season, with 34 of these moved to Noxubee Refuge and 10 banded and released.

NR-8a

REFUGE GRAIN REPORT

This report should cover all grain on hand, received, or disposed of, during the period covered by this narrative report.

Report all grain in bushels. For the purpose of this report the following approximate weights of grain shall be considered equivalent to a bushel: Corn (shelled)—55 lbs., Corn (ear)—70 lbs., Wheat—60 lbs., Barley—50 lbs., Rye—55 lbs., Oats—30 lbs., Soy Beans—60 lbs., Millet—50 lbs., Cowpeas—60 lbs., and Mixed—50 lbs. In computing volume of granaries, multiply the cubic contents (cu. ft.) by 0.8 bushels.

- (1) List each type of grain separately: Corn, wheat, proso millet, etc. Include only domestic grains; aquatic and other seeds will be listed on NR-9.
- (3) Report all grain received during period from all sources, such as transfer, share-cropping, or harvest from food patches.
- (4) A total of Columns 2 and 3.
- (6) Column 4 less Column 5.
- (7) This is a proposed breakdown by varieties of grain listed in Column 6.
- (8) Nearest railroad station for shipping and receiving.
- (9) Where stored on refuge: "Headquarters grainary", etc.
- (10) Indicate here the source of grain shipped in, destination of grain transferred, data on condition of grain, unusual uses proposed.

Hunting success continued high until the close of the waterfowl season. The majority of the hunter groups that keep a record of the kill showed an increase. The goose kill on Wheeler Reservoir and adjoining land is estimated at 600 to 800 for the season, with all of these Canadas except about a dozen blue geese. No snow geese were known to have been killed.

b. Ducks: The January 12 airplane count showed 26,000 ducks of all species present. The flood conditions, beginning in late January, scattered these birds widely and ground observations indicated a steady drop in numbers throughout the remainder of the period. At the end of the period, only a few blue-wing teal, mallards, black ducks, and coots remained.

Comparing the duck population this period with that of the same period last year indicates a drop of almost 50 per cent, with much lighter use throughout late January, February, and early March. However, comparing the 1956-57 season with the 1955-56 season peaks shows a marked increase, with the highest duck count ever taken at Wheeler, 86,000, recorded in late November.

Again, black ducks had been especially scarce and gadwall, often abundant, were almost absent this season. Mallards, pintails, and baldpates made up the bulk of the populations.

For the past two seasons, an early morning movement of birds to the eastward has been noted. This past season about 30,000 ducks were using Gunter'sville Reservoir at times. It is believed that these birds spent the nights on the refuge, then moved to Gunter'sville Reservoir during the day.

NR-8a

REFUGE GRAIN REPORT

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- (8) Nearest railroad station for shipping and receiving.
- (9) Where stored on refuge: "Headquarters grainary", etc.
- (10) Indicate here the source of grain shipped in, destination of grain transferred, data on condition of grain, unusual uses proposed.

Hunter success continued good until the close of the waterfowl season, and it is estimated that 10,000 ducks were bagged on Wheeler Reservoir and adjacent areas during the 1956-57 season.

The cannon trap was kept in operation most of January and over 300 ducks were banded. This brought the banding total for the 1956-57 season to 1,165 ducks banded and released, an all-time record for this refuge.

Wheeler personnel have reviewed all old schedules on file and find the following waterfowl have been trapped and banded since banding began in 1941:

<u>Geese:</u>		<u>Ducks(continued)</u>	
Canada geese	194	Wood ducks	3
Blue geese	5	Redheads	1
Snow geese	<u>1</u>	Canvas back	1
Total geese	200	Greater scaup	2
		Lesser scaup	4
<u>Ducks:</u>		Ringnecks	25
Mallard	3,637	Ruddy ducks	<u>1</u>
Black duck-mallard hybrids	12	Total ducks	5,297
Black ducks	491		
Baldpates	615	Coots	12
Gadwalls	129	Total waterfowl banded	5,509.
Green-winged teal	1		
Blue-winged teal	109		
Pintails	266		

c. Coots: Few coots were present at the beginning of the period, but there was a heavy influx during late February and early March. During the first two weeks of March, fully 2,000 - a heavy count for Wheeler - were present. The majority of these were concentrated in the White Springs unit, where the water level was high and a small amount of food still remained. A few of these birds are still present at the end of the period.



d. Doves: Throughout the period, doves have continued to show an increase over last year's population amounting to fully 10 per cent. There has been no sign of disease. During the January portion of the open dove season, hunting pressure was light but success was high. Nesting began in late March and became heavy through April.

e. Shorebirds and Other Migrants: No change was noted in snipe and woodcock numbers. Small flocks of greater yellow-legs were present throughout January and until dispersed by floods in late January and early February. On both January 11 and 12 Thomas A. Imhof, Birmingham ornithologist, noted a single western meadowlark on Flint Creek Island. Identification was based on color, flight, and call. This was a new record, both for the refuge and for the State. It was not collected.

2. Food and Cover: Only traces of upland hard food remained at the beginning of the period. Virtually all food had been cleaned up in the Rockhouse and Buckeye Sloughs, although a small amount still remained in the White Springs unit. This lack of food caused field-feeding ducks to scatter and make heavy use of private upland, miles from the reservoir.

The flood in late January and early February completely filled dewatered units, allowing birds to clean up the high edges. Reservoir levels rose to above the 560 ' mark in many locations and over 80 per cent of the refuge was flooded. This made an abundance of natural food available, but caused birds to scatter widely over the flooded area. After the flood, continued high levels in the White Springs unit attracted an unusual number of spring waterfowl migrants, especially coots.

Although there were over 1,800 acres of good green forage on the refuge, warm weather in January and early February caused an unusually heavy use by geese. Due probably to late planting and soil softened by continuous rains, goose damage to young small grain stands was the worst ever experienced here.

3. Botulism: No Botulism has ever occurred here and none was noted this period.

4. Lead Poisoning and Other Diseases: No lead poisoning or other diseases were noted among waterfowl, and no Trichomoniasis was noted among doves.

B. Upland Game Birds:

1. Populations and Behavior: As noted last period, bobwhites have increased locally. However, the heavy flood of this period covered over 80 per cent of the refuge area, forcing coveys to use private land. Since the quail season was open at the time, hunters worked over the land adjacent to the boundary and killed large numbers of quail. More Coturnix quail were released in this locality this spring, but none have been seen on the refuge.

2. Upland Food and Cover: The flood conditions that were in effect for about three weeks caused food and cover shortages among all upland game. However, the warm, rainy weather since brought out early green stuff. There have been no late hard freezes to reduce the production of wild nuts, fruits, and berries.

3. Diseases: No disease was noted among upland birds this period. A dying bobwhite was found on the headquarters area and sent to the research unit at Auburn for autopsy. Reports showed that the bird had been injured, probably from flying into a building.

C. Big Game /nimals:

No deer or other big game occurred on the refuge this period.

D. Fur Bearers, Predators, etc:

Like quail, refuge rabbits were driven by the flood to private land, where hunters killed them in large numbers. However, sufficient breeding stock remains, and numbers will probably be high by fall.

More squirrels are present than usual for this period, and it seems likely that the fall population will be high. Again, slight increases were noted among foxes and mink, but no change among other fur bearers.

E. Predaceous Birds:

Bald eagles showed a definite increase during January and February. On January 12, while guiding a University of Alabama group around the White Springs dike, refuge personnel counted ten of these birds in that locality alone.

A huge blackbird roost was located on the refuge in the Brushy Creek locality at the southern edge of Decatur throughout January and February. At least 150,000 grackles, starlings, redwings, cowbirds, and rusty blackbirds were estimated using this nightly.

The Whitesides crow roost continued in use throughout January, but the birds dispersed with the flood and warm weather of early February. From 150 to 180 thousand crows were estimated using it nightly. Efforts to break it up were not resumed this period.

No change has been noted among the hawks and owls using the refuge, although a marsh hawk roost was found a short distance off the refuge area. Throughout January and February these birds roosted in an open field of tall fescue, trampling out nestlike depressions in it. Hawks began assembling before sunset. Local residents reported a hundred or more using the small area, but refuge employees never counted more than 25 at one time.

F. Fish:

T.V.A. and State specialists report no major changes in fish populations during this period.

### III. REFUGE DEVELOPMENT AND MAINTENANCE

A. Physical Developments:

1. Field Work:

a. Field Jobs: The continuous rains of the period prevented the use of heavy machinery and kept field work at a minimum. Only a small amount of soil and moisture work was possible. Three thousand loblolly pine seedlings were planted on three acres of eroding land along the south side of Garth Slough. All Flint Creek Island fields have been previously limed at the general rate of a ton and a half per acre. To bring these to the proper ph, field by field acidity tests were made, 120 tons of lime purchased and this spread on those fields not now in crops.

The majority of the field work done involves roads and bridges. By arrangement with Limestone County, the new road from John Gordon's to Buckeye Slough - about one-fourth mile - was well graveled. The graveling of the Beaverdam Peninsula road system, begun last period, was completed for a distance of 4 miles.

The graveling of the White Springs dike, also begun last period, was completed, with the 4-1/2 mile stretch from Highway 31 to the river heavily graveled, the strip along the river bank spot-graveled in soft places and the road from the river bank to the Yellow Gal gate well covered with a layer of gravel. A total distance of a little over 7 miles.

The refuge work crew rebuilt 3/4-mile of road leading into Cain's Landing. Low roads suffered badly from the flood, and the 2-1/2-mile section of the river bank road below the mouth of Cave Springs run required complete rebuilding. The south boundary truck trail was graded, ditches pulled, culverts cleaned out and brush cut back for the 2-1/2-mile stretch between Cave Springs and the Martin's Branch. At the end of the period, the twelve mile stretch of truck trail between Highway 67 and Cave Springs was in the process of a thorough reworking.

A temporary bridge built across Martin's Branch a few years ago by cooperators was wrecked by the flood. Refuge personnel replaced this with a substantial bridge, complete with center support, built on creosoted timber. A similar bridge was built across McClosky's Branch a short distance above its mouth. This will permit ready access to the Bluff City area by refuge personnel and farmers, enabling better protection from fire and poaching in one of the worst trouble spots on the south side of the refuge. (Photos in appendix )

b. Miscellaneous Jobs: In addition to the above, many smaller jobs were completed during the period. Two trips were made, one to the Army Depot in Memphis to procure a surplus D-7 and the other to Reelfoot Refuge for surplus millet and soy bean seed.

