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WHEELER NATIONAL WILDLIFE REFUGE
NARRATIVE REPORT

September - December 1963

I. GENERAL

A. Weather Conditions:

<u>Month</u>	<u>Precipitation</u>	<u>Max. Temp.</u>	<u>Min. Temp.</u>
September	.73	94	45
October	.21	94	31
November	4.22	77	21
December	4.94	64	11

Weather was extremely dry at the beginning of the period and there was no rain until a few showers fell during the latter half of November. Some parts of the refuge received no rain of any consequence from July 24 through the third week of November. Temperatures remained mild until late November and there was no killing frost until the last few days of October.

With the coming of December, weather changed abruptly. Hard cold fronts began moving in bringing heavy rains and snows. There was no snow that remained on the ground for any appreciable period until December 22 when a heavy rain changed to sleet then to snow and dumped about a 4 inch accumulation that covered everything through December 26. This had hardly melted when a 12 inch snow fell on December 31.

December brought temperatures as low as 11 degrees and icelocked the reservoir except for the deeper channels and spring holes.

The mild, dry weather of September, October and most of November provided near ideal conditions for the rapid completion of the refuge's Accelerated Public Works Program, the building of new roads under the timberland management program and the completion of crop harvest. However, it was so dry that it delayed the planting of fall crops and, in some cases, resulted in poor stands.

Comparing the weather with that of this same period last year shows a marked similarity. The drouth was more severe this year and rains began even later. December brought more snow but higher temperatures. There have been no river floods during the period.

B. Habitat Conditions:

1. Water.

a. General Reservoir Levels. Although a TVA forecast predicted full lake levels until mid-October, there was a sharp drop in late September followed by a gradual recession. Levels actually dipped below the 550. mark for a brief period in early December, but were near the 551 mark at the close of the period.

b. Dewatered Units.

1. Rockhouse-Buckeye-Blackwell Unit. As planned, pumping ceased in mid-September. As usual, Blackwell Slough was closed from the remainder of the unit and backfilled as much as possible to store water. Emergency pumping was required twice to prevent premature flooding of crops. Following the completion of harvest during the first few days of November, the flood gates were opened at the pump-house, the unit backfilled to river level, then the stored water in Blackwell Slough gravity spilled to the lower sloughs. All this brought the general level to about the 553 mark, enough water for good duck feeding. Rains since have brought the level up slowly to about the 554.2 mark. This unit has functioned almost ideally, with birds consuming available food as it is reached by slowly-rising water, and it has held heavy duck numbers since early November.

2. White Springs Unit. Pumping also stopped on the White Springs unit in mid-September. With a long drouth in effect, flood gates were reopened on October 15, but rapidly-dropping river levels allowed only a slow admission of water. Levels had risen only to the 550 mark by early November and the rains of November and December have brought it to only the 551.2 level. However, this has flooded much of the lowest of the unit, ponded water in many spots and allowed heavy waterfowl use, with birds "feeding dry" on the remainder. Some foods remained in both units at the close of the period.

3. Crabtree Slough Sub-impoundment. Stoplogs were placed in this unit in early October to collect water for waterfowl trapping and feeding. However, in mid-October, TVA removed these logs and drained the unit to permit better brush control. Following brush cutting, logs were replaced in mid-November and the sub-impoundment slowly filled to about the 552.5 level.

2. Food and Cover.

As predicted on the last report, the mast crop was one of the best in years. Hickories, muscadines, dogwoods, walnuts, beeches, blackgums, hackberries and wild bunch grapes bore bountifully. Acorn and persimmon production were at least average. There was a fine production of wild millet and some smartweed on low areas. There were only moderate amounts of pondweeds, musk-grass and other submerged vegetation. Mudflats, exposed late, produced no hard food, but did spring up to small spike rush that furnished considerable goose grazing. Due to the rather mild fall, some of this remained green into December.

Crop production was well above that of 1962. Corn production was spotty, ranging from total failures to 118 bushels per acre. Overall, corn

production was good and 20,880 bushels were left in the field for waterfowl. Comparing this with 1962, production shows an increase of nearly 50 per cent.

Soybeans suffered from dry weather and produced only moderately, with a few of the best fields reaching 25 bu. per acre, good fields averaging 20 bu. and the majority ranging from 10 to 15 bu. Grain sorghum acreage was limited and that planted produced poorly. Millet suffered from drouth damage, but averaged good production. Buckwheat produced surprisingly well under the dry conditions. In all, some 32,495 bushels of grain and seed were left in the field for waterfowl, over a 20 per cent increase in the amount of hard food made available last year.

A factor seldom considered in waterfowl farming is the value of waste grain and seed. For example, there were 1,256 acres of corn and 1,504 acres of soybeans harvested on Wheeler Refuge this year. Assuming that waste amounted to only two bushels per acre, a most conservative estimate, this would total over 5,500 bushels of additional food. Waterfowl do glean these harvested fields closely, and the annual waste is a real contribution.

Efforts were made to plant a maximum green acreage. However, after the almost total failure of crops planted in the fall of 1962, farmers were reluctant to gamble seed and work this fall. Then, too, conditions were extremely dry, making land preparation difficult and discouraging fall planting. Added to this, there was the fact that the refuge did not have large amounts of wheat, oats and ryegrass, as is normally the case, so could not promote oversowing by furnishing seed. However, there is a total of approximately 1,200 acres of good greenstuff including small grain, ryegrass, fescue and fescue-clover mixtures. This is supplemented by three or four hundred acres of old pasture sod, vetch cover crop and other greenstuff that will provide at least some grazing.

II. WILDLIFE

A. Migratory Birds:

1. Waterfowl.

a. Geese.

1. Snow Geese. Snow geese appeared the first week of October and the first aerial count, October 14, showed 8 present. Subsequent counts include 10 on October 22, 17 on October 30, 25 on Nov. 7, 50 on Nov. 12, 50 again on Nov. 21, and 70 on all counts through the remainder of the period. This peak of 70 exactly equals the top count during this same period in 1962. No snow geese have been banded and none are known to have been killed by hunters.

2. Blue Geese. Blue geese also appeared during the first week of October. Airplane counts showed 10 on October 14, 70 on Oct. 22, 200 on Oct. 30, 300 on Nov. 7, 500 on Nov. 12 and 1,500 on Nov. 21. This latter figure was corroborated by a ground count made on Nov. 16 by visiting members of the Alabama Ornithological Society. A Dec. 5

count showed only 300 present, though ground counts indicated at least 500 present. There were no changes through the remainder of the period. Although snow goose counts are accurate almost to the bird, blue geese tend to be lost among the mass of Canadas, and it is probable that the above figures are low. No blue geese were banded and only a single bird is known to have been shot by a local hunter. The top count during the Sept.-Dec. portion of last year was 800.

3. Canada Geese. The first incoming flock of Canada geese was seen on Sept. 14, two days earlier than the first arrivals last year. The birds poured in in unprecedented numbers during late September and early October. There were 22,225 present on October 14, 23,050 on Oct. 22, 25,575 on October 30, 41,600 on Nov. 7, On Nov. 12, 41,600, on Nov. 21, 42,700, on Nov. 30, 42,675, on Dec. 5, 44,525 and 52,175 on Dec. 16. Canadas not only reached an all-time peak for this refuge, but also arrived in force much earlier causing a terrific increase in goose use days. Comparing the peak count of 52,000 Canadas with the peak of 40,000 during the Sept.-Dec. period last year shows an increase of 30 per cent.

Arriving geese seemed hungry and turned quickly to feeding in corn fields. However, with the beginning of cold weather in late November, even though some corn remained, the birds moved to greenstuff and grazed heavily. This was an odd switch, for past experience has shown that the birds prefer corn in cold weather and seldom do heavy grazing until late winter. The snows of late December covered all food except soybeans and birds made good use of these.

No swans have been seen this year. Ernest Jemison reported a small flock of white fronted geese on November 29. Banding traps were set on October 1 and have been tended since with a total of 181 Canada geese banded. There have been a number of repeats and a half dozen birds wearing Minor bands were trapped. Hunting success has not been spectacular, but there has been a slow, steady attrition. The goose bag for this season will show a definite increase over that of the last season.

b. Ducks.

As usual, only resident ducks and a few early migrants were on hand at the beginning of the period. The blue winged teal flight was the lightest in many years. Duck arrivals were slow. The October 14 count showed only 1,200 present. Following counts showed 1,000 on Oct. 22, 7,000 on October 30, 27,500 on Nov. 7, 30,500 on Nov. 12 and Nov. 21, 37,500, on Nov. 30, 40,000, on Dec. 5 and 55,000 on Dec. 16. Comparing this peak of 55,000 with the peak of 43,000 during the same period last year shows an increase of approximately 28 per cent.

Divers, never common here, showed a definite increase and there were frequent sightings of ruddy ducks, redheads and canvasbacks. Ring necks were fairly common. Among the dabblers, black ducks continued to increase and at times were second in numbers only to the mallards. Pintail and widgeon numbers were high and definite increases were noted among gadwalls and shovelers. Woodducks were more common than usual. Birds made heavy use of refuge corn fields, turning to soybeans during the latter weeks of the period.

Large numbers of geese
remained at Horicon Refuge
until Dec 14 and 15 when
virtually all departed. Could
the increase which Tom shows
for Dec 16 be a part of this
flock?

DJA

The young mallards released by the Boy Scouts of America during the summer had grown to full maturity by early fall. They could be identified until finally lost among the swarm of ducks that came in during November. It is estimated that about half survived. No undesirable results of these releases have been noted.

As was true with the White Springs dewatered unit on the refuge, dewatered land on the adjoining Swan Creek Public Hunting Area remained almost dry until mid-December. Local duck hunting was fair, though success was less high than last year. There has been little corn field shooting, for early harvest and dry weather allowed farmers to break these soon after corn was gathered. The refuge has banded 650 ducks, including mallards, black ducks, pintails and American widgeons.

c. Coots.

Coots have been present since early fall, but again numbers declined. The peak for the period was only about 600 birds, or half the peak for the same period last year.

2. Other Migratory Birds:

a. Doves.