Surplus ear corn was transferred to the Chassahowitzka Refuge, and the remaining ear corn was shelled and sacked. The old D-7 tractor was transferred to the Alabama Health Department. Waterfowl trapping and banding work continued. Patrol was maintained as long as waterfowl concentrations were present. All farming agreements were renegotiated. Public relations were kept up and many visiting groups were guided on tours of the refuge.

2. Headquarters Development and Maintenance: Equipment building doors, a continuous source of trouble, were reworked this period and several were rehung. The entrance road and parking area were graded. Window panes were replaced in buildings and other minor repairs were made. Shrubbery was kept pruned and the office and headquarters grounds were kept mowed. Signs around headquarters area were repainted.

3. Vehicle and Equipment Maintenance and Repair: Advantage was taken of the wet weather to do considerable work on vehicles and equipment. One of the 1948 Ford trucks had spindle bolts, spring hanger bushings and brake shoes replaced, the entire unit was reconditioned and painted. The jeep pickup, No. I-19556, had window glasses replaced, carburetor reworked, frame tightened, etc. The Dodge power wagon was completely reconditioned with new valves, rings, etc., installed.

One of the D-8 tractors had tracks and bottom rollers replaced and was generally serviced and readied for use. The newer M.M. tractor was repainted and thoroughly checked. Brush protectors were made and installed on the Oliver and Case tractors. All tractors, wheel and track laying, were readied for spring use.

All discs and heavy harrows were reworked, necessary boxing and bearings replaced and some of these units repainted.

The two spreader-seeders were repaired, worn movable parts replaced and both were repainted.

All fire extinguishers were checked. The old Pyrene type used in vehicles were discarded and replaced by the new powder type, and several of the powder type were installed in buildings.

B. Plantings:

1. Aquatic and Marsh Plantings: No plantings of this type were made this period.

2. Trees and Shrubs: In early February 3,000 loblolly pine seedlings were planted on 3 acres of eroded land on the south side of Garth Slough. To date, survival seems 100 per cent. Arrangements have been made for the State Forestry Department to donate 5,000 loblolly seedlings for similar planting next fall and winter.

3. Upland Herbaceous Plants: There were no plantings of this type this period.

4. Cultivated Crops: While a high acreage of wheat and oats was planted on the refuge last fall, production may be low. The flood of January and February covered many low-lying fields for 3 weeks, wiping out or badly damaging stands. Due probably to wet soil, goose damage was the worst ever experienced here. Even on high fields, acreage was reduced by ponded pockets of water. The warm, wet weather has caused considerable infestation of rust, smut, and Helminthosporium blight. Wheeler small-grain yields may be the lowest in several years. Considering the losses from geese and disease, if grain prices are low this summer, there may be difficulty in persuading local farmers to plant enough small grain this fall to furnish forage for the wintering geese.

While it has not been made official yet, A.S.C. employees tell us that it is probable that a wheat acreage quota will be in effect here this fall. It appears that the Wheeler corn acreage will not be affected by local quotas. Refuge personnel have kept in close contact with A.S.C. officials concerning this and similar problems.

Refuge and S.C.S. employees have continued to work on farm plans.

Flint Creek Island fields have been limed over a period of 5 or 6 years and at a flat rate of about 1-1/2-tons per acre. To bring these fields to the proper ph, soil acidity test kits were purchased. Helped by S.C.S., each field was tested. One hundred twenty tons of lime was bought and spread on the fields still acid. More is needed and will be applied later.

Wet weather has limited farm work. At the end of the period, only about 70 per cent of the Wheeler crop land has been broken and about 20 per cent of it planted.

Some 1957 farming figures may be of interest. There are 83 cooperative farming agreements, one cash hay rental, and 6 cash pasture rentals. Total rentals, cash and cooperative, 90, plus one free-use permit to the Sanitorium. There are 5,985 acres under cooperative agreements. Excluding pasture, hay and summer fallow, there are 4,043 acres in various row and broadcast crops, mainly corn. Total land in use in 1957, including that under cooperative agreements, cash-rented hay and pasture land, and 60 acres of pasture donated to the Sanitorium, 6,113 acres..

This year, the Nigger Slough Island, a tract of about 40 acres heavily infested with Johnson grass, will be summer-fallowed and broken or disced at two- or three-week intervals in an effort to wipe out the Johnson grass.



It will be planted to green stuff in mid-fall to provide goose forage.

C. Collections:

1. Seed and Other Propagules: There were no seed collections this period.

2. Specimens: No specimens were collected this period. However, David Hulse, the waterfowl artist, shot a drake old squaw - rare here - on the Swan Creek area during the hunting season. He put up a study skin and donated it to the refuge collection.

D. Receipts of Seed and Nursery Stock:

Two hundred pounds of Siberian millet were purchased and will be used for experimental planting. A hundred bushels of Dorman and Ogden soybeans and 2,400 lbs. of Japanese millet were transferred to Wheeler from the Reelfoot Refuge.

#### IV. ECONOMIC USE OF REFUGE

A. Grazing:

There are six cash pasture rentals for 1957, covering 57 acres and 119 animal-use months. For this \$119.00 in revenue was collected. In addition, 1,392 acres of pasture are included in cooperative farming agreements.

The flood of the period forced livestock off virtually all refuge pastures, since these are located mainly on low areas unsuited to row-cropping. The flood itself and resulting poor vegetation afterwards practically stopped grazing for a two-months period. There was some flood damage to pasture stands, although fescue survived better than was expected. Warm weather and heavy rainfall during the latter part of the period have kept most of the pastured area in good condition.

B. Haying:

Only a single cash hay rental is in effect for 1957. This covers 11 acres and resulted in \$44.00 revenue. However, 445 acres of alfalfa and other hay crops <sup>are</sup> ~~is~~ included in cooperative agreements. No hay has been cut during this period.

C. Fur Harvest:

No fur trapping was done during the period.

D. Timber Removal:

During the period, T.V.A. sold 1,300 black locust posts from refuge land at 20 cents each for a sum total of \$260.00.

An 11-acre loblolly pine plantation near White Springs was thinned in March. Eighty cords of pulpwood were removed, bringing \$3.40 a cord for a total return of \$272.00.

T.V.A. employees are now marking parts of the pine stand along the western side and northern end of Blackwell Swamp. This will be thinned for pulpwood in the near future.

E. Other Uses:

The 1956 mussel shell harvest figures are now available. Reports show that a total of 1084 tons of shell were taken from the refuge last year. These brought an average price of \$55.00 a ton. The total value of shells, pearls and slugs is set at \$64,150.00.

Comparing the 1956 catch with that of 1955 indicates that the shell catch has dropped by approximately 40 per cent. This steady decline has continued for the past 3 or 4 years. There seems little doubt that the shell beds are being fished out. To date, only 5 cook-out sites are located on the refuge this year, a decline from 1956.

Shelling has been hampered by high winds, poor water conditions and the catch, to date, has been small. 1957 prices show an improvement, with white shells bring<sup>ing</sup> \$60.00 a ton.

#### V. FIELD INVESTIGATIONS OR APPLIED RESEARCH

Siberian millet seed have been procured and will be tested on dewatered land this summer. About 50 lbs. of black or African millet seed are on hand and these, too, will be thoroughly tested this year. The background of this plant has been checked, and it was found that the technical name is Holcus sorghum and that it is a native of the East Indies. Actually, this is no millet but a sweet-sapped sorghum, closely related to milo and other sorghum.

Considering the experience last year, this refuge has decided that Guar peas are unsuited for this locality and their use will be discontinued. Correspondence with Tom Mullins, who donated the original seed supply, indicates that he has reached the same conclusion.

#### VI. PUBLIC RELATIONS

##### A. Recreational Uses:

Heavy rains and flood conditions, bad roads and raw weather kept recreational use low during January, February, and early March. With the coming of warmer weather in mid-March the usual swarms of fishermen visited the refuge. However, fishing success has been low, showers have continued and road conditions have been generally poor, holding this use below normal.

## B. Refuge Visitors:

While regular rains kept down group visits, a number of classes and other groups have visited the refuge this period. A typical group visit includes a visit to the refuge office, examination of displays there, a short talk by refuge personnel on the history and functions of the sanctuary, a question and answer session, and a guided field trip around the White Springs dike or Flint Creek Island areas to observe waterfowl, down the headquarters nature trail or to one of the shell-cook-out sites. The following are the groups visiting this period:

<u>Date</u>	<u>Group</u>	<u>Number</u>
Jan. 7.	Decatur Cub Scouts	11
Jan. 12.	University of Alabama Class	13
Jan. 15	Cotaco School Class	33
Mar. 20	Decatur Cub Scouts	12
Mar. 29	Birmingham Boy Scouts	8
Apr. 3	Decatur Cub Scouts	10
Apr. 5	Walter Jackson School Class	45
Apr. 19	Priceville School Class	33
Apr. 22	Priceville Cub Scouts	12
Apr. 24	Cotaco School Class	27

### Official Visitors

Jan. 7,10,11. Mr. Howard A. Miller, Reg.Office.  
 April 26. Mr. L. S. Givens, " "  
 April 26 Mr. Kay, Biologist, Regional Office.  
 Feb. 26 Mr. Wm. Kelly, Dept. of Conservation.  
 Feb.20,Mar.11, Messrs. Weldon and Harrison, Huntsv. Arsenal.  
 Jan. 12 Tom Imhof, ornithologist, with State of Ala.

## C. Refuge Participation:

The manager has attended numerous Scout meetings during the period and the regular weekly meetings of the Decatur Lions Club. He has cooperated with this club in its Sight Conservation program.

On March 12 the biologist attended a meeting of the Sheffield, Alabama, Garden Club and gave a talk on birds and conservation.

He attended the March meeting of the South Limestone Sportsmen's Club, at Belle Mina, and made a short talk on quail stocking. He has attended the regular monthly meetings of the Alabama Archaeological Society.