Local dove numbers showed a definite drop from those of the fall of 1962. There were a few good shoots during the first few days of the October season, then concentrations seemed to vanish. Despite cold weather, scattered doves are still around.

b. Shorebirds.

Following a trend noted for the past two or three years, local snipe numbers continued to increase. There was a single woodcock sighting during the period. Despite the late drawdown, other shorebird numbers appeared above average, and numbers of greater and lesser yellowlegs, dowitchers, black bellied plovers and sandpipers were noted.

B. Upland Game Birds:

Quail numbers seem slightly below those of last year, due probably to the overwet spring and early summer.

The State released sixty of the young Iranian pheasants during September and October bringing the total to 178 turned loose on the refuge during the calendar year. These birds are noted regularly and seem to be doing well. They appear to be becoming much wilder.

Although Redstone Arsenal officials continue to report increases among turkey and high turkey numbers, Richard Bays has marked all pine plantations on refuge parts of the Arsenal and those adjoining along with a part of the hardwood and has seen neither turkeys nor turkey signs. Beginning last spring, there were several reports of a flock of seven wild turkeys using in the Dancy bottoms and adjoining private land. At first, refuge personnel discounted these reports.

More recently, reports have persisted and some have come from good observers. In early November, refuge employee Tom Sandlin sighted two turkeys that appeared wild in the edge of the Dancy bottoms. There is the possibility that these are merely domestic birds ranging far from home or domestic birds that have become feral. On the other hand, in 1958, the Alabama Conservation Department stocked a small flock of wild turkeys on nearby Burleson Mountain. These persisted for a year or two then vanished and it was assumed had died or been killed by predators. It is possible that some survived and that the little Dancy bottoms flock is those remaining or their descendants.

C. Big Game Animals:

Although Arsenal officials continue to report high deer numbers, Richard Bays has marked all pine stands and some of the hardwood stands on refuge parts of the Arsenal and has seen neither deer nor deer tracks. On other parts of the refuge, deer sign was reported along the lower east side of Cotaco Creek and in the river bottoms between Madden Branch and Mitchell's Spring. Good observers reported sighting adult deer in the Dancy bottoms.

D. Other Mammals:

As proved by the October hunt, local squirrel numbers are definitely low. General observations indicates that rabbit numbers are only average or below.

Mink, raccoons, muskrats and skunks appear to have definitely increased. More beaver sign has been noted than usual.

E. Predaceous Birds:

Again, crow numbers using the refuge and this general locality have definitely increased. In early November a large roost was established at the old roost site near Edmondson Slough. A public shoot was held for four afternoons in an effort to dislodge the birds, but this failed. In early December, there was a small roost on the White Springs islands along with the Edmondson Slough roost. Another public shoot was held for five late afternoons coupled with the use of carbide exploders borrowed from the Lacassine Refuge. The White Springs Island roost appears to have been broken up, but the birds remain in full force in the Edmondson Slough roost.

A huge black bird roost is located on private land a short distance east of the Flint Creek arm of the refuge and in the Priceville vicinity. Ernest Jemison spent a late afternoon in this roost and estimated at least a million birds using it. Though all the black bird groups were represented, red-wings predominated.

There has not been a single positive bald eagle sighting during the period, although two were tentatively identified by Richard Bays in the White Springs vicinity in early December.

No change has been noted in the number or behavior of other predaceous birds.

F. Other Birds:

The mild weather that continued through November resulted in late records for many species. These included cattle egrets on October 17, dowitchers on Nov. 16, solitary sandpipers on Oct. 13, spotted sandpipers on November 16 and pectoral sandpipers on Dec. 10. A lone white pelican was present from October 11 through 14. Ernest Jemison reported sighting a single sandhill crane, never before noted on Wheeler, walking about on Beaver Dam Peninsula in company with a flock of Canada geese on November 28 and a flock of cinnamon teal on Dec. 11.

G. Fish:

As usual, fish catches showed some improvement when water cooled in October. Some good bream catches were reported along with some good strings of crappie and lake bass. Fishing use continued rather heavy until the severe weather of mid-December.

H. Reptiles:

Nothing new was noted among refuge reptiles this period.

I. Disease:

Neither Trichomoniasis among doves nor any other disease was noted among refuge wildlife this period.

III. REFUGE DEVELOPMENT AND MAINTENANCE

A. Physical Development:

1. Soil and Moisture Work.

Rotation disking for Johnson grass control was continued into the early parts of the period. Fescue sodding was completed before the beginning of the period. However, extremely dry weather resulted in a patchy stand on one ten-acre location and this was reseeded. Following rains, fescue and clover plantings germinated well and good sods appear to have been established, unless these are wiped out later by heavy goose grazing.

Full scale cover crop planting began in early September. Some additional seed were bought with soil and moisture funds. In all, refuge personnel and machinery prepared and sowed 205 acres to vetch mixed with wheat, oats and ryegrass. Excellent stands have resulted.

The small four-acre mast box woods field on Flint Creek Island showed a definite magnesium shortage and was in need of additional liming. To correct the situation there, seven tons of dolomitic lime were bought and spread on it.

Two of the Flint Creek Island fields, the above mentioned 4 acres and a ten acre field south of the pine grove still showed a rather low phosphate reading despite previous treatment. In an effort to bring these up to parity with surrounding fields, seven tons of 0-20-10 fertilizer were bought and spread on them at a rate of 1,000 lbs. per acre prior to cover cropping.

With a dry fall and early crop harvest, there were opportunities for initial liming and full advantage was taken of this. In all, 330 tons of calcitic lime were bought and spread. Treated areas included the large field on the Murphree Place and two adjoining smaller fields, a part of the big Garth Slough pasture, the large shelf pasture lying between Mooresville and Limestone Creek, the two river bottom fields between Rockhouse Landing and the mouth of Limestone Creek, the completion of treatment on the White Springs Island and the lower Limestone Peninsula, completion of the land on the southern side of Dinsmore Slough and the treatment of a part of the land in the Sharp's Ford Bottom. All total, approximately 225 acres were covered. Related work including tree planting, rip-rapping, etc. was done, but this was financed through other funds.

2. Roads, Bridges, Etc:

The 16-foot bridge across the ditch on the old Murphree Place had rotted, undercut and become dangerous. This was torn out and completely rebuilt. All other bridges on the southern side of the river were retreated with wood preservative. The road leading from the black top to Sunnyside Landing had become badly cut up and almost impassable. This was reditched, raised and graded. The south boundary truck trail from Cave Springs to its junction with the public road near Bald Knob was graded. Much additional road work was done during the period, but this will be discussed under timberland management and under the Accelerated Public Works Program.

3. Timberland Management:

Timberland management funds were used for three purposes during the period. A transistor-equipped mobile shortwave radio unit was bought and installed in the Forester's power wagon. To balance the heavy road building under the Accelerated Public Works Program on the northern side of the river, timberland management funds were used to build three much-needed roads into inaccessible areas on the southern side of the river. Housing adjacent to the refuge land had blocked the old road that lead eastward from Bluff City. To provide access there, it was necessary to build a new road just inside the refuge boundary for a distance of a quarter mile. A second road was built from the refuge boundary near the Charest residence northward to the junction of Madden Branch and Coteco Creek, a distance of one mile. This provides access into a part of the refuge that could previously be reached only under extremely dry conditions. The third road began at the public road a short distance east of the Sharp's Ford bridge and continued northeastward through the Sharp's Ford and Talley bottoms for a distance of 2.9 miles to junction with the blacktop road near Sunnyside Landing. Again, this will permit normal access into an area that formerly was accessible only under

drouth conditions. The latter two roads required much fill work and are well equipped with culverts. In all, a little over 4 miles of new roads were built under this program.

Although it was recently planned to plant large numbers of trees under the Accelerated Public Works Program, that program was virtually completed before cold and wet weather permitted planting and planting costs was shifted to timberland management funds. Two hundred thousand seedlings were bought and transported from the Alabama state nursery and planting began in early December. Both a planting machine and hand crews were used. Planting was still in progress at the end of the period, but approximately 110,000 of the seedlings were planted in December.

4. Accelerated Public Works Program:

Rental heavy equipment became available during the early part of the period and work began full scale. The program was blessed with almost ideal weather conditions. In an effort to take full advantage of good weather and complete heavy equipment use before fall bad weather set in, full emphasis was given to complete work by the earliest possible date. All construction was completed by mid-November, though grading, graveling, etc. continued until near the end of the period. The following was accomplished:

a. TSI treatment given 1,500 acres of woodland. This covered all refuge woods on the northern side of the river from U. S. Highway 31 eastward to Beaver Dam Creek. In addition, 150 acres of pine plantations were marked for selective thinning and weed trees were cut, piled and burned and stumps treated over a 1,600 acre area.

b. Over 19 miles of new roadway were built, including much fill work, many lines of culverts installed and these roads thoroughly graveled. All wooden bridges, except the Limestone Creek bridge, on Limestone County parts of the refuge were removed and replaced by large culverts. In addition, 579 tons of rip-rap were bought and 749 tons placed or spread. Road edges were brushed back along all existing Limestone County roads and blind curves cut off and new gravel added to approximately 15 miles of road and all roads in the county thoroughly graded.

In addition to the above, 38 miles of boundary were thoroughly posted, old rubbish dumps cleaned up and barriers relocated and new road barriers built.

5. Headquarters Development and Maintenance:

Much work was done to the two headquarters residences. In past years, only the windows on the northern sides of both residences had been weather-stripped. During the period, all remaining windows and doors of both buildings were completely weather stripped and cracks caulked. Weights had broken loose from many windows from both residences and these were re-corded and rotted parts of window frames were replaced and repainted.

In both residences, splash from kitchen sinks had rotted away woodwork around them. A new cabinet was built in residence # 2, new sink faucets installed in residence # 1 and, in both residences, rotted woodwork was torn away, replaced and new splash boards and cabinet tops of formica were installed.

Through contact with the Madison County Health Department, the Triana residence was termite treated with the health department paying the bill. Repair work is needed there, and the Madison County Health Department promises to do this soon.