The monthly meetings of the Morgan County Sportsmen's and Conservation Association have been attended by various members of the refuge staff.

Arrangements have been made for the spring meeting of the Alabama Ornithological Society to be held at this refuge on May 3, 4, and 5.

The manager and biologist visited Redstone Arsenal in cooperation with their plans to improve quail conditions there.

Service film has been procured for use by local groups.

#### D. Refuge Publicity:

Refuge employees have cooperated with Decatur Daily personnel in working up two feature news articles, with photos. One dealt with tree planting, the other with the refuge goose population.

Phillip Kyle, Decatur Daily sports editor, devoted one of his weekly columns, "Phil's Findings," to a defense of this refuge against further encroachments by industry and housing projects.

Ten separate news items were written by refuge personnel this period. All appeared in at least one newspaper and some in as many as 5, including papers as far distant as Birmingham and Tuscaloosa.

The regular weekly outdoors column, written by refuge personnel and appearing in the Sunday edition of the Decatur paper, was continued throughout the period.

In addition to the above, frequent favorable mention of the refuge was noted in the Decatur Daily and some other local newspapers.

A recent edition of "Boys Life" carried a listing of wildlife refuges, including Wheeler.

The article, "The Use of Dewatered Land in Southeastern Waterfowl Management," by Mr. Lawrence S. Givens and refuge personnel, was returned for revision, rewritten and again submitted to the JOURNAL OF WILDLIFE MANAGEMENT. Refuge personnel and Mr. Givens drew up a tentative draft of an article, "The Use of Green Goose Forage in the Southeast," designed for publication in the Journal. This will require further work before submission. An article, "Gray Squirrel Hunting by Shotguns Versus Rifles," designed for Journal publication, was written by refuge personnel this period and submitted to the Central Office for publication approval.

The December issue of THE WILSON BULLETIN, received this period, carried the article, "Buff-breasted Sandpiper Records from Alabama," written by Wheeler personnel.

An article, "Deep-water Ducks," was prepared by Wheeler personnel this period and publication approval was obtained. As soon as an illustration is prepared by David C. Hulse, this will be submitted to the magazine, ALABAMA CONSERVATION. "Double Trouble," by refuge employees and Agent Leo Martin, is being held for an early fall issue. An article dealing with the rise and fall of the Flint Creek Island quail population, by Dr. A. O. Haugen and refuge employees, was renamed and rewritten this period and resubmitted for Central Office approval. If this is obtained it will be submitted to ALABAMA CONSERVATION for publication.

An issue of ALABAMA BIRD LIFE, received this period, carried the article, "Anhinga Records from Northern Alabama," prepared by Wheeler personnel. The same issue carried the article, "Quail Feeders Are Attractive to Many Kinds of Birds," by Dr. A. O. Haugen and David Hulse, which dealt with work done on Wheeler Refuge. Wheeler employees have prepared two additional articles, "A White-fronted Goose Record for Alabama," and "Ibis Records from the Tennessee Valley," and submitted them to this magazine for future publication.

Bird data have been supplied for publication in Audubon Field Notes, and Wheeler employees have continued to cooperate with Thomas A. Imhof in rewriting "Birds of Alabama."

E. Hunting:

No public hunts were held during this period.

F. Fishing:

Heavy rains through most of the period, muddy water, poor road conditions and low fishing success have kept the number of fishermen below normal throughout the period. During the flood of late January and the first two or three weeks of February, crappie moved into shallow water and there were good catches. However, April - usually the month for high crappie catches - did not permit good fishing, due mainly to weather conditions. White and yellow lake bass catches are often good in late March and early April, just before the spawning season, but the fishing for these, too, was less successful than usual. No change has been noted in commercial fish numbers or the catch.

G. Violations:

The lack of violations noted last period was true through the present period.

Although a heavy patrol was maintained until all major waterfowl concentrations broke up in late February, few instances of violations were noted and few cases made. There was a small amount of livestock trespass, but this was not serious and no impoundments were made. State conservation officers gave the refuge their usual good cooperation. Following is a list of cases made or settled during the period.

<u>Name</u>	<u>Charges</u>	<u>Fine &amp; Costs</u>
Earl Simmons	Possessing firearms on refuge	\$14.00.
G. D. Twilley	Possessing firearms on refuge	29.75
Truman E. Eddie	Possessing firearms on refuge	14.75

In addition, several minors were apprehended and let off with warnings by the courts, and the following case involving a Federal law violation was made by refuge personnel on adjacent private land: Julian Harris, Jr. Hunting ducks after hunting hours. Fine & costs \$14.00.

#### VII. OTHER ITEMS OF INTEREST

Fire ant colonies have been discovered in Morgan and Limestone counties and have aroused considerable furor locally. One colony was located on the refuge and treated with insecticide.

Ernest A. Byford, who has worked at Wheeler since 1946, left during the period to take a job with the Chemstrand Corporation. Locally, heavy industry, with its high wage rates and many fringe benefits, is competing seriously for the man-power supply.

Game Management Agent Leo Martin has built an office room on his residence and moved his office from the Wheeler office building.

The super-highway that is to bisect Alabama has been preliminarily surveyed and staked off. The right-of-way is 300 feet wide.



This will cross the eastern end of the White Springs Island and the White Springs dewatered unit and the western end of the Garth Slough area. It will not be elevated, except across low areas, but will be fenced against local traffic, with entranceways at only about 25-mile intervals. Actual construction is said to be scheduled for 1959 or 1960. Crossing some of the best waterfowl territory of the refuge, this highway may be the most serious encroachment that Wheeler has experienced.

4/9/57

Date submitted

Charles M. Parker

Refuge Manager

Approved by:

Lawrence S. Stevens

Regional Refuge Supervisor

MAY 13 1957

WATERFOWL

REFUGE Wheeler

MONTHS OF January TO April, 19 57.

(1) Species	(2) Weeks of reporting period									
	1	2	3	4	5	6	7	8	9	10
<b>Swans:</b>										
Whistling Trumpeter										
<b>Geese:</b>										
Canada	16,000	16,000	16,000	16,000	12,000	10,000	2,000	1,000	700	700
Cackling Brant										
White-fronted										
Snow	30	30	30	30	30	30	0	0	0	0
Blue	300	300	300	300	300	300	0	0	0	0
Other										
<b>Ducks:</b>										
Mallard	20,000	20,000	15,000	15,000	12,000	10,000	3,000	2,000	1,500	1,000
Black	2,000	1,500	1,100	1,000	900	800	700	600	500	500
Gadwall	300	200	200	100	100	100	50	50	25	25
Baldpate	2,000	2,000	2,000	1,500	1,500	1,000	1,000	500	500	200
Pintail	2,000	2,000	2,000	3,000	3,000	2,000	2,000	1,000	1,000	500
Green-winged teal	500	300	300	300	300	300	200	200	100	50
Blue-winged teal										
Cinnamon teal										
Shoveler	25	25	25	25	25	25	50	100	200	300
Wood	50	50	50	100	200	300	400	500	500	400
Redhead	25	25	25	25	25	25	25	25	10	10
Ring-necked	30	30	30	30	50	100	200	200	100	50
Canvasback	20	20	20	20	20	20	50	50	50	30
Scaup	25	25	25	25	25	25	50	100	200	200
Goldeneye	20	20	20	10	10	10	5	5	0	0
Bufflehead	100	100	50	50	50	30	20	10	0	0
Ruddy	10	10	10	10	10	5	5	5	0	0
Other Hooded Mergansers	1,000	1,000	500	500	500	400	300	300	200	200
American merganser	50	25	25	25	25	20	20	10	10	0
<b>Coot:</b>	50	50	100	125	100	100	500	1,200	1,500	2,000

Cont. NR-1  
(Rev. March 1953)

WATERFOWL  
(Continuation Sheet)

REFUGE Wheeler

MONTHS OF January TO April, 19 57

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production : Broods: Estimate : seen : total	
	11	12	13	14	15	16	17	18			
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada . . .	600	600	200	100	5	5	5	5	570,410	0	0
Cackling											
Brant											
White-fronted											
Snow . . .	0	0	0	0	0	0	0	0	1,260	0	0
Blue . . .	0	0	0	0	0	0	0	0	12,600	0	0
Other											
Ducks:											
Mallard . . .	1,000	1,000	500	400	300	200	100	50	714,050	0	0
Black . . .	400	300	200	100	50	25	25	25	74,925	0	0
Gadwall . . .	0	0	0	0	0	0	0	0	8,050	0	0
Baldpate	100	0	0	0	0	0	0	0	86,100	0	0
Pintail . . .	100	0	0	0	0	0	0	0	130,200	0	00
Green-winged teal	0	0	0	0	0	0	0	0	17,850	0	0
Blue-winged teal	10	50	500	1,000	1,000	500	200	50	22,870	0	0
Cinnamon teal .	0	0	0	0	0	0	0	0	0	0	0
Shoveler . . .	200	100	50	25	0	0	0	0	8,225	0	0
Wood . . .	300	300	300	300	300	300	300	300	32,850	2	25
Redhead . . .	0	0	0	0	0	0	0	0	1,540	0	0
Ring-necked . .	25	0	0	0	0	0	0	0	5,915	0	0
Canvasback . .	25	20	10	0	0	0	0	0	2,585	0	0
Scaup . . .	100	50	10	0	0	0	0	0	6,020	0	0
Goldeneye . . .	0	0	0	0	0	0	0	0	700	0	0
Bufflehead . .	0	0	0	0	0	0	0	0	2,870	0	0
Ruddy . . .	0	0	0	0	0	0	0	0	455	0	0
Other Hooded merganser	100	50	10	10	10	10	10	10	35,780	0	0
American merganser	0	0	0	0	0	0	0	0	1,470	0	0
Coot: . . . . .	1,800	1,800	1,000	500	400	300	200	100	81,175	0	0

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production	SUMMARY
Swans	0	0	0	Principal feeding areas <u>White Springs, Flint Creek, and</u>
Geese	584,270	16,000	0	<u>Garth Slough.</u>
Ducks	1,152,455	26,000	25	Principal nesting areas <u>None.</u>
Coots	81,175	2,000	0	
				Reported by <u>Charles M. Parker</u>
				Charles M. Parker

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.
- (2) Weeks of Reporting Period: Estimated average refuge populations.
- (3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.
- (4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (5) Total Days Use: A summary of data recorded under (3).
- (6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.
- (7) Total Production: A summary of data recorded under (4).

3-1751

Form NR-1A

(Nov. 1945)

MIGRATORY BIRDS  
(other than waterfowl)

Refuge HeelerMonths of January to April 1957

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimate Number
I. Water and Marsh Birds:										
Double-crested cormorant	-	-	150	Jan. 1.	1	March 15	-	-	-	200
Common loon	-	-	10	Jan. 1	1	Mar. 20	-	-	-	25
Great blue heron	Permanent	resident	250	Jan. 1	-	-	-	-	-	300
Pied-billed grebe	"	"	100	Mar. 1	-	-	-	-	-	250
American egret	1	Mar. 30	50	Apr. 30	Still present		-	-	-	75
Little blue heron	1	Apr. 15	25	Apr. 30	"	"	-	-	-	40
Green heron	1	Apr. 10	10	Apr. 3	"	"	-	-	-	20
Red-breasted merganser	-	-	25	Jan. 1	1	Apr. 20	-	-	-	50

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. <u>Doves and Pigeons:</u>					
Mourning dove	Permanent resident	1,700	Apr. 1.	-	-
White-winged dove				-	60
					85
					3,000
IV. <u>Predaceous Birds:</u>					
Golden eagle					
Duck hawk	Throughout period	5	Jan. 1	-	-
Horned owl				-	-
Magpie				-	-
Raven				-	-
Crow	Permanent resident	180,000	Jan. 1	-	-
Bald eagle	Throughout period	14	Jan. 12	-	-
Cooper's hawk	" "	175	Jan. 1	-	-
Sharp-shinned hawk	" "	75	Jan. 1	-	-
Marsh hawk	-	175	Jan. 1	1	Apr. 15
Barred owl	Permanent resident	125	Apr. 30	-	-
Sparrow hawk	" "	50	Jan. 1	-	-
Red-shouldered hawk	" "	200	Jan. 1	-	-
Red-tailed hawk	Throughout period	50	Jan. 1	-	-
				Reported by	

*Charles M. Parker*

#### INSTRUCTIONS

- (1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiformes)  
II. Shorebirds, Gulls and Terns (Charadriiformes)  
III. Doves and Pigeons (Columbiformes)  
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)
- (2) First Seen: The first refuge record for the species for the season concerned.
- (3) Peak Numbers: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned.
- (5) Production: Estimated number of young produced based on observations and actual counts.
- (6) Total: Estimated total number of the species using the refuge during the period concerned.

## UPLAND GAME BIRDS

Refuge Wheeler

Months of January to April, ~~1956~~ 1957

[illegible]

## INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.\*

- (1) SPECIES: Use correct common name.
- (2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.
- (4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.
- (5) REMOVALS: Indicate total number in each category removed during the report period.
- (6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.
- (7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

\* Only columns applicable to the period covered should be used.



3-1754

Form NR-4

(June 1945)

## SMALL MAMMALS

Refuge WheelerYear ending April 30, 1957

(1) Species	(2) Density		(3) Removals					(4) Disposition of Furs					(5) Total	
Common Name	Cover Types & Total Acreage of Habitat	Acres Per Animal	Hunting	Fur Harvest	Predator Control *	For Re- stocking	For Re- search	Share Trapping			Total Refuge Furs Shipped	Furs Donated	Furs Destroyed	Popula- tion
								Permit Number	Trappers Share	Refuge share				
Gray squirrel	Bottomland hardwoods, 4,200 acres.	.333078	0	0	0	0	0							12,600
Fox squirrel	Upland hardwoods and pines, 300 acres	15.	0	0	0	0	0							20
Beaver	Stream banks, 2 mi.		0	0	0	0	0							8
Muskrat	Marginal shoreline, 1200 acres	4.	0	0	0	0	0							300
Woodchuck*	All types, 600 acres	33.	0	0	0	0	0							18
Cottontail rabbit	All types, 19,000 A.	6.	30	0	0	0	0							3,166
Swamp rabbit	All types, 5,000 A.	7.	28	0	0	0	0							713
Mink	Streams, sloughs, 275 miles		0	0	0	0	0							65
Striped skunk	All types, 19000 acres	40	0	0	0	0	0							475
Raccoons	All types, 19000 "	20	196	0	0	0	0							950
Opossums	All types, 19000 "	15	277	0	0	0	0							1,266
Gray fox	All types, 19000 "	80	4	0	0	0	0							237
Red fox	All types, 19000 "	120	9	0	0	0	0							158
Flying squirrel	Woodland, all type, 1500 acres	10	0	0	0	0	0							450
* List removals by Predator Animal Hunter														

\* List removals by Predator Animal Hunter

REMARKS:

Reported by Charles M. Payne

## INSTRUCTIONS

Form NR-4 - SMALL MAMMALS (Include data on all species of importance in the management program; i. e., muskrats, beaver, coon, mink, coyote. Data on small rodents may be omitted except for estimated total population of each species considered in control operations.)

- (1) SPECIES: Use correct common name. Example: Striped skunk, spotted skunk, short-tailed weasel, gray squirrel, fox squirrel, white-tailed jackrabbit, etc. (Accepted common names in current use are found in the "Field Book of North American Mammals" by H. E. Anthony and the "Manual of the Vertebrate Animals of the Northeastern United States" by David Starr Jordan.)
- (2) DENSITY: Applies particularly to those species considered in removal programs. Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottom land hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) REMOVALS: Indicate the total number under each category removed since April 30 of the previous year, including any taken on the refuge by Service Predatory Animal Hunter. Also show any removals not falling under headings listed.
- (4) DISPOSITION OF FUR: On share-trapped furs list the permit number, trapper's share, and refuge share. Indicate the number of pelts shipped to market, including furs taken by Service personnel. Total number of pelts of each species destroyed because of unprimeness or damaged condition, and furs donated to institutions or other agencies should be shown in the column provided.
- (5) TOTAL POPULATION: Estimated total population of each species reported on as of April 30.
- REMARKS: Indicate inventory method(s) used, size of sample area(s), introductions, and any other pertinent information not specifically requested.

3-1570  
NR-8a

REFUGE GRAIN REPORT

Refuge Shoaler

Months of January thru April 195 7.

(1) VARIETY	(2) ON HAND BEGINNING OF PERIOD	(3) RECEIVED DURING PERIOD	(4) TOTAL	(5) GRAIN DISPOSED OF				(6) ON HAND END OF PERIOD	(7) PROPOSED USE		
				TRANS- FERRED	SEEDED	FED	TOTAL		SEED	FEED	SURP.
Wheat	50 bu	0	50 bu	0	0	0	0	50 bu.	50 bu.	0	0
Shelled corn	900 bu.	0	900 bu	12 bu	0	720	888 bu	60 bu	0	0	60 bu.
Brown-top millet	785 bu	0	785 bu	0	0	0	0	785 bu.	785 bu	0	0
Japanese millet	20 bu	70 bu	90 bu	0	0	0	0	90 bu	90 bu	0	0
Pearl millet	45 bu	0	45 bu	0	0	0	0	45 bu	45 bu	0	0
Black millet	1 bu	0	1 bu	0	0	0	0	1 bu	1 bu	0	0
Siberian millet	0	4 bu	4 bu	0	0	0	0	4 bu	4 bu	0	0
Cockle corn	36 bu	0	36 bu	0	0	0	0	36 bu	36 bu	0	0
Oat grass	4 bu	0	4 bu	0	0	0	0	4 bu.	0	0	4 bu.
Rye grass	70 bu	0	70 bu	0	0	0	0	70 bu.	70 bu	0	0
Barren soybeans	0	60 bu	60 bu	0	0	0	0	60 bu.	60 bu	0	0
Open soybeans	0	40 bu	40 bu	0	0	0	0	40 bu	40 bu	0	0

(8) Indicate shipping or collection points Refuge grain bins

(9) Grain is stored at " " "

(10) Remarks \_\_\_\_\_

NR-8a

REFUGE GRAIN REPORT

This report should cover all grain on hand, received, or disposed of, during the period covered by this narrative report.

Report all grain in bushels. For the purpose of this report the following approximate weights of grain shall be considered equivalent to a bushel: Corn (shelled)--55 lbs., Corn (ear)--70 lbs., Wheat--60 lbs., Barley--50 lbs., Rye--55 lbs., Oats--30 lbs., Soy Beans--60 lbs., Millet--50 lbs., Cowpeas--60 lbs., and Mixed--50 lbs. In computing volume of granaries, multiply the cubic contents (cu. ft.) by 0.8 bushels.

- (1) List each type of grain separately: Corn, wheat, proso millet, etc. Include only domestic grains; aquatic and other seeds will be listed on NR-9.
- (3) Report all grain received during period from all sources, such as transfer, share-cropping, or harvest from food patches.
- (4) A total of columns 2 and 3.
- (6) Column 4 less Column 5.
- (7) This is a proposed breakdown by varieties of grain listed in Column 6.
- (8) Nearest railroad station for shipping and receiving.
- (9) Where stored on refuge: "Headquarters grainary", etc.
- (10) Indicate here the source of grain shipped in, destination of grain transferred, data on condition of grain, unusual uses proposed.

3-1570  
NR-8a

REFUGE GRAIN REPORT

Refuge Wheeler

Months of January thru April 1957.