During fire prevention week, a fire safety inspection by the Decatur Fire Chief resulted in his classifying the old salamander heater, that had been used in the refuge shop for years, as a fire hazard and recommending that this be replaced by a blower-type butane-propane wall furnace. This was done and a 250 gallon liquid gas tank purchased to supply the heater.

Although the refuge office was plumbed for hot water when it was constructed 23 years ago, a hot water heater has never been installed. This period, a 12 gallon heater was purchased and installed and new faucets placed on the office sink. This hot water is much appreciated by those who must wash greasy hands during freezing weather.

Following recommendations made by Messrs. Gresh, Towns and Givens during a recent visit, the headquarters fence paralleling Highway 67 was ripped away and masses of rose vines bulldozed and burned. This has been replaced by wings of trees planted to the east and west of the entrance. In addition, all remaining fences on the headquarters site, except those that serve some purpose as screens or dividers, were removed.

New wildlife paintings were added to the museum room. Several new mounted specimens were added including a gray squirrel, chipmunk, flying squirrel, screech owl, Carolina wren, red winged, blue goose, a pair of pintail and a raccoon.

Overthick shrubbery was thinned, the remainder pruned and much time given to lawn care and general cleanup. The eastern portion of the lawn area was reseeded to a fescue-white clover mixture.

6. Vehicle and Equipment Maintenance and Repair:

The 1951 Ford stake truck and the 1954 Dodge pickup truck were sold during the period. To aid with the Accelerated Public Works Program, three 1956 Chevrolet 1/2 ton pickups were obtained from military surplus. All were equipped with spare wheels and tires, repainted and official stencils placed on doors. One required a new battery.

The Plymouth sedan received some body repairs. A new battery, muffler, right window and ventilator glasses, tie rod end, plugs and points, ignition wiring, and a resistor were placed on the 1958 Chevrolet sedan. Its radiator was repaired, wheels balanced and seat belts were installed. The 1956 Chevrolet sedan required three sets of points, a coil, a resistor, a new battery and a new oil filter. Its carburetor was cleaned and plugs spaced.

New tires and spring shackles were placed on the new 1962 pickup, its wheels balanced and its front end aligned.

Both the 1958 Ford pickups had seat belts, battery, new shock absorbers, new tie rod ends, and new universal joints installed. One required new tires, the other new front tires. In addition, a new thermostat, king pins, headlight bulb, tail pipe and a fuel pump was installed on one.

The 1956 Ford pickup received a complete set of new tires, a new fuel pump, universal joints and points.

The 1961 Dodge power wagon had a shortwave radio set installed in it, eight universal joints replaced, its transmission housing welded and a transmission gear replaced. Its turn signals were repaired and it was equipped with a spare wheel, tire and mounting.

The 1½ ton Dodge stake truck was equipped with seat belts, a new fuel pump, flexible gasoline line and generator. On the White truck-tractor and lowboy, the rear axle and horn was replaced and brakes repaired.

The clutch of the old MM farm tractor was completely rebuilt. As for the TD-18 crawler, its rollers were built up with welding iron, two roller seals replaced and a roller axle honed down, the oil and fuel filters replaced and the starter reworked. Using light angle iron, a safety guard was built over the operator's seat to protect him from falling debris, then roofed with sheet metal to form a cab.

The old D-7 bulldozer had its oil radiator reworked, its clutch linkage replaced twice, two clutch pins replaced and the A frame welded. Later, this unit was deadlined as unfit for further use without major engine repairs. A plate was welded on the blade of the D-6 bulldozer and its oil and fuel filters replaced.

The motor grader received heavy use during the period. It was equipped with two new tires, a new thermostat, a new oil filter and its oil filter system changed over to a standard Cat. type. It was also given new shear pins and a new gear shifting stick. The pan had its lift stabilizer welded, a new cable and two tires replaced.

All farm machinery was assembled, cleaned and thoroughly checked over, repaired and readied for spring use. New blades were placed on the Lilliston mower and its frame welded. New stabilizer springs were placed on discs. The lawn mower was repaired, its axle welded and new braces put on it. All vehicles and other water cooled equipment were thoroughly winterized.

The electric welder, procured last period from military excess, was rigged and placed in use this period. In addition to the three 1956 Chevrolet pickups mentioned previously, much good equipment and supplies were obtained from excess listings. These include a huge MRS diesel wheel tractor that we hope to use to pull the large Rome offset

disc, a Thermo-fax machine and electric typewriter for the office, a large supply of aluminum that will be sawed to boundary post lengths, along with axes, screw driver, a kit of assorted tools and miscellaneous small wrenches, plyers and other tools.

7. Miscellaneous Jobs:

Several official trips were made during the period and these included a trip to Brookley Field, Ala. for surplus materials, a trip to Ft. McClellan, Ala. to inspect a surplus tractor and a second trip to procure it, two trips to the State Nursery at Prattville, Ala. for tree seedlings, a trip to the Marion Fish Hatchery to attend the Regional Safety School and a trip to Swan Lake, Mo. to aid in the goose transplant program.

Considerable work was done to the boundary, completing the 1963 reposting and marking of all Wheeler boundary except that lying inside the Redstone Arsenal Reservation.

The farming program was carried on with fall settlements negotiated with all cooperators then continually checked for compliances. As a result of the farming operations, over 2,000 bushels of rental grain and seed were taken in and stored. Considerable time has been spent shipping official signs stored here to other refuges and shipping or loading surplus grain, seed and property items.

In addition to the above, twelve hundred squirrel hunt permits were issued and this hunt closely supervised, two crow roost shoots held, a continuous patrol maintained, many visiting groups guided about and innumerable small jobs completed.

B. Plantings:

1. Aquatic and Marsh Plants:

No plantings of this type were made this period.

2. Trees and Shrubs:

In an effort to plant remaining open, unused land and withdraw from agriculture those small, unimportant fields that make no direct contribution to waterfowl feeding, the refuge began the rather ambitious program of planting 200,000 seedlings during the fall and winter of 1963-64. Seedlings were obtained as soon as enough cool weather and rain occurred to permit good planting. Actual planting began during the first few days of December and continued, whenever weather permitted, until the end of the period. A contract hand planting crew and a contract planting machine were used. Planting was at a rate of \$12.00 per thousand and had been done under the supervision of the refuge forester. Land along the eastern side of Village Creek and that in the Slaughter's Landing, Tally bottoms, Sharp's Ford, Cotaco Creek, Madden Branch and Bluff City vicinities had been covered. By the close of the period, approximately 110,000 seedlings had been planted.

3. Upland Herbaceous Plants:

Upland herbaceous plantings include fescue-white clover mixtures and vetch mixed with oats, wheat and ryegrass as reported above under soil and moisture work. A late drawdown prevented any sowing of mudflats.

4. Cultivated Crops:

As predicted, the Wheeler corn yield showed an improvement of over 20 per cent compared with that of 1962. Soybeans were hard hit by drouth, but nevertheless produced fair yields. Grain sorghum is rapidly disappearing as a local crop. This is due partly to the fact that its function as a late-planted crop has been taken over by the more profitable soybeans, partly because blackbird damage is making sorghum growing almost impossible.

After the almost total loss of crops planted in the fall of 1962, farmers were reluctant to make an investment in winter crops this fall. Extremely dry conditions during the time when fall crops are normally planted here also played a part in holding down acreage. There is a present tendency for agricultural officials to minimize the soil building value of cover crops and this is reflected in the attitude of refuge cooperators toward these crops.

The increase in the Wheeler wheat allotment from 61.7 to 101.7 acres was a welcome one and the entire allotment was planted by cooperators.

However, the lifting of wheat acreage restriction on private land has definitely dampened the enthusiasm of cooperators for an unlimited wheat acreage on refuge land.

Mention was made in the last report of the treatment of soybean seed with a molybdenum compound by cooperators, a new practice in this locality. The local Tennessee Valley Agricultural Sub-Station conducted tests with this compound this year and contact with the station manager indicates that the molybdenum caused a 12 per cent increase in soybean yield where land with a Ph reading below 6 was involved, no yield increase on land with higher Ph readings.

Department of Agriculture officials tell us that they have definite evidence that the white fringed beetle, a new pest here, now occurs in this locality.

C. Collections and Receipts:

1. Seed and Other Propagules:

There were, 50 lbs. ladino clover, 200 lbs. fescue, 1,000 lbs. vetch and 8255 lbs. ryegrass bought during the period. All other seed received were the result of the cooperative farming program and are listed on the NR-8 and NR8a forms.

2. Specimens:

A single specimen was collected during the period, a bird thought to be an European widegeon, caught in the refuge banding trap on November 15. This was submitted to the national museum and proved to be a young American widegeon with heavily iron stained plumage. A number of specimens have been added to the museum room display or in the process of preparation, but all were either picked up dead by refuge employees or donated by local hunters.

D. Control of Vegetation:

Four fifty five gallon drums of 2,4,5-T were bought and most of this used in connection with the Accelerated Public Works Program. This was used in sprayers to treat the cut stubs of willows bush-hooked from dewatered units in an effort to reduce regrowth and in tree injectors used in timber stand improvement work. Timber stand improvement work covered all woodlands, approximately 1,500 acres, on the northern side of the river from U. S. Highway 31 to Beaver Dam Creek. Virtually all willows were removed from the White Springs unit and from dewatered Buckeye and Rockhouse Sloughs.

All other vegetative control was limited to rotation discing for Johnson grass control and some rotation pasturing, the mowing of old fescue sods to clean them off for proper goose usage, the mowing of road edges and the clearing back of brush along road edges and blind curves.

E. Planned Burning:

No planned burning was done this period.

F. Fires:

Although drouth kept fire hazard unusually high from early September through late November, only a single serious fire occurred. This was a blaze on upper Beaver Dam Creek that covered 15 acres before it was suppressed, though it did little actual damage.

IV. RESOURCE MANAGEMENT

A. Grazing:

Drouth through late November and the heavy freezes of December kept pastures in poor condition and seriously limited grazing. Dry weather also reduced the establishment of new pasture sod.