(1) VARIETY	(2) ON HAND BEGINNING OF PERIOD	(3) RECEIVED DURING PERIOD	(4) TOTAL	(5) GRAIN DISPOSED OF				(6) ON HAND END OF PERIOD	(7) PROPOSED USE		
				TRANS- FERRED	SEEDED	FED	TOTAL		SEED	FEED	SURP.
Milo	500 bu	0	500 bu	0	0	0	0	500 bu.	500bu	0	0
Shelled corn	900 bu.	0	900 bu	120 bu	0	720	840bu	60 bu	0	0	60 bu.
Brown-top millet	785 bu	0	785 bu	0	0	0	0	785 bu.	785 bu	0	0
Japanese millet	20 bu	70 bu	90 bu	0	0	0	0	90 bu	90 bu	0	0
Pearl Millet	45 bu	0	45 bu	0	0	0	0	45 bu	45 bu	0	0
Black millet	1 bu	0	1 bu	0	0	0	0	1 bu	1 bu	0	0
Siberian millet	0	4 bu	4 bu	0	0	0	0	4 bu	4 bu	0	0
Combine cowpeas	34 bu	0	34 bu	0	0	0	0	34 bu	34 bu	0	0
Gar peas	4 bu	0	4 bu	0	0	0	0	4 bu.	0	0	4 bu.
Rye grass	70 bu	0	70 bu	0	0	0	0	70 bu.	70 bu	0	0
Dorman soybeans	0	60 bu	60 bu	0	0	0	0	60 bu.	60 bu	0	0
Ogden soybeans	0	40 bu	40 bu	0	0	0	0	40 bu	40 bu	0	0

(8) Indicate shipping or collection points Refuge grain bins

(9) Grain is stored at " " "

(10) Remarks \_\_\_\_\_

NR-8a REFUGE GRAIN REPORT

This report should cover all grain on hand, received, or disposed of, during the period covered by this narrative report.

Report all grain in bushels. For the purpose of this report the following approximate weights of grain shall be considered equivalent to a bushel: Corn (shelled)--55 lbs., Corn (ear)--70 lbs., Wheat--60 lbs., Barley--50 lbs., Rye--55 lbs., Oats--30 lbs., Soy Beans--60 lbs., Millet--50 lbs., Cowpeas--60 lbs., and Mixed--50 lbs. In computing volume of granaries, multiply the cubic contents (cu. ft.) by 0.8 bushels.

- (1) List each type of grain separately: Corn, wheat, proso millet, etc. Include only domestic grains; aquatic and other seeds will be listed on NR-9.
- (3) Report all grain received during period from all sources, such as transfer, share-cropping, or harvest from food patches.
- (4) A total of columns 2 and 3.
- (6) Column 4 less Column 5.
- (7) This is a proposed breakdown by varieties of grain listed in Column 6.
- (8) Nearest railroad station for shipping and receiving.
- (9) Where stored on refuge: "Headquarters grainary", etc.
- (10) Indicate here the source of grain shipped in, destination of grain transferred, data on condition of grain, unusual uses proposed.

This area was censused on February 15-18 and only 6 covies, totaling 56 birds were found. This is the lowest quail count for this area in the history of the refuge and is the result of continuous clean-up of cover. However, this same cover clean-up that has reduced quail numbers has caused increased waterfowl use.

In March, five Ring-neck pheasants were seen on the headquarters area. There were two cocks and three hens. Four others, including at least one cock, were seen on refuge land near Village Creek. A number of local people are raising pheasants and continually releasing them. This explains the occasional occurrence of these birds on the refuge. There is no indication that they are actually becoming established here.

2. Food and Cover: Warm weather in early March caused plums and other wild fruit to bloom profusely. The severe cold wave in late March is certain to have killed all young fruit. However, oaks, hickories, and other mast producers had not bloomed and production may be normal.

3. Disease: No disease has been noted among upland birds.

C. Big Game Animals:

On March 29 an 170-pound Black bear was killed in the edge of Austinville, a suburb of Decatur. There is no explanation as to why the animal occurred there and no evidence that it was ever on the refuge. The point where it was killed was less than two miles from the refuge boundary. Later, another Black bear was reported seen on the refuge in the White Springs vicinity. This report has not been verified.

Deer and deer sign were reported in early April near Means bridge on West Flint Creek and a mature buck was sighted near Priceville. None of these were on the refuge, but were within a reasonably short distance. However, no deer or deer sign have been reported on the refuge proper this period.

D. Fur Animals: The number of raccoons and opossums appear to have declined sharply, probably partly due to recent drought years and partly due to heavy refuge hunting and trapping. Mink, muskrats and beaver numbers seem stable, while foxes and skunks continue to increase.

Squirrels have made a fair recovery since the fall hunt and rabbit numbers are high.

E. Predaceous Birds: During the early part of the period the crow population continued heavy, with an estimated 100,000 birds using on the refuge and roosting nightly in the Whiteside area. Efforts to induce Army personnel at Redstone Arsenal to blast this roost failed. As a substitute, refuge personnel worked it nightly with explosives and rockets until it was abandoned. State officials opened the Swan Creek shooting area, nearby, to supervised crow shooting in an effort to force the birds from that locality.

With upland food gone and warmer weather, crow concentrations scattered in late February.

No change has been noted in the number of Bald eagles, hawks, and owls using the refuge this period.

- F. Fish: In February, the Alabama Conservation Department, by decree, banned all use of nets in this area. In late March the use of nets was restored with certain restrictions. Commercial catches have been fairly good through the period and sport fishing has been good whenever water and weather conditions were suitable.

### III. REFUGE DEVELOPMENT AND MAINTENANCE

#### A. Physical Developments:

1. Field Work: Rainy weather throughout this period prevented large-scale use of machinery and held down field work. One of the most important jobs completed this period was a remarking and re-posting of the entire refuge boundary. A pair of refuge employees was assigned to each side of the river. Boundaries were checked with a staff compass, the line marked with white paint, damaged signs replaced, brush cut from around sign posts, locust posts cut and many new posts and signs erected. This gives a good, complete job of boundary marking - badly needed - since a thorough remarking had not been done since before World War II and many miles of the boundary were virtually unmarked. The only portion omitted, in the present marking, was certain small isolated tracts which are scheduled to be dropped from the refuge area upon completion of the agreement with T.V.A.

The Black's Branch bridge was rebuilt, including replacement of some heavy timber and reflooring. A heavy truck demolished the long bridge over the Cat Hole ditch near Sunnyside Landing during the period, and this bridge was completely rebuilt and a center support installed. (See photograph in appendix).

Three lines of culverts were installed in the Flint Creek Island road system, three new lines in the road along the east side of Flint Creek and five new lines in the south boundary line truck trail. In addition, many existing culverts were cleaned out and a considerable yardage of approach and outlet ditches was dug.

The Flint Creek Island road system was graded and two new railroad iron and cable barriers erected at road entrances.

The 14-acre landing strip on Flint Creek Island, once sown by T.V.A. to perennial sod, has reverted entirely to Bermuda grass, with a heavy infestation of wild onions. It is planned to break and disc this through the summer and replant it to perennial sod in early fall, both as an improvement as a landing strip and to furnish winter goose browse. In an effort to kill onions, five gallons of "Gold Bear 44", a 2-4-D compound manufactured by the Swift Company, was purchased, mixed with 250 gallons of water and sprayed on this area. It is still too early to determine results; these will be reported on in the next period.



Trucks hauling pulpwood from the thinning near Blackwell Swamp, together with other traffic through the winter, have cut up roads in this vicinity until they were almost unusable by refuge farmers. During the latter part of the period, refuge personnel began reworking this road from the Rockhouse pumps east to Blackwell Swamp and north to the refuge line. Seventeen lines of new culverts were laid, old culverts cleaned out and much ditching and draining done. The D-7 and towed grader were put to work re-ditching and grading this road and it was nearing completion at the end of the period. Railroad rail and steel cable barrier were erected across the buckeye control structure fill.

2. Headquarters Maintenance and Development: An 1800-gallon iron oil-storage tank was purchased from T.V.A. Creosoted piling, stored at Triana, was brought to headquarters and the tank mounted on piling, about six feet above the ground. This tank is located on the bank of Flint Creek channel between the refuge barn and boat house and will be used for diesel fuel storage. The old method of buying diesel fuel a drum at a time was inefficient and time consuming. The tank will enable large-scale purchasing and the filling of trailer tanks by gravity flow.

The headquarters entrance road was regravelled and regraded. Eroded banks of this road and of the slope facing Highway 67 were seeded and mulched. (See photographs in appendix).

That part of the headquarters area lying west of the buildings is given to a heavy stand of young pines and hardwood brush. Combine a fire started by careless fishermen, dry weather, and a high west wind and this could pose considerable danger to the buildings. To minimize this, a firebreak was cut through this brush between buildings and shoreline and disked. In addition to the above jobs, fire barrels were repainted, the lawn kept mowed, shrubbery pruned, and the area generally cleaned up. (See photographs in appendix).

3. Miscellaneous Jobs: Several official trips were made during the period. A pickup truck was sent to the Kentucky Woodlands Refuge for surplus sacks and fescue seed. Another was sent to the Bellefoot Refuge and brought back 37 bushels of soybeans. The stake truck was sent to Osage Refuge with a load of surplus corn and to the Saint Marks Refuge with another. On the St. Marks trip, stop-overs were made at Ft. Tolson and Ft. Benning to check on surplus Army equipment. Two trips were made to Oak Ridge to procure surplus material from the Atomic Energy Commission.

Surplus corn was transferred to other areas and the remainder fed locally. Surplus equipment was transferred. Duck trapping was carried on. All farming agreements were renewed. Visiting groups and classes were guided about the area and many other miscellaneous jobs done.

4. **Vehicle and Equipment Maintenance:** Since the wet weather curtailed field work, advantage was taken of this to put vehicles and equipment in good repair.

The D-8 tractor was completely overhauled, new valves, rings, sleeves and head installed, along with seals, pins, and bearings. The crankshaft was turned down, worn parts replaced and the entire unit thoroughly cleaned and painted. On the D-7 tractor, a new slider assembly, fan, bolts and grease seals were installed, and the left steering clutch replaced. On the D-2, new pins and bushings, regulator and belt, and seals and floats were installed, and the unit thoroughly cleaned and painted.

Concerning wheel tractors, the extension rims were removed from the I-6. The spindle was reamed, radiator cleaned, fan and gears repaired, and new pins, bushings, and seals installed. The two I.A. tractors were cleaned, some welding done and a new carburetor was installed on one. General maintenance given them and they were made ready for another season.

The Galion tow grader was cleaned, painted, and the auxiliary motor overhauled. The air compressor motor used on the portable trailer unit was overhauled and lawn mower motors reworked. New spark plugs were installed in the Diamond-T truck and minor adjustments made. The Dodge power wagon had front springs leaves replaced, the clutch reworked, and other repairs and adjustments.