B. Haying:

The dry weather of early fall provided near ideal conditions for hay harvest and the tonnage of hay cut exceeded that cut in 1962. Drouth also ruined some late-planted soybeans and these were salvaged as hay.

C. Fur Harvest:

There was no fur harvested during period and none is planned for following period. However refuge fur bearers do show indications of considerable increase.

D. Timber Removal:

Emphasis was placed on timber marking and sales. To avoid waste, all timber of merchantable value was sold from the rights-of-way of the many new roads constructed under the Accelerated Public Works Program. In addition, all pine plantations lying inside the Redstone Arsenal Reservation, all those lying between Blackwell Swamp and the Arsenal boundary and a limited acreage on the western side of Blackwell Swamp were marked for thinning and marked timber sold. In general, marking removed approximately 60 per cent of the stems. Toward the close of the period, work was shifted from pine plantations to the marking of hardwoods lying between Blackwell Swamp and Triana and those inside the Redstone Reservation for selective cutting.

The following sales were made during the period:

<u>Date:</u>	<u>Timber Products and Location:</u>	<u>Receipts:</u>
Sept. 17, 1963	58.18 cords pine pulpwood from rights-of-way	\$ 290.90
Oct. 11, 1963	188.00 cords of pine pulpwood west of Bradford Sinks & East of Barren Fork Creek	943.76
Oct. 17, 1963	132.00 cords of pine pulpwood west of Blackwell Swamp	669.24
Oct. 22, 1963	19,890 board feet on right-of-way, County Line Road	397.80
Oct. 22, 1963	42.71 cords pine pulpwood on right-of-way on Sivley Springs Road	213.55
Oct. 25, 1963	59.59 cords pine pulpwood on right-of-way, Beaver Dam Road	299.95
Nov. 6, 1963	357.00 cords pine pulpwood at Barren Fork and Bradford Sinks	1,813.56
Nov. 18, 1963	700.00 cords pine pulpwood between Blackwell Run and Triana	3,591.00
Dec. 2, 1963	410.00 cords pine pulpwood at Redstone Arsenal Reservation	2,107.30
	Total.....	\$10,327.06

E. Commercial Fishing:

As usual, commercial catches were light during early fall, increased as water cooled, then dropped again as water became very cold during the latter half of December. There were no changes in the number of commercial fishermen operating on the refuge or in methods of fishing.

F. Other Uses:

A single cook-out site for mussel shells, located near the mouth of

Cave Springs Run, continued to operate until October 15, but this operation was on shells hauled from far down river. Not a single ton of mussel shells was harvested from refuge water during calendar 1963. TVA is currently conducting a study aimed at determining the cause for the disappearance of local mussels.

The Limestone County Road Commission operated its refuge gravel pit through September, then left it unused until operations were resumed in late November and continued through the remainder of the period.

Morgan County began its pit operation in mid-September and continued intermittently throughout the period, though the amount removed was small.

There has been a continuous demand for easements, usually drainage and sewage easements, most of them stemming from the rapidly expanding eastern edge of Decatur that has pushed housing developments against the western boundary of the refuge. Most of these easements were not particularly objectionable. The majority was granted. Several have been completed and others are pending.

V. FIELD INVESTIGATION OR APPLIED RESEARCH

The refuge continued its cooperation with the State, County, and Department of Agriculture in local fire ant treatment with Mirex bait. During the period, that strip of refuge land extending southward along the Flint Creek backwaters from the Edmondson Slough vicinity to near the tuberculosis sanatorium was treated along with several thousand acres of non-refuge land immediately south of Decatur. Pre and post baiting examinations were made to determine damage to fish and wildlife, but none was found.

"Follow-up" observations on the 362 "hand reared" mallards released on the refuge by boy scouts were continued. These birds could be identified until early November when they were joined by the flood of migrant wild ducks and could not be separated. It is estimated that approximately 50% reached full maturity. No objectional features were discovered.

The effort to determine the practicality of rotation planting and discing in dewatered units, the studies of strips and plots left untouched and those disced but not seeded were continued until frost. These indicate that only 65% of the vegetation present was of any waterfowl food value whatever. However, drouth conditions prevailed, and it is possible that more wild millet and other good food plants may volunteer under more moist conditions.

The refuge continued to cooperate with the Alabama Department of Conservation in the Iranian pheasant study. Sixty additional young pheasants were released during the first half of the period.

NK-300, a millet-grain sorghum hybrid, was tried experimentally on dewatered land last summer. "Follow up" observations indicate that

this cross has the characteristic and most of the undesirable features of its grain sorghum parent and bears little resemblance to the millets. The growing season is long, about 120 days. Height growth ranges up to 5 feet. Stems are stiff and blackbird damage was heavy.

Experimental plantings of Indian and Baldwin millets were followed through. Baldwin millet required 94 days to mature sufficiently for combining. Average height growth was around 40 inches and production averaged 314 lbs. per acre. Indian millet required 143 days to reach full maturity, grew to a height of 6 feet and produced 335 lbs. of seed per acre. In neither case did these two experimental millets equal the production of Japanese and brown top millets planted on the same date and on adjoining sites. However, it is worth noting, particularly where Indian millet is concerned, that seed heads did not ripen simultaneously and that there was much shattering and loss of seed from early 'ripening' heads. Also, due to excessive height growth, there was above normal combine waste. Too, these millets matured under drouth conditions and this would have favored the shorter growing season Japanese and brown top millets. As a result of these experimental plantings, 628 lbs. of Baldwin and 335 lbs. of Indian millet seed are being held for Regional Office distribution.

VI. PUBLIC RELATIONS

A. Recreational Uses:

The mild and dry weather that continued through the first 3 months of the period encouraged heavy recreational use. As usual, the majority of this was fishing and boating, although there was some water skiing and other water sports during the first few weeks of September. The completion of 19 miles of good graveled roads under the accelerated works program has already caused a noticeable increase among those who visit the refuge for waterfowl watching and general sight-seeing. During its closing days the Alabama Legislature appropriated \$10,000.00 to the State Conservation Department for improvements to and expansion of the Arrowhead Landing picnic area. However, no work has been done there to date and no plans for proposed work have been received from the Department.

B. Refuge Visitors:

The mild weather of the first 3 months of the period brought an 'above' average number of visiting groups. The mounted displays of local wildlife and other exhibits now stocked in the museum room of the office have attracted many visiting groups, especially junior scout groups and grade school classes. The following groups visited the refuge during the period:

<u>Date</u>	<u>Group</u>	<u>Number</u>
Sept. 23, 1963	Decatur Cub Scouts	9
Sept. 24, 1963	Decatur Cub Scouts	10
Sept. 24, 1963	Decatur Cub Scouts	13

Oct. 5-6, 1963	Decatur Church Group	14
Oct. 6, 1963	Priceville Church Group	15
Oct. 18, 1963	Birmingham Garden Club	25
Oct. 18, 1963	Decatur Cub Scouts	9
Oct. 18, 1963	Decatur Cub Scouts	9
Oct. 25, 1963	Decatur Girl Scouts	30
Oct. 26, 1963	Birmingham Science Class	7
Oct. 26, 1963	Decatur Cub Scouts	11
Oct. 25-26, 1963	Decatur Girl Scouts	28
Oct. 29, 1963	Decatur Cub Scouts	7
Nov. 14, 1963	Huntsville Garden Club	17
Nov. 19, 1963	Decatur School Class	43
Nov. 19, 1963	Decatur Brownie Scouts	24
Nov. 20, 1963	Decatur School Class	36
Nov. 20, 1963	Decatur Kindergarten Group	11
Nov. 21, 1963	Muscle Shoals School Class	34
Nov. 23, 1963	Izzak Walton League of America, Inc.	8
Dec. 2, 1963	Decatur Brownie Scouts	26
Dec. 31, 1963	Decatur Cub Scouts	30

Total..... 416

Mr. Kenneth Seigworth, TVA, Forestry Division	Sept. 19, 1963
Mr. Jack Chance, TVA, Game & Fish Division	Sept. 19, 1963
Mr. Len Foote, Wildlife Institute Representative	Oct. 2, 1963
Mr. Ted Ball, Regional Office, Atlanta, Ga.	Dec. 16, 17, 1963
Mr. L. S. Givens, Regional Office, Atlanta, Ga.	Dec. 16, 17, 1963

C. Refuge Participation.

The manager and assistant manager attended the September meeting of the Morgan County Sportsmen's and Conservation Association, and the manager gave a short talk on pending public hunts.

The manager attended the Sept. meeting of the South Limestone Sportsmen's Club and gave a pre-hunting season talk on gun safety.

The refuge forester attended the Regional Safety School held at the Marion Fish Hatchery.

The manager and assistant manager attended the October meeting of the North Alabama Coon Hunter's Association.

The manager attended an October meeting of the Decatur Civitan Club and gave a pre-waterfowl hunting season talk.

From mid-October until mid-November, the assistant manager visited Swan Lake Refuge and helped with the goose transplant program.

During November 15 - 17, Wheeler Refuge was host to the fall meeting of the Alabama Ornithological Society. Two mid-day meetings were held at refuge headquarters and remaining daylight hours were spent on field trips to various parts of the refuge.

In early December, the manager, assistant manager and Emmett Waldrep attended a buffalo and elk Bar-B-Que dinner held near Decatur by the Birmingham chapter of the Izzak Walton League.

In mid-December, the refuge forester gave a talk to a Decatur Boy Scout group on how to avoid getting lost in woods and steps to take in event of being lost.

The assistant manager supervised a marshmallow roast held on Flint Creek Island by a church youth group. The forester and Ed Lamar supervised a camp-out on Camp Island by a similar group and, several weeks later, supervised an all-day hike on the refuge by a youth group.

Bureau films have been obtained for showings by local groups.

The manager was nominated for the Governor's Award by a group of local citizens, but did not get it.

D. Refuge Publicity:

Eighteen separate news items, most of them dealing with group visits, were written by refuge employees during the period. All appeared in at least one local newspaper, some in as many as five. In addition to the above, a feature news story concerning the Alabama Ornithological Society meeting held at the refuge appeared in the Decatur Daily and one covering refuge duck trapping and banding appeared in the Huntsville Times. There were numerous favorable mentions of the refuge in both newspapers. The out-door column was continued throughout the period and appeared in the Sunday editions of both papers.

Mentions of the two crow roost shoots were carried on news-casts by several local radio and television stations. The refuge continued to furnish material for an out-door television program that appeared weekly during the period.

The article, "A Cinnamon Teal Record for Alabama" appeared in the issue of the Auk published this period. Reprints were procured as prescribed by regulations.

Material was furnished for Refuge Wingbeats, the refuge branch newsletter. Bird notes were furnished for publication in Audubon field notes.

E. Hunting:

The squirrel hunt was held through the period October 15 - 21, with Sunday, October 20, excluded. Twelve hundred permits were issued, half for the six afternoons. Weather was unusually dry and hunting conditions poor. Squirrel numbers proved low. The tally of results showed only 2,988 squirrels bagged, the lowest kill since the 1958 hunt. Incidental kills included 100 raccoons, 64 rabbits, 12 opossums, 14 gray foxes, 5 red foxes and 87 crows.

Crow roost shoots were held in early November and early December. A total of 342 day-by-day permits were issued and an estimated 3,000 crows were killed. Birds were badly harassed and driven from one side of the river to the other, but roosts were not broken up. Carbide exploders, transferred to Wheeler from Lacassine Refuge, were tried, but with little success.

F. Violations:

There was some light patrol prior to the October squirrel hunt, heavy patrol during the hunt and continued heavy patrol at the beginning of the waterfowl hunting season in early November. There were continued reports of moonlight goose shooting and illegal night hunting for raccoons. Refuge personnel watched moon phases and have made a number of night patrols on nights when the stage of the moon was judged favorable for shooting, but these patrols failed to disclose either goose shooting or raccoon hunting. The majority of the refuge violations have come from teenagers. Depending upon the severity of the violation, penalties have ranged from light fines to talks with and warnings to youngsters and parents. Livestock trespass has been limited to a few cases of stock breaking out of pens and pastures, and there have been no impoundments. Cooperation received from U. S. Game Management Agent H. D. Pierson and from Alabama conservation officers has been excellent. The following cases were made during the period:

<u>Name</u>	<u>Charge</u>	<u>Fine</u>
Tommy Hutchinson	Possession of firearms on refuge	\$5.00
Johny Austin	" " " " "	\$5.00
Larry Morris	Hunting on refuge without license or waterfowl stamp	Pending
Brice R. Alsup, Jr.	Possession of firearms on refuge	Pending
James A. Winston	" " " " "	\$47.50
W. R. Jenkins	" " " " "	\$47.50
Jerry Smith	" " " " "	\$49.50
Fred V. Edwards	" " " " "	\$49.50
Ralph L. Smith	" " " " "	\$49.50
Jerry Thompson	" " " " "	\$32.50
Bonnie Guy	" " " " "	Pending
Don Walker	" " " " "	Pending
Harry W. Landers	Hunting on Refuge	\$25.00
Larry M. Davis	" " "	\$25.00
Joe Evans	" " "	\$37.25
Billy F. King	" " "	\$37.25
Gary Henderson	" " "	\$50.00
Harry W. Landers	" " "	\$15.00
Jimmy Harvey	" " "	\$15.00
Wayne McCaine	Taking Waterfowl (duck) after official hours	\$25.00
Larry M. Davis	Hunting on Refuge	\$15.00
Dwight Hill	Hunting on Refuge	\$37.25

G. Safety:

1. The regular monthly safety meetings have been held. Richard Bays, just back from the Marion Safety School, gave a report on his training there to the September meeting. The October meeting featured a fire safety talk and safety inspection by Decatur's Fire Chief. The November meeting was general in nature, and the December meeting featured the film, "The Anatomy of an Accident". In addition to the above, weekly on the spot safety meetings were held with Accelerated Public Works Program employees.
2. No lost time accidents involving permanent personnel occurred this period.
3. Several safety hazards were eliminated during the period. Two ring buoys were bought, strong nylon ropes attached and the buoys hung on the walls of the refuge boat house. An abandoned well was discovered and filled. Following the advice of the Decatur Fire Chief, the old salamander heater that had been in use for years in the refuge shop was discarded and a modern and presumably safe wall-type liquid gas heater installed. Also, an electrical connection was changed in residence 1 and a fire extinguisher installed near its basement furnace. Grease couplings on a refuge offset disc were changed to prevent accidents while greasing. Seat belts were bought and are now installed in 12 of the refuge vehicles, all those kept in regular use. First aid kits and reflector flags were also purchased and placed in all vehicles.
4. There have been 1,891 accident-free calendar days at Wheeler since the last lost-time accident involving permanent personnel. With nine employees, this means that there have been 9,787 accident-free permanent personnel work days since the last lost time accident in October 1958.
5. Future plans, since the refuge has utilized most of the guest speakers available, include procurement and use of safety films at monthly meetings, the elimination of hazards as they occur, the acquisition of additional worthwhile safety equipment and the stressing of winter driving safety during the early part of the next period.
6. Safety equipment bought during the period include the liquid gas shop heater, safety belts, reflector flags and first aid kits for vehicles.

VII. OTHER ITEMS OF INTEREST

The 1963-64 waterfowl hunting regulations were well received by local hunters.

On October 3, a local hunter shot a mourning dove that had no feet. The bird was brought to the refuge office and examined by employees. There were round balls of callous at the ends of legs on which it

had evidently been walking. Feather examination showed it to be a bird of the year. This seemed to rule out the possibilities that feet had been frozen or shot away.

The final survey of the route of Interstate Highway 65 was in progress at the close of the period. Crossing, as it does, the eastern end of strategic White Springs unit and the western end of Corth Slough, this highway poses a real threat to Wheeler's waterfowl carrying capacity.

On November 7, a foggy morning, an auto was speeding along Hwy. 20, west of Decatur, when a Canada goose struck the windshield, passed between the two passengers on the front seat and was found dead on the rear seat. Except for a few nicks from flying glass, neither passenger was injured.

Construction is said to be ready to start in early 1964 on a huge new airport that will lie along the Limestone-Madison county line just south of Highway 20. Present Huntsville and Decatur airports will not accommodate jet traffic, and the new airport will replace both. This new airport will lie only a short distance east of the Beaver Dam Creek arm of the refuge and less than two miles due north of Buckeye and Blackwell sloughs, heavily used by waterfowl. The possible interference with jet traffic by waterfowl and the possible disturbance to waterfowl from low-flying incoming and outgoing jets can only be guessed, but this is a potential source of real trouble.

Th. Z. Atkeson

Thomas Z. Atkeson
Refuge Manager

January 10, 1964
Date Submitted

Approved:

151 R. R. Rudolph
Rudolph Regional Refuge Supervisor
JAN 17 1964

W A T E R F O W L

REFUGE Wheeler National Wildlife Refuge

MONTHS OF September TO December, 1963

(1) Species	(2) Weeks of reporting period									
	1	2	3	4	5	6	7	8	9	10
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada	25	25	300	4,000	4,500	21,025	22,025	23,050	25,575	41,600
Cackling										
Brant										
White-fronted										
Snow	0	0	0	0	4	8	14	10	17	25
Blue	0	0	0	0	2	100	120	50	200	300
Other										
Ducks:										
Mallard	500	500	500	500	525	525	525	525	4,235	22,005
Black	85	100	100	150	150	150	150	150	300	500
Gadwall	0	0	0	0	0	20	20	20	25	50
Baldpate	0	0	0	0	0	50	75	75	200	500
Pintail	0	0	0	75	100	100	125	150	1,000	2,000
Green-winged teal									500	1,000
Blue-winged teal	75	50	25	25	50	50	50	25	20	20
Cinnamon teal										
Shoveler	0	0	0	0	0	0	0	0	200	500
Wood	500	500	500	500	500	500	500	500	500	450
Redhead	0	0	0	0	0	0	0	0	0	25
Ring-necked	0	0	0	0	0	0	0	0	20	300
Canvasback										
Scaup Lesser	0	0	0	0	0	0	0	0	0	50
Goldeneye										
Bufflehead	0	0	0	0	0	0	0	0	0	50
Ruddy										
Other H. Merganser	0	0	0	0	0	0	0	0	0	50
Coot:	0	0	0	20	20	20	20	20	500	600

Int. Dup. Sec.,

Wash. D. C. 20540

3 -1750a

Cont. NR-1

(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE Wheeler National Wildlife RefugeMONTHS OF September TO December, 19 63

(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	41,600	42,700	42,625	44,525	48,150	52,175	53,700	53,700	3,434,300		
Cackling											
Brant											
White-fronted											
Snow	50	50	70	70	70	70	70	70	3,906		
Blue	500	1500	1500	500	500	500	500	500	45,404		
Other											
Ducks:											
Mallard	23,355	21,775	26,240	27,205	33,695	40,195	41,415	41,415	1,833,785		
Black	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,000	147,345		
Gadwall	100	500	600	800	1,000	1,000	1,000	1,000	38,945		
Baldpate	1,000	1,500	2,000	2,000	2,500	2,500	2,500	2,500	111,800		
Pintail	2,500	3,000	3,500	4,000	4,000	4,000	4,000	4,000	211,850		
Green-winged teal	1,000	1,000	1,000	1,200	1,200	1,200	1,200	1,200	68,700		
Blue-winged teal	20	20	-	-	-	-	-	-	3,010		
Cinnamon teal											
Shoveler	500	500	600	600	600	600	700	700	35,700		
Wood	400	400	450	500	500	500	600	600	59,900		
Redhead	25	25	25	25	50	50	60	60	2,175		
Ring-necked	400	400	500	500	600	600	600	600	29,240		
Canvasback	0	20	25	25	25	25	30	30	1,140		
Scaup Lesser	50	75	100	100	225	225	225	225	8,025		
Goldeneye	0	0	20	20	20	20	20	20	760		
Bufflehead	50	75	150	200	225	225	250	250	9,325		
Ruddy	0	20	25	30	40	40	50	50	1,585		
Other Merganser	100	150	200	225	250	250	275	275	11,325		
Common Merganser	0	20	20	25	25	25	25	25	1,085		
R. B. Merganser	0	20	20	25	25	25	25	25	1,055		
Coot: Old-Squaw	0	0	20	20	20	20	25	25	810		
	600	400	400	350 (over)	350	350	300	300	28,550		