The Galion self-propelled grader was thoroughly cleaned and painted two coats of Caterpillar yellow.

The two jeep trucks were worked over, brakes relined, two new tires installed on one, spring leaves replaced on both, a front drive shaft and universal joint installed on one, along with many small repairs and adjustments.

Of the four Ford trucks on hand at the beginning of the period, the oldest was disposed of by sale. The other three required some repairs including a universal joint, axle bearings, brake relining, and numerous small repairs and adjustments.

Refuge seeders were reworked, repaired and worn parts replaced. Discs, mowers, and plows were reworked and repaired and all smaller equipment items checked over, adjusted and repaired. All tools listed above were thoroughly cleaned and painted.

The Federal 6 x 6 truck-tractor was cleaned, sanded, and painted. Two new tires were installed and grease seal on driveshaft replaced.

#### B. Plantings:

1. **Aquatic and Marsh Plantings:** No plantings of this type were made during the period.

2. Trees and Shrubs: No trees and shrubs were planted this period.
3. Upland Herbaceous Plants: Except for over-sowing waterways with *Lespedeza sericea*, no plantings of this type were made during this period.
4. Cultivated Crops: The mild weather throughout most of March, followed by a severe freeze in late March, damaged alfalfa, permanent pastures, and small grain. The extent of this damage still cannot be determined, but this, together with heavy rains throughout early and mid-spring may cause a serious reduction in small grain yields.

Some 1955 farming totals may be of interest. There is only a single cash row-crop permit. This is for 16 acres, with a charge of \$56.00. Considering partnerships as individuals, there are 76 cooperators this year. The total number of individuals holding both cash payment and cooperative permits this year is 90. A total of 92 permits, cash and cooperative, are in effect this year. There is a total of 5659 acres under cooperative agreement. The total used acreage, cash and cooperative, is 5916.

C. Collections:

1. Seed and Other Propagules: No collections of this type were made this period.

2. Specimens: No specimens were collected this period. Five Canada geese were live-trapped and transferred to the Noxubee Refuge.

- D. Receipts of Seed and Nursery Stock: One thousand pounds of fescue seed, stored at the Kentucky Woodlands Refuge, were transferred to Wheeler during this period. Thirty-seven bushels of Ogden soybeans were transferred to Wheeler from the Reelfoot Refuge.

#### IV. ECONOMIC USE OF REFUGE

A. Grazing:

In addition to pasture under cooperative permit, 11 cash pasture permits have been issued this period, covering 203 acres and yielding a cash revenue of \$357.00.

- B. Haying: In addition to hay land under cooperative agreement, four cash hay permits were issued this period, covering 38 acres and returning \$152.00 of revenue.

C. Fur Harvest:

A special report covering the 1954-55 trapping season has been submitted. There were 12 active trapping permits. A total of 34 mink, 49 raccoons, 96 opossums, 3 muskrats, 7 red foxes, 22 gray foxes, and 23 skunks were taken.

Muskrat pelts have been shipped according to regulations. A declining small-mammal population makes it seem desirable to suspend future trapping until populations have increased substantially.

- D. Timber Removal: The pine pulpwood thinning in the Blackwell area has continued throughout this period, slowed by flood conditions and heavy rains. Much damage to refuge roads has been done by heavily loaded pulp trucks. It is understood that the contractor has until August to complete this cutting but may finish it ahead of schedule. T.V.A. reports that some portions of this plantation have yielded over 25 cords of pulpwood per acre in the less-than-50-per cent thinning. According to T.V.A., once all marked trees have been cut, the remainder of the Blackwell stand will not be marked this year. Marking and cutting may be shifted to a smaller plantation lying along the eastern side of the Dancy Bottoms.

In addition to pulpwood, T.V.A. has sold 500 Black locust posts from the refuge this period and received \$75.00 as payment.

- E. Other Uses: T.V.A. has issued six permits for mussel shell cook-out sites on the refuge this period. Shelling has been hampered by flood and high winds, but catches have been good during suitable weather.

Figures on the 1954 refuge shell take are now available and show that a total of 2,126 tons were taken. Total receipts for shells and slugs amounted to \$74,850.00. The white shells -(mostly pig toes) averaged \$37.50 a ton. Colored and cull shells averaged \$16.00 per ton, and slugs averaged \$5.00 an ounce.

During the present period, shell prices have dropped and white shells are now bringing from \$30.00 to \$35.00 per ton. Buyers are requiring close grading and will not take colored or cull shells at any price. Slug prices have dropped to \$3.00 per ounce. There is some evidence that refuge shell beds have been over-harvested and that the shell supply is declining.

#### V. FIELD INVESTIGATION OR APPLIED RESEARCH

A progress report on the 1954 results of the dewatered plant study has previously been submitted. It is planned to abandon the dewatered transect unless there is a drastic change in water levels or weather conditions this summer. Substituted for this will be a study of the factors influencing Brown-top and Japanese millet volunteering and a study of the effects of discing at various dates on the volunteering natural vegetation on dewatered land.

The experimental use of quail self-feeders on Flint Creek Island, sponsored by the Alabama Cooperative Wildlife Research Unit, has been terminated. Generally, it was decided that such feeders had little effect on the quail population unless accompanied by proper cover conditions.

It is planned to test Starr millet in dewatered units this year to determine if this strain has any advantages over other varieties.

Further use of Herly Fortune millet, as a substitute for buckwheat in late summer plantings is planned.

## VI. PUBLIC RELATIONS

### A. Recreational Uses:

Wet weather and poor road conditions have kept recreational use low throughout this period. The principal use, as usual, has been fishing.

### B. Refuge Visitors:

There has been the usual large number of visiting groups during this period. Below is a list of these:

<u>Date</u>	<u>Group</u>	<u>Number</u>
Jan. 4, 1955	Austinville High School	15
Jan. 18.	Antsville East Clinton School	76
Jan. 18	Decatur Gordon Bibb School	77
Feb. 8.	Oakwood Negro College	38
Feb. 10	Decatur Girl Scouts	8
Feb. 19	Decatur Boy Scouts	25
Feb. 19	Birmingham Audubon Society	12
March 12	Decatur Boy Scouts	15
April 1	Decatur Cub Scouts	12
April 7	" " "	14
April 8	Flint School	58
April 8	Priceville School	72
April 15	Hartselle Cub Scouts	13
April 18	Decatur Cub Scouts	9
April 19	Hartselle Cub Scouts	13
April 20	Decatur Cub Scouts	21
April 21	Decatur Boy Scouts	13
April 23	" " "	12
April 26	" " "	9
April 27	Decatur Cub Scouts	26
April 29	Decatur Crippled Children's Class	12

### Official Visitors.

Mr. L. A. Miller, Regional Refuge Supervisor, Jan. 11.  
 Dr. George B. Saunders, Biol. Supervisor, Game Mgm. Mar. 25.  
 Mr. Hawkins, Flyway Biologist, Minneapolis Office, Mar. 25.  
 Mr. Lawrence S. Givens, Asst. Reg. Refuge Supervisor, Mar. 1-2.  
 Mr. Carl Fermanich, Asst. Regional Supervisor, Apr. 6-7.  
 Dr. Vandiver Childs, Mgr. Tenn. Refuge, April 27-28.  
 Mr. Burton S. Webster, Mgr., Noxubee Refuge, March 14.  
 Dr. A. H. Haugen, Leader, Ala. Coop. Wildlife Research Unit, Feb. 18.  
 Mr. Eugene Cypert, Biologist, Tenn. Refuge, March 1-2.  
 Dr. A. H. Wiebo, TVA Game and Fish Branch, Feb. 17.  
 Mr. Marshall, Ducks Unlimited, Jan. 3.  
 Dr. Oliver Ausite, with Birmingham Audubon group, Feb. 19.  
 Dr. E. V. Smith, Dean, School of Agri., Auburn, April 14.  
 Mr. C. D. Bader, Soil Conservation Ass'n, Illinois.

### C. Refuge Participation:

On February 14 the Manager spoke to the Decatur Yacht Club on "Wheeler Refuge and its Place in National Waterfowl Management."

The Manager has attended various Scout Review Board and Council meetings this period in Decatur and Florence, and made short talks at several of these meetings.

The Manager has attended the regular weekly meetings of the Decatur Lions Club throughout this period. The Manager and Biologist attended an organizational meeting of the Decatur Ducks Unlimited chapter in late January. Meetings of the Morgan County Sportsmen's and Conservation Association have been attended by various members of refuge personnel during this period. In late March the Biologist attended a roundtable meeting of Scout leaders in Athens and spoke to them on "Wheeler Refuge and Conservation." On March 3 the Biologist attended a meeting of the Decatur Garden Club and spoke to them on birds in general and Wheeler Refuge in particular. On April 1 the Biologist attended a meeting of the Athens chapter of the Limestone County Sportsmen's Association. The Manager attended the Statewide meeting of the Wildlife workers at Auburn on April 28 and 29.

The refuge has given help to various local groups in the preparation of garden clubs, radio, and television programs. On several occasions, this period, the refuge has procured Service films for showing to local groups.

The old Indian dugout canoe, dragged from the river bottom by a shell fisherman in 1948, and preserved by refuge personnel, has been donated to a newly-formed museum in Huntsville.

### D. Refuge Publicity:

The article, "Swimming by Wild Turkey Poults," appeared in an issue of the Wilson Bulletin received this period. It was prepared by refuge personnel and Game Management Agent Leo Martin.

A short article, "Northern Alabama Notes on the Caspian Tern", by refuge personnel and David C. Hulse, appeared in an issue of Alabama Bird Life, published this period.

A short article, "Ground Dove Records from the Tennessee Valley", was prepared by refuge personnel this period, submitted to Alabama Bird Life and accepted for publication.

An article, "Goosie, Goosie, Gander, Whither Do you Wander," was written by refuge personnel and David Hulse during this period, submitted to Alabama Conservation for publication and accepted.

An article, "Fish Ducks," was written by refuge personnel this period and will be submitted for publication in the magazine, Alabama Conservation, after the article on geese has been printed.

An article, "Crappie by Steel Traps", was written by refuge personnel this period and submitted for Service publication approval. If given, this article will be submitted to the Journal of Wildlife Management.

An article in the April issue of the magazine, Mississippi Game and Fish, by Regional Refuge Supervisor Howard A. Miller, gave good publicity to Wheeler Refuge.

Issues of Alabama Conservation received this period have carried frequent and favorable mentions of Wheeler Refuge. Throughout the period the Decatur Daily has carried numerous items which gave favorable publicity to this refuge but were not written by refuge personnel.

The Out-Doors column, written by refuge personnel and appearing in the Decatur paper, was continued twice-weekly throughout this period until mid-April when it was reduced to once a week. This will be continued until early fall, then twice-a-week publication will probably be resumed. In addition to the above, sixteen separate news items were written this period by refuge personnel. All appeared in at least one Valley paper and some in as many as 4.

Bird notes have been furnished for publication in Audubon Field Notes. Refuge personnel have cooperated closely with Mr. Thomas A. Imhof, who is now rewriting Birds of Alabama.

E. Hunting: There were no public hunts this period.

F. Fishing:

Periods of cold, along with heavy rains, have caused unfavorable fishing conditions during much of the period. However, when weather was warm and water clear, the spring fishing has been fully as good as that of last year's, perhaps better. There have been excellent Crappie catches and fair catches of Large-mouth bass, White- and Yellow Lake bass and Bream.

G. Violations:

A continuous heavy patrol was kept up throughout most of January, including week-ends. Later, patrol was done in connection with posting and during bad weather. There were continued reports of night shooting during the early part of the period, some rabbit hunting and probably some illegal coon hunting, trapping and stock trespass. However, there was comparatively little trouble with violations this period. Cooperation by State Conservation Officers has been excellent and many thanks are due Game Management Agent Leo Martin for the help given the refuge. Following is a list of cases made, settled, or pending this period:

<u>Name</u>	<u>Charge</u>	<u>Fine and Costs.</u>
Howard Griffin	Possession of firearms on refuge	\$29.75
Connie Lacy	Possession of firearms on refuge	29.75
Kenneth Henderson	Hunting on refuge	29.00
Notie Henderson	Possession of firearms on refuge	Pending
Otto Hagood	Possession of firearms on refuge	29.75
D. R. Clark	Hunting on refuge	Pending

In addition to the above, the following cases were made near the refuge boundary:

Ed Lindsey	Hunting out of season	Minor
Charles Powell	Hunting out of season	Minor
Fred Atkinson	Shooting over bait	Minor
Bill Estes	Hunting without a license	13.75
J. P. Atkeson	Shooting over bait	Pending
Earl Slater	Hunting waterfowl with unplugged gun	10.00

#### VII. OTHER ITEMS OF INTEREST

Some right-of-way work has been done on Highway No. 20 where this crosses the Beaver Dam Creek area of the refuge.

May 9, 1955.  
Date submitted.

Charles M. Parker  
Refuge Manager

Approved by:

(sgt) Howard A. Miller



PHOTOGRAPHS



(1). White Springs Dike gravelling with stage of water in unit in background approximately 554.9 on gauge.



(2). Road construction one-fourth mile from county road to refuge, McClosky's Branch vicinity.



(3). Bridge construction and road accross McClosky's Branch.



(4). Bridge constructed across Martin's Branch.



(5). Road construction - fill and culvert - to river bank fields below Cave Springs



(6). Hedgerow removal and waterway construction - Dewey Houser rental - Soil and Moisture Program





(7). Clearing brush - extending field -Dewey Houser rental. Oats in foreground; brush in background to be removed.

WATERFOWL

REFUGE Wheeler Refuge - Alabama.

MONTHS OF January TO April, 19 55

(1) Species	(2) Weeks of reporting period									
	1	2	3	4	5	6	7	8	9	10
<b>Swans:</b>										
Whistling										
Trumpeter										
<b>Geese:</b>										
Canada	22,000	20,000	18,000	16,000	14,000	12,000	10,000	9,000	8,000	5,000
Cackling										
Brant										
White-fronted										
Snow	50	50	50	40	30	20	20	10	5	5
Blue	800	800	700	500	200	100	100	50	50	12
Other										
<b>Ducks:</b>										
Mallard	25,000	20,000	20,000	18,000	16,000	9,000	8,000	6,000	5,000	4,000
Black	3,000	3,000	2,500	2,000	1,500	1,000	1,000	500	400	300
Gadwall	1,500	1,000	1,000	700	500	500	300	300	200	200
Baldpate	2,000	1,500	1,000	500	500	1,000	1,000	500	500	300
Pintail	1,000	700	700	500	500	500	500	1,500	1,000	500
Green-winged teal	1,000	800	500	500	500	300	300	200	200	100
Blue-winged teal	0	0	00	0	0	0	0	0	0	25
Cinnamon teal	0	0	0	0	0	0	0	0	0	0
Shoveler	400	400	300	300	200	100	100	400	200	100
Wood	50	50	50	50	50	50	100	200	500	600
Redhead	5	5	5	5	5	0	0	0	0	0
Ring-necked	100	100	100	100	100	200	300	200	100	50
Canvasback	100	100	100	150	100	100	50	50	50	25
Scaup	100	100	100	100	100	100	100	100	150	200
Goldeneye	10	10	5	5	5	0	0	0	0	0
Bufflehead	100	100	75	75	50	50	20	20	0	0
Ruddy	25	25	20	20	10	10	0	0	0	0
Other -hooded Merganser	600	600	500	500	400	400	300	300	200	200
<b>Coot:</b>	25	25	25	25	25	25	25	25	25	50

3-1750a  
Cont. NR-1  
(Rev. March 1953)

WATERFOWL  
(Continuation Sheet)

REFUGE Wheeler Refuge, Alabama

MONTHS OF January TO April, 1955

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods:Estimate seen : total	
	11	12	13	14	15	16	17	18			
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada	4,000	3,000	2,000	1,000	500	200	100		1,013,000	0	0
Cackling											
Brant											
White-fronted											
Snow	1	1	0	0	0	0	0		1,974	0	0
Blue	12	0	0	0	0	0	0		23,268		
Other											
Ducks:											
Mallard	2,000	1,000	500	300	200	100	100		945,800		
Black	200	100	100	50	50	50	50		110,300		
Gadwall	100	50	25	0	0	0	0		44,625		
Baldpate	200	200	100	50	25	0	0		65,625		
Pintail	300	200	100	50	0	0	0		56,350		
Green-winged teal	100	50	50	25	0	0	0		32,375		
Blue-winged teal	50	100	200	100	50	25	25		3,875		
Cinnamon teal	0	0	0	0	0	0	0		0		
Shoveler	100	50	50	25	0	0	0		19,075		
Wood	500	400	400	400	400	400	400		27,000		
Redhead	0	0	0	0	0	0	0		175		
Ring-necked	50	25	0	0	0	0	0		9,975		
Canvasback	25	20	10	0	0	0	0		6,160		
Scaup	300	200	100	50	20	0	0		12,740		
Goldeneye	0	0	0	0	0	0	0		245		
Bufflehead	0	0	0	0	0	0	0		2,730		
Ruddy	0	0	0	0	0	0	0		770		
Other Hooded merganser	100	100	50	50	25	25	10		30,460		
Coot:	100	600	500	400	300	200	100		16,725		

	(5)	(6)	(7)
	Total Days Use	Peak Number	Total Production
Swans			
Geese	1,038,242	23,000	-
Ducks	2,406,522	35,000	-
Coots	16,725	600	-

SUMMARY	
Principal feeding areas	Garth slough, Flint Creek, Yellow
	Cal. Buckeye, Limestone Bay.
Principal nesting areas	None

Reported by Charles H. Parker, Refuge Manager

# INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.
- (2) Weeks of Reporting Period: Estimated average refuge populations.
- (3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.
- (4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (5) Total Days Use: A summary of data recorded under (3).
- (6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.
- (7) Total Production: A summary of data recorded under (4).

3-1751

Form NR-1A

(Nov. 1945)

## MIGRATORY BIRDS

(other than waterfowl)

Refuge WheelerMonths of January to April 1955.

(1) Species  Common Name	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total Estimate
	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Number
<u>I. Water and Marsh Birds:</u>										
Double-crested cormorant	-	-	150	Jan. 1.	2	April 1				200
Pied-billed grebe	-	-	100	Feb. 15	Still present					200
Great blue heron	-	-	300	Apr. 20	"	"				450
American egret	1	Mar. 28	100	Apr. 30	"	"				150
Little blue heron	1	Mar. 31	50	Apr. 30	"	"				75
Green heron	1	Apr. 1	10	Apr. 30	"	"				20
Black-crowned heron	25	Feb. 3	50	Feb. 10	20	Feb. 20				100
 <u>II. Shorebirds, Gulls and Terns:</u>										
Ring-billed gull	-	-	1,000	Jan. 1	Still present					1,500
Herring gull	-	-	350	Jan. 1	"	"				500
Bonaparte gull	15	Jan. 28	20	Feb. 1	1	Mar. 24				25

(over)



(1)	(2)	(3)	(4)	(5)	(6)
III. <u>Doves and Pigeons:</u>					
Mourning dove	Permanent resident	1300	Apr. 30		2,000
<del>White-winged dove</del>					
IV. <u>Predaceous Birds:</u>					
<del>Bald eagle</del>	Throughout period	3	-	-	5
Duck hawk	"	4	-	-	6
Horned owl					
Magpie					
Raven					
Crow . . . . .	Throughout period	150,000	Jan. 1.		150,000
Cooper's hawk	"	200	Jan. 1		300
Sharp-shinned hawk	"	100	Jan. 1		150
Marsh hawk	-	200	Jan. 1.	1	250
Barred owl	Permanent resident	150	Apr. 30	Apr. 1.	175
Sparrow hawk	"	50	Jan. 1		75
Red-shouldered hawk	"	225	Jan. 1		250
Red-tailed hawk	Throughout period	50	Jan. 1		75
Reported by.....					