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans	0	0	0
Geese	3,483,610	54,270	0
Ducks	2,577,560	57,000	0
Coots	28,550	600	0

SUMMARY

Principal feeding areas Flint Creek embayment, White Springs
~~Deatered Unit, Carth Slough, Rock-~~
~~house Slough, Buckeye Slough, Limestone Bay, Cain's Landing~~
~~Beaver Dam Peninsula, Upper & Lower Limestone Peninsula~~

Principal nesting areas _____

Reported by J. H. Z. [Signature]

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.....Wheeler

Months of September to December 1963

(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	Estimated Number
I. Water and Marsh Birds:										
Common loon	1	Nov. 12	5	Dec. 31	Still Present					15
Pied-billed grebe	Throughout Period		50	Oct. 1	-	-				125
Horned Grebe	1	Nov. 15	5	Dec. 31	Still Present					20
Great blue heron	Permanent resident		75	Dec. 1	-	-				125
Little blue heron	-	-	25	Sept. 1	2	Oct. 15				50
Common egret	-	-	10	Sept. 1	1	Oct. 1				20
Cattle egret	-	-	25	Sept. 1	1	Oct. 17				25
Green heron	-	-	20	Sept. 1	1	Oct. 20				40
Florida gallinule	1	Oct. 26	1	Oct. 26	1	Oct. 26				1
White Pelican	1	Oct. 11	1	Oct. 12	1	Oct. 11				1
King rail	-	-	250	Sept. 1	1	Nov. 20				300
Sora Rail	-	-	175	Sept. 15	1	Oct. 2				300
Virginia Rail	-	-	75	Sept. 1	1	Oct. 8				200
II. Shorebirds, Gulls and Terns:										
Terns:										
Ring-Bill Gulls	2	Oct. 18	800	Dec. 31	Still Present					1,200
Herring Gulls	1	Oct. 28	500	Dec. 31	Still Present					1,000
Bonaparte's Gulls	3	Nov. 3	10	Dec. 31	Still Present					15
Caspian Tern	7	Sept. 15	10	Sept. 19	1	Sept. 22				20
Common Tern	5	Nov. 16	10	Nov. 20	3	Nov. 25				20
Wilson's Snipe	1	Sept. 12	200	Oct. 1	Still Present					500
Woodcock	1	Nov. 27	1	Nov. 27	1	Nov. 27				1
Dowitcher	1	Oct. 17	5	Nov. 9	1	Nov. 16				10
Greater Yellowlegs	-	-	100	Sept. 15	30	Nov. 16				250
Lesser Yellowlegs	-	-	150	Sept. 10	7	Dec. 22				450
Dunlin	1	Oct. 15	10	Nov. 1	2	Nov. 16				15
Least Sandpiper	-	-	100	Oct. 1	5	Dec. 22				200
Pectoral Sandpiper	-	-	50	Oct. 1	4	Dec. 10				100
Semipalmated Sandpiper	-	-	200	Sept. 25	5	Nov. 16				450
Solitary Sandpiper	-	-	10	Sept. 5	1	Oct. 13				25

(1)	(2)	(3)	(4)	(5)	(6)
III. <u>Doves and Pigeons:</u>					
Mourning dove	Permanent Resident	1,500	Oct. 1	-	-
White-winged dove					2,500
IV. <u>Predaceous Birds:</u>					
Golden eagle					
Duck hawk	Throughout Period	4	Nov. 15	-	-
Horned owl	Permanent Resident	8	Dec. 1	-	-
Magpie					6
Raven					15
Crow	Permanent Resident	275,000	Dec. 31	-	-
Bald Eagle	0	0	0	0	0
Marsh Hawk	1	Sept. 12	30	Dec. 31	Still Present
Cooper's Hawk	Permanent Resident	50	Dec. 31	-	-
Barred Owl	Permanent Resident	30	Dec. 15	-	-
Sharp-Shinned Hawk	1	Sept. 15	40	Dec. 31	Still Present
Red-Shouldered Hawk	Permanent Resident	80	Sept. 15	-	-
Red-Tailed Hawk	Throughout Period	40	Dec. 31	-	-
Barn Owl	Permanent Resident	30	Oct. 1	-	-
				Reported by.....	50

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.

3-1752

Form NR-2

(April 1946)

UPLAND GAME BIRDS

Refuge WheelerMonths of September to December, 19 63

(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.
Bobwhite quail	Woods and brush, 10,500 acres.	50	0	0	55% Males 45% Females	0	0	0	210	Sixty more Iranian pheasants released during the period, but this partly canceled by predation losses and movements off refuge
	Cultivation and hay, 4,903 acres.	2.5							1,961	
	Pasture, 1,816 acres.	10							182	
	Weed and light brush land, 1,781 acres.	2.5						TTL.	<u>712</u> 3,065	
Iranian pheasants	Farmaland and wood edges, 1,200 acres.	5.5	0	0	50% Males 50% Females	0	0	0	218	
Wild turkey	Forest, hardwood, pines and open land, 7,000 acres.	388	-	-	40% Males 60% Females	0	0	0	18	

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.

3-1753
Form NR-3
(June 1945)

BIG GAME

Refuge Wheeler

Calendar Year 1963

(1) Species	(2) Density	(3) Young Produced	(4) Removals				(5) Losses			(6) Introductions		(7) Estimated Total Refuge Population		(8) Sex Rati.
Common Name	Cover types, total Acreage of Habitat	Number	Hunting	For Re- stocking	Sold	For Research	Predation	Disease	Winter Loss	Number	Source	At period of Greatest use	As of Dec. 31	
White tailed deer	Mixed forest field and pasture, 8,000 acres.	None noted	0	0	0	0	None	known		None		25	25	50% Males 50% Females

Remarks: Deer limited to Arsenal parts of refuge with occasional animals wandering over refuge as a whole.
Decrease in deer sign noted during year.

Reported by Th. Z. Atkeson
Thomas Z. Atkeson, Refuge Manager

INSTRUCTIONS

Form NR-3 - BIG GAME

- (1) SPECIES: Use correct common name; i.e., Mule deer, black-tailed deer, white-tailed deer. It is unnecessary to indicate sub-species such as northern or Louisiana white-tailed deer.
- (2) DENSITY: 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 total number of young produced on refuge.
- (4) REMOVALS: Indicate total number in each category removed during the year.
- (5) LOSSES: On the basis of known records or reliable estimates indicate total losses in each category during the year.
- (6) INTRODUCTIONS: Indicate the number and refuge or agency from which stock was secured.
- (7) TOTAL REFUGE POPULATION: Give the estimated population of each species on the refuge at period of its greatest abundance and also as of Dec. 31.
- (8) SEX RATIO: Indicate the percentage of males and females of each species as determined from field observations or through removals.

Refuge Wheeler

Year 1963

Botulism

Lead Poisoning or other Disease

Period of outbreak _____

Period of heaviest losses _____

Losses:

	Actual Count	Estimated
(a) Waterfowl	_____	_____
(b) Shorebirds	_____	_____
(c) Other	_____	_____

Number Hospitalized	No. Recovered	% Recovered
(a) Waterfowl	_____	_____
(b) Shorebirds	_____	_____
(c) Other	_____	_____

Areas affected (location and approximate acreage) _____

Water conditions (average depth of water in sickness areas, reflooding of exposed flats, etc.) _____

Condition of vegetation and invertebrate life _____

Remarks _____

Kind of disease _____

Species affected _____

Number Affected Species	Actual Count	Estimated
_____	_____	_____
_____	_____	_____
_____	_____	_____

Number Recovered _____

Number lost _____

Source of infection _____

Water conditions _____

Food conditions _____

Remarks _____

No Trichomoniasis among doves or lead poisoning, botulism or any other disease noted among refuge wildlife during 1963.

PUBLIC RELATIONS

(See Instructions on Reverse Side)

Refuge WheelerCalendar Year 1963

1. Visits

a. Hunting 4,135 b. Fishing 185,000 c. Miscellaneous 11,221 d. TOTAL VISITS 200,356

1a. Hunting (on refuge lands)

TYPE	HUNTERS	ACRES	MANAGED BY
Waterfowl	0	0	0
Upland Game	3,148	1,900	Permit
Big Game	0	0	0
Other - crow	987	200	Permit

Number of permanent blinds 0Man-days of bow hunting included above 0Estimated man-days of hunting on lands adjacent to
refuge 12,000

1b. Fishing (area open to fishing on refuge lands)

TYPE OF AREA	ACRES	MILES
Ponds or Lakes	22,000	
Streams and Shores		15

1c. Miscellaneous Visits

Recreation 3,940 Official 31
 Economic Use 7,150 Industrial 800

2. Refuge Participation (groups)

ON REFUGE

OFF REFUGE

TYPE OF ORGANIZATION	NO. OF GROUPS	NUMBER IN GROUPS	NO. OF GROUPS	NUMBER IN GROUPS
Sportsmen Clubs	2	23	5	150
Bird and Garden Clubs	4	100	2	70
Schools	8	194	-	-
Service Clubs	-	-	3	160
Youth Groups	20	343	-	-
Professional-Scientific	2	12	-	-
Religious Groups	4	101	-	-
State or Federal Govt.	1	10	1	500
Other	-	-	-	-

3. Other Activities

TYPE	NUMBER	TYPE	NUMBER
Press Releases	86	Radio Presentations	0
Newspapers (P.R.'s sent to)	6	Exhibits	0
TV Presentations	0	Est. Exhibit Viewers	0

INSTRUCTIONS

Item 1: Total of a, b, and c, equal d.

"Visit" - definition. Any person who is on refuge lands or waters during a day or part thereof for the purpose of: hunting, fishing, bird-watching, recreation, business or economic use, official visit, or similar interest. INCLUDE - those who stop within the refuge while traveling on a public highway because of an interest in the area. EXCLUDE - persons engaged in oil or other industry not directly related to the refuge, persons using refuge as most direct route or principal avenue of traffic, and those boating on navigable rivers or the Intercoastal Canal, unless they stop to observe wildlife on the refuge.

Computing visits. Where actual counts are impractical, "sampling" is used with midweek and weekend samples varied by season or weather. A conversion factor of 3.5 (of passengers per car) is used when accurate figures are not available. Each refuge will develop a conversion factor for boats based on range of usage. Count a camper once for each 24-hour period or fraction thereof.

Item 1a: Acres - of refuge open for each type of hunting.

Managed hunts require check in and out of hunters, issuance of permits, or assignment of blinds.

Other - INCLUDE crow, fox, and similar hunting.

Lands adjacent to refuge. Normally considered within 1 mile or less of boundary, unless established sampling procedures cover a wider area. For big game hunting, the distance may be greater.

Item 1b: Acres of streams open to fishing, if practical; otherwise just miles open. Information on "shores" is primarily for coastal fishing.

Item 1c: Recreation. INCLUDE photography, observing wildlife, picnicking, swimming, boating, camping, visitor center use, tours, etc. TOTAL Recreation, Official, and Economic Use visits under Item 1.

Industrial. INCLUDE persons engaged in industry, i.e., oil industry or factories. EXCLUDE these from Item 1.

Item 2: INCLUDE the "On Refuge" groups in Items 1c and 1. In "Off Refuge" column include only those group meetings in which refuge employees actually participate. EXCLUDE these from Items 1c and 1.

Item 3: Exhibits - INCLUDE displays, fairs, parades, and exhibits OFF the refuge; EXCLUDE those ON.

Refuge WheelerCalendar Year 1963FacilitiesPicnic areas 1 tables 4 fireplaces 2 toilets 0
areas:drinking water 0 shelters 0Swimming: **no restrictions**
designated areas 1 bathhouses 0Boating: launching sites 0 rental facilities 1
service facilities 0are motors allowed yes maximum horsepower no restrictionCamping: **only under special permit**
permitted 1 or not permitted tent camps 0 total capacity 0group camps 0 total capacity 0hunter camps 0 total capacity 0trailer camps 0lodges 0 capacity 0cabins 0 motels 0 total units 0Tours: Season Throughout year frequency as requested by groupsself-guided nature trails 1 is trail leaflet available? noself-guided auto tour route 0 is tour leaflet available? noAccess estimate number in public use 27
points:

General - Brief statement of two to five lines on recreational opportunities available on refuge (suitable for inclusion in refuge leaflets or briefing reports).

Bird study, especially waterfowl, November through February. Public squirrel hunt in October. Public rabbit hunt in February. Fishing year around and unrestricted.

(Over)

INSTRUCTIONS

Supply numbers wherever appropriate. These may be estimated if necessary.

Where operation and maintenance is supervised by this Bureau, but the responsibility of a concessioner, group, or agency, indicate by a single *. Where supervision of such activities is by another Federal Bureau indicate by two **.

3-1757
Form NR-7
(April 1946)

PLANTINGS
(Marsh - Aquatic - Upland)

Refuge Wheeler

Year 194⁶³

Species	Location of Area Planted	Rate of Seeding or Planting	Amount Planted (Acres or Yards of Shoreline)	Amount & Nature of Propagules	Date of Planting	Survival	Cause of Loss	Remarks
Catalpa	Field near Rockhouse Road.	500 per acre	2 acres	1 year seedlings	Jan.	70%	Drouth and Freezing	Experimental
Longleaf pine	Field near Skinner Spgs.	1,000 per acre	1 acre	1 year seedlings	Jan.	0	Heavy freezes	Experimental
Loblolly pine	Scattered fields	1,000 per acre	142 acres	1 year seedlings	Jan. Feb. & Dec.	75%	Heavy freezes and drouth	Reforestation
Red cedar	Bluff City	1,000 per acre	1 acre	1 year seedlings	Dec.	0	-	Reforestation
Yellow popular	Madden Branch	600 per acre	3 acres	1 year seedlings	Dec.	0	-	Reforestation
REMARKS: All herbaceous plantings previously documented on accompanying NR-8 forms.								

TOTAL ACREAGE PLANTED:

Marsh and aquatic.....	0
Hedgerows, cover patches.....	0
Food strips, food patches.....	615
Forest plantings.....	149

3-1758
Form NR-8
(Rev. Jan. 1956)

Fish and Wildlife Service Branch of Wildlife Refuges
CULTIVATED CROPS - HAYING - GRAZING

Refuge Wheeler National Wildlife Refuge County Merger State Alabama

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure Cover and Water- fowl Browing Crops Type and Kind	Total Acreage
	Acres	Bu./Tons	Acres	Bu./Tons	Acres	Bu./Tons			
Corn	182	18,865	59	810	299	10,715	850	Oats	200
Soybeans	226	2,650	2	20	50	525	278	Wheat	160
Grain Sorghum	11	55	10	50	0	0	21	Fescue-Clover Mix	550
Vetch	4	30	12	60	0	0	18	Ryegrass	85
Luckwheat	0	0	1	2	11	125	12		
Millet	0	0	10	100	0	0	10		
*Pasture	1,036	0	0	0	0	0	1,036		
Hay	311	266 T.	0	0	0	0	311		
TOTALS	2,072	21,500 266 T.	115	1,152	369	11,240	2,536		995
								Fallow Ag. Land 75 Acres	

No. of Permittees: Agricultural Operations 33 Haying Operations 0 Grazing Operations 2

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING	Number Animals	ADP'S	Cash Revenue	ACREAGE
All Hay Included In Cooperative Agreements				1. Cattle	5	32	\$32.00	18
				2. Other	58 additional acres pasture use donated U.S. Sanatorium All other pasture incorporated in cooperative acreage			
				1. Total Refuge Acreage Under Cultivation				2,839
Hay - Wild	None			2. Acreage Cultivated as Service Operation Row Crops 0 Green Crops 302				

1. The first part of the document is a title page. It contains the title of the document, the author's name, and the date of the document. The title is "The First Part of the Document". The author's name is "John Doe". The date is "1/1/2020".

Crops	Private		Government's Share of Harvest		Harvested		Total	Crops
	Area	Production	Area	Production	Area	Production		
Wheat	1,000	100,000	1,000	100,000	1,000	100,000	3,000	Wheat
Rice	500	50,000	500	50,000	500	50,000	1,500	Rice
Maize	200	20,000	200	20,000	200	20,000	600	Maize
Soybeans	100	10,000	100	10,000	100	10,000	300	Soybeans
Other	100	10,000	100	10,000	100	10,000	300	Other
Total	1,900	190,000	1,900	190,000	1,900	190,000	5,800	Total

10-10-68

[illegible]

3-1755

Form NR-8

(Rev. Jan. 1956)

Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge

County

State

~~Wheeler National Wildlife Refuge~~

Madison

Alabama

Permittee's Share Harvested			Government's Share or Return				Total Acreage Planted	Green Manure Cover and Water-fowl Browing Crops Type and Kind	Total Acreage	
Cultivated Crops Grown	Harvested		Harvested		Unharvested					
	Acres	Bu./Tons	Acres	Bu./Tons	Acres	Bu./Tons				
Corn	132	3,150	0	0	19	760	132	Fescue Ryegrass Oats	38 22 20	
Soybeans	28	295	0	0	5	45	30			
Oats	12	150	0	0	0	0	12			
Fescue	0	0	18	180	0	0	18			
Field Peas	0	0	2	10	0	0	2			
Millet	0	0	33	915	5	40	38			
Buckwheat	0	0	0	0	25	280	25			
Pasture	211	0	0	0	0	0	211			
Hay	8	5 Ton	0	0	0	0	8			
Totals	369	3,795 Bu. 5 Ton	53	1,025	54	1,125	476		80	
									Fallow Ag. Land	
									4 Acres	

No. of Permittees: Agricultural Operations 8 Haying Operations 0 Grazing Operations 0

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING	Number Animals	AIM'S	Cash Revenue	ACREAGE
None				1. Cattle	0	0	0	0
				2. Other	All pasture incorporated in cooperative agreements.			
All hay included in cooperative agreements				1. Total Refuge Acreage Under Cultivation				476
Hay - Wild	None			2. Acreage Cultivated as Service Operation				0

3-1758
Form NR-8
(Rev. Jan. 1956)

Fish and Wildlife Service Branch of Wildlife Refuges
CULTIVATED CROPS - HAYING - GRAZING

Refuge Wheeler National Wildlife Refuge County Limestone State Alabama

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure Cover and Water- fowl Browing Crops Type and Kind	Total Acreage
	Acres	Bu./Tons	Harvested		Unharvested				
			Acres	Bu./Tons	Acres	Bu./Tons			
Corn	592	23,400	0	0	260	9,405	852	Wheat	60
Soybeans	1,215	16,308	6	110	328	5,040	1,579	Fescue	125
Grain Sorghum	0	0	0	0	25	115	25	Vetch & Grain mix.	20
Wheat	1	120	2	40	0	0	6		
Buckwheat	0	0	0	0	183	2,030	183		
Millet	0	0	0	0	350	3,315	350		
Field Peas	0	0	0	0	23	100	23		
Fescue	0	0	6	35	0	0	6		
*Pasture	493	0	0	0	0	0	493		
Hay	113	74 T.	0	0	0	0	113		
Totals	2,417	39,828 74 T.	14	215	1,169	20,005	3,630		205
								Fallow Ag. Land 10 Acres	

No. of Permittees: Agricultural Operations 34 Haying Operations 0 Grazing Operations 0

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING	Number Animals	AUM'S	Cash Revenue	ACREAGE
All hay included in cooperative agreements				1. Cattle	0	0	0	0
				2. Other	all pasture included in cooperative agreements			
				1. Total Refuge Acreage Under Cultivation				3,670
Hay - Wild				2. Acreage Cultivated as Service Operation				313

For the past several years, the Regional Office has requested the following information shortly after the submission of this report. To anticipate this request, this information is included now:

WHEELER NATIONAL WILDLIFE REFUGE
Lands Under Farming Permits During Calendar Year 1963

Number of Per- mittees	<u>Permittees' Share</u>		<u>Government's Share</u>				<u>Summer Fal. Acres</u>	<u>Forage Green Man.A.</u>	<u>Cash Return</u>
	<u>Acres</u>	<u>Bushels</u>	<u>Acres</u>	<u>Bushels</u>	<u>Acres</u>	<u>Bushels</u>			
Cooperative- (62)	4,880	65,223 345 tons of hay	182	2,409	1,259	29,160	89	845	0
Cash Agreements: Pasture - (2)	18	0	0	0	0	0	0	0	\$32.00
Free-Use Pasture Permits - (1)	58	0	0	0	0	0	0	0	0
Hay - (0)	0	0	0	0	0	0	0	0	0

LAND FARMED BY SERVICE PERSONNEL DURING THE CALENDAR
YEAR 1963

	<u>Unharvested Crops</u>	
	<u>Acres</u>	<u>Bushels</u>
Grain Sorghum	10	40
Soybeans	10	70
Millet	150	1500
Buckwheat	120	1500
Field Peas	23	100
Totals	313	3,210

No harvest of crops planted by Bureau personnel: Forage or green manure acres planted by Service personnel 302 acres:
Fallowed land disced for Johnson grass control, 207 acres.

WHEELER NATIONAL WILDLIFE REFUGE
1963 Grand Totals for Entire Refuge Farming Program

<u>Crop</u>	<u>Permittees' Share</u>		<u>Government's Share</u>				<u>Total Acres</u>	<u>Total Production</u>
	<u>Acres</u>	<u>BU. or Tons</u>	<u>Harvested</u>		<u>Unharvested</u>			
			<u>Acres</u>	<u>Bu.</u>	<u>Acres</u>	<u>Bu.</u>		
Corn	1,187	44,415	69	810	578	20,880	1,834	66,105
Soybeans	1,496	19,253	8	160	383	5,610	1,887	25,023
Buckwheat	0	0	2	4	219	2,435	221	2,439
Millet	0	0	43	1,015	355	3,355	398	4,370
Grain Sorghum	11	55	10	50	25	115	46	220
Fescue	0	0	24	135	0	0	24	135
Field Peas	0	0	2	10	23	100	25	110
Oats	12	350	0	0	0	0	12	350
Vetch	6	30	12	60	0	0	18	90
Wheat	4	120	2	40	0	0	6	160
Hay	432	345-Tons	0	0	0	0	432	345 Tons
Pasture	1,816	0	0	0	0	0	1,816	0
	<u>4,964</u>	<u>64,223</u> 345 Tons	<u>172</u>	<u>2,284</u>	<u>1,583</u>	<u>32,495</u>	<u>6,719</u>	<u>99,002</u> 345 Tons

Hay: Hay in cooperative agreements including lespedeza, alfalfa, oats, soybeans, millet, etc..... 432 Acres.
Production..... 345 Tons.

Pasture: Pasture in cooperative agreements, including fescue, white clover, oats, orchard grass, etc.....1,740 Acres.
Cash pasture rentals, two rentals in Morgan County..... 18 Acres.
Revenue received from cash pasture rentals..... \$32.00
One 58 - acre pasture tract donated to Morgan County Tuberculosis Sanatorium.

Green Forage Plantings: Total 1963 green forage plantings of high goose-use value, including oats, Wheat, ryegrass, alfalfa, fescue and good perennial pastures, etc..... 1,197 Acres.
Supplemental green forage, including old pasture sod, vetch cover crops, etc., approximately..... 350 Acres.

Miscellaneous totals: Total land in use including cooperative farming, pasture and hay, cash and donated pasture and land planted to summer crops by refuge personnel, but excluding additional acreage sown in fall exclusively to green forage crops, 6,707 acres. This reflects land actually in use during 1963 and does not necessarily coincide with total acreages shown in cooperative agreements.

Additional acreage, not duplicated by above, sown to or kept in green stuff purely for goose forage, 293 acres. Adding this to the 6,707 acres of row crops, pasture, hay and broadcast crops shown above will give 7,000 refuge acres placed in some form of agricultural use during the calendar year.

Total 1963 fallowed land, 347 acres fallowed acreage is considered that normally kept in agricultural use, but from which no crops were harvested in 1963. However, some of this acreage has been sown to green goose forage and is included in the 293 acres shown above.

Total number of 1963 farming permits includes 62 cooperative agreements, 2 cash pasture rentals and 1 pasture donation. There were no cash hay or row crop rentals in 1963. (This figure does not conform with total number of permittees on the 3-county NR-8 forms, due to duplication).

Plantings made by refuge personnel and machinery (acreage and production included in totals above include 313 acres of broadcast soybeans, grain sorghum, millet, peas & buckwheat & 302 acres grain, grain-vetch mixtures, and fescue and clover mixtures, sown for goose forage and soil improvements.

The value of total 1963 refuge crop production of 99,002 bushels of assorted grains and seeds and 345 tons of hay, based on current local prices, is set at \$157,350.00. This figure does not include the value of 1,860 acres of pasture.

Summary of food made available for waterfowl: 20,880 bu. corn, 5,610 bu. soybeans, 2,435 bu. buckwheat, 3,355 bu. millet, 115 bu. grain sorghum and 100 bu. field peas. A total of 32,495 bu. of grain and seed plus grazing from 1,197 acres green stuff.

REFUGE GRAIN REPORT

Refuge Wheeler National Wildlife Refuge, Decatur, Ala.

Months of September through December, 1954

(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
Corn	1,115	810	1,955	125	0	1,230	1,655	300	0	300	0
Grain Sorghum	410	50	460	215	30	100	375	85	50	35	0
Soybeans	250	160	410	25	15	110	150	260	75	0	185
Millet	550	1,050	1,600	30	470	0	500	1,100	1,100	0	0
Field Peas	25	10	35	0	25	0	25	10	10	0	0
Buckwheat	0	158	158	0	114	0	114	14	14	0	0
Oats	0	150	150	0	150	0	150	0	0	0	0
Wheat	0	232	232	0	232	0	232	0	0	0	0
Vetch	0	87	87	0	77	0	77	10	10	0	0
Ryegrass	0	113	113	0	113	0	113	0	0	0	0
Fescue	0	183	183	0	183	0	183	0	0	0	0
Ladino Clover	0	4	4	0	4	0	4	0	0	0	0
White Dutch Clover	0	5	5	0	5	0	5	0	0	0	0

(8) Indicate shipping or collection points Decatur, Alabama

(9) Grain is stored at Wheeler National Wildlife Refuge Headquarters
Bulk of corn in ear, but all other seed and grain sacked.

(10) Remarks * Surplus is experimental Baldwin & Indian millet as per previous correspondence.

*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.

COLLECTIONS AND RECEIPTS OF PLANTING STOCK
(Seeds, rootstocks, trees, shrubs)

Year 19~~5~~63

Species	Collections				Receipts		Total Amounts on Hand	Amount Surplus
	Amount	Date or Period of Collection	Method	Unit Cost	Amount	Source		
Red cedar	-	-	-	-	1,000 seedlings	State Nur.	1,000 seedlings	0
Tulip popular	-	-	-	-	2,000 "	" "	2,000 "	0
Slash pine	-	-	-	-	5,000 "	" "	5,000 "	0
Loblolly pine	-	-	-	-	192,000 "	" "	160,000 "	0
Indian millet	335 lbs.	Late Oct.	Combine	-	31 lbs.	Reg. Office	335 lbs.	335 lbs
Baldwin millet	628 lbs.	Sept.	Combine	-	54 lbs.	Reg. Office	628 lbs.	628 lbs
Buckwheat	4 bu.	Nov.	Combine	-	154 bu.	Tenn. Refuge	14 bu.	0
Oats	-	-	-	-	150 bu.	Purchase	0	0
Wheat	40 bu.	July	Combine	-	192 bu.	Purchase	0	0
Ryegrass	-	-	-	-	113 bu.	Purchase	0	0
Fescue	135 bu.	July	Combine	-	48 bu.	Tenn Refuge & Purchase	0	0
Ladino clover	-	-	-	-	200 lbs.	Purchase	0	0
White Dutch clover	-	-	-	-	250 lbs.	Purchase	0	0
Vetch	60 bu.	July	Combine	-	27 bu.	Purchase	10 bu.	0
NK-300	-	-	-	-	100 lbs.	Purchased	0	0
REMARKS: Above does not include common agricultural crops grown and collected under cooperative farming program and shown on accompanying NR-8 forms.								

Interior Duplicating Section,
 Washington 25, D.C. 17263

TIMBER REMOVAL

Refuge.....Wheeler

Year 19~~5~~63

Permittee	Permit No.	Unit or Location	Acreage	No. of Units Expressed in B. F., ties, etc.	Rate of Charge	Total Income	Reservations and/or Diameter Limits	Species Cut
Denbo Forest Prod.	22790	Comp. 4	2	22.36 cds.	\$4.00/cd.	\$89.44	marked	pine
Denbo Forest Prod.	22792	Comp. 4	30	60.00 cds.	lump sum	312.63	marked	pine
Hoover, Leacher, Williams	22793	Comp. 7	3	7.00 cds.	\$5.00/cd.	35.00	marked	pine
Denbo Forest Prod.	22794	Comp. 4	5	59.87 cds.	\$5.00/cd.	299.35	marked	pine
Denbo Forest Prod.	22795	Comp. 3	5	58.18 cds.	\$5.00/cd.	290.90	marked	pine
Denbo Forest Prod.	R.O. 24	Comp. 5	37	188.00 cds.	lump sum	943.76	marked	pine
Denbo Forest Prod.	R.O. 27	Comp. 4	26	132.00 cds.	lump sum	669.24	marked	pine
Denbo Forest Prod.	R.O. 31	Comp. 5	100	357.00 cds.	lump sum	1,813.56	marked	pine
Jackson Pierce	22797	Comps. 3&4	19	19,890 bd. ft.	\$20.00/M	397.80	marked	mixed hwd. & pine
Denbo Forest Prod.	22796	Comp. 