#### INSTRUCTIONS

- (1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiformes)  
 II. Shorebirds, Gulls and Terns (Charadriiformes)  
 III. Doves and Pigeons (Columbiformes)  
 IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)
- (2) First Seen: The first refuge record for the species for the season concerned.
- (3) Peak Numbers: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned.
- (5) Production: Estimated number of young produced based on observations and actual counts.
- (6) Total: Estimated total number of the species using the refuge during the period concerned.

Refuge WheelerMonths of January to April, 19455.

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'd.	Estimated Total	Percentage	Hunting	For Re- stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Bob-white Quail:	Pasture, 1200 A.	12			65 male				100	
	Cultivation and hay, 4700 acres	5			35 female				90	
	Timber, 4000 "	50							0	
	Brush and pine plantations, 300 A.	50							60	
	Seedfields, 2200 A.	11							200	
	Brushfields, 3000 A.	10							300	
									<u>1770</u>	
Ring-necked Pheasants:	General - all of refuge	-	0	9	10 males 66 females	0	0	0	9	Five pheasants observed during period, as result of local releases.

## INSTRUCTIONS

### Form NR-2 - UPLAND GAME BIRDS.\*

- (1) SPECIES: Use correct common name.
- (2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.
- (4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.
- (5) REMOVALS: Indicate total number in each category removed during the report period.
- (6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.
- (7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

\* Only columns applicable to the period covered should be used.

3-1754  
Form NR-4  
(June 1945)

SMALL MAMMALS

Refuge Wheeler

Year ending April 30, 1955.

(1) Species	(2) Density		(3) Removals					(4) Disposition of Furs					(5) Total Popula- tion	
Common Name	Cover Types & Total Acreage of Habitat	Acres Per Animal	Hunting	Fur Harvest	Predator Control *	For Re- stocking	For Re- search	Share Trapping			Total Refuge Furs Shipped	Furs Donated	Furs Destroyed	
								Permit Number	Trappers Share	Refuge share				
Gray squirrel	Bottomland hardwoods, 4200 acres.	0.38	2566											11,050
Fox squirrel	Upland hardwoods and pines, 300 acres.	10.												30
Beaver	Stream banks, 2 mi.													7
Muskrat	Marginal shoreline, 1200 acres	5.						12			3			240
Woodchuck	All types, 500 acres	25												20
Cottontail rabbits	All types, 19,000 A.	7	30											2714
Swamp rabbits	All types, 5,000 A.	9	38											555
Mink	Streams, sloughs, 275 M.			34				12	34					60
Striped skunk	All types, 19,000 A.	45		23				12	23					420
Raccoons	All types, 19,000 A.	14	215	49				12	49					1357
Opossum	All types, 19,000 A.	11	27	96				12	96					1728
Gray fox	All types, 19,000 A.	65	20	22				12	22					292
Red fox	All types, 19,000 A.	90	14	7				12	7					211
Flying squirrel	Woodland, all types, 4500	10												450
Chipmunk	Upland, 500 A.	10												50
* List removals by Predator Animal Hunter														

\* List removals by Predator Animal Hunter

REMARKS: General decline in raccoons and opossums noted, with increases in gray squirrels, rabbits, foxes and skunk

Reported by \_\_\_\_\_

## INSTRUCTIONS

Form NR-4 - SMALL MAMMALS (Include data on all species of importance in the management program; i. e., muskrats, beaver, coon, mink, coyote. Data on small rodents may be omitted except for estimated total population of each species considered in control operations.)

- (1) SPECIES: Use correct common name. Example: Striped skunk, spotted skunk, short-tailed weasel, gray squirrel, fox squirrel, white-tailed jackrabbit, etc. (Accepted common names in current use are found in the "Field Book of North American Mammals" by H. E. Anthony and the "Manual of the Vertebrate Animals of the Northeastern United States" by David Starr Jordan.)
- (2) DENSITY: Applies particularly to those species considered in removal programs. Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottom land hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) REMOVALS: Indicate the total number under each category removed since April 30 of the previous year, including any taken on the refuge by Service Predatory Animal Hunter. Also show any removals not falling under headings listed.
- (4) DISPOSITION OF FUR: On share-trapped furs list the permit number, trapper's share, and refuge share. Indicate the number of pelts shipped to market, including furs taken by Service personnel. Total number of pelts of each species destroyed because of unprime-ness or damaged condition, and furs donated to institutions or other agencies should be shown in the column provided.
- (5) TOTAL POPULATION: Estimated total population of each species reported on as of April 30.
- REMARKS: Indicate inventory method(s) used, size of sample area(s), introductions, and any other pertinent information not specifically requested.

## REFUGE GRAIN REPORT

Refuge Wheeler - AlabamaMonths of January through April, 1955

(1) VARIETY*	(2) ON HAND BEGINNING OF PERIOD	(3) RECEIVED DURING PERIOD	(4) TOTAL	(5) GRAIN DISPOSED OF				(6) ON HAND END OF PERIOD	(7) PROPOSED OR SUITABLE USE*		
				Transferred	Seeded	Fed	Total		Seed	Feed	Surplus
Fescue	1200 lb.	1,000 #	2,200 lb.		100 lb.		100 lb.	2100 lb.	2100 lb.		
Corn	800 bu.		800 bu.	350 bu.		430 bu.	780 bu.	20 bu.		20 bu.	
Milo	445 bu.		445 bu.					445 bu.	445 bu.		
Brown-top millet	24,000#		24,000 lb.					24,000 lb.	24000 lb.		
Jap millet	9,500 lb.		9,500 lb.					9,500 lb.	9500 lb.		
Lespedeza	300 lb.		300 lb.		100 lb.		100 #	200 #	200 lb.		
Soy beans		40 bu.	40 bu.					40 bu.	40 bu.		

(8) Indicate shipping or collection points Decatur, Alabama.(9) Grain is stored at Refuge headquarters.

(10) Remarks \_\_\_\_\_

\*See instructions on back.

## REFUGE GRAIN REPORT

This report should cover all grain on hand, received, or disposed of, during the period covered by this narrative report.

**Report all grain in bushels.** For the purpose of this report the following approximate weights of grain shall be considered equivalent to a bushel: Corn (shelled)—55 lb., corn (ear)—70 lb., wheat—60 lb., barley—50 lb., rye—55 lb., oats—30 lb., soy beans—60 lb., millet—50 lb., cowpeas—60 lb., and mixed—50 lb. In computing volume of granaries, multiply the cubic contents (cu. ft.) by 0.8 bushels.

- (1) List each type of grain separately and specifically, as flint corn, yellow dent corn, square deal hybrid corn, garnet wheat, red May wheat, durum wheat, spring wheat, proso millet, combine milo, new era cowpeas, mikado soy beans, etc. Mere listing as corn, wheat, and soybeans will not suffice, as specific details are necessary in considering transfer of seed supplies to other refuges. Include only domestic grains; aquatic and other seeds will be listed on NR-9.
- (3) Report all grain received during period from all sources, such as transfer, share cropping, or harvest from food patches.
- (4) A total of columns 2 and 3.
- (6) Column 4 less column 5.
- (7) This is a proposed break-down by varieties of grain listed in column 6. Indicate if grain is suitable for seeding new crops.
- (8) Nearest railroad station for shipping and receiving.
- (9) Where stored on refuge: "Headquarters granary," etc.
- (10) Indicate here the source of grain shipped in, destination of grain transferred, data on condition of grain, unusual uses proposed.

## REFUGE GRAIN REPORT

Refuge Wheeler - AlabamaMonths of January through April, 1955

(1) VARIETY*	(2) ON HAND BEGINNING OF PERIOD	(3) RECEIVED DURING PERIOD	(4) TOTAL	(5) GRAIN DISPOSED OF				(6) ON HAND END OF PERIOD	(7) PROPOSED OR SUITABLE USE*		
				Transferred	Seeded	Fed	Total		Seed	Feed	Surplus
Pescus	1200 lb.	1,000	2,200 lb.		100 lb.		100 lb.	2100 lb.	2100 lb.		
Corn	800 bu.		800 bu.	350 bu.		450 bu.	700 bu.	20 bu.		20 bu.	
Pile	445 bu.		445 bu.					445 bu.	445 bu.		
Brown-top millet	24,000#		24,000 lb.					24,000 lb.	24000 lb.		
Jap. millet	9,500 lb.		9,500 lb.					9,500 lb.	9500 lb.		
Les. sericea	300 lb.		300 lb.		100 lb.		100 lb.	200 lb.	200 lb.		
Soy beans		40 bu.	40 bu.					40 bu.	40 bu.		

(8) Indicate shipping or collection points Focatur, Alabama.(9) Grain is stored at Refuge headquarters.

(10) Remarks

\*See instructions on back.

*Aug*



## REFUGE GRAIN REPORT

This report should cover all grain on hand, received, or disposed of, during the period covered by this narrative report.

**Report all grain in bushels.** For the purpose of this report the following approximate weights of grain shall be considered equivalent to a bushel: Corn (shelled)—55 lb., corn (ear)—70 lb., wheat—60 lb., barley—50 lb., rye—55 lb., oats—30 lb., soy beans—60 lb., millet—50 lb., cowpeas—60 lb., and mixed—50 lb. In computing volume of granaries, multiply the cubic contents (cu. ft.) by 0.8 bushels.

- (1) List each type of grain separately and specifically, as flint corn, yellow dent corn, square deal hybrid corn, garnet wheat, red May wheat, durum wheat, spring wheat, proso millet, combine milo, new era cowpeas, mikado soy beans, etc. Mere listing as corn, wheat, and soybeans will not suffice, as specific details are necessary in considering transfer of seed supplies to other refuges. Include only domestic grains; aquatic and other seeds will be listed on NR-9.
- (3) Report all grain received during period from all sources, such as transfer, share cropping, or harvest from food patches.
- (4) A total of columns 2 and 3.
- (6) Column 4 less column 5.
- (7) This is a proposed break-down by varieties of grain listed in column 6. Indicate if grain is suitable for seeding new crops.
- (8) Nearest railroad station for shipping and receiving.
- (9) Where stored on refuge: "Headquarters granary," etc.
- (10) Indicate here the source of grain shipped in, destination of grain transferred, data on condition of grain, unusual uses proposed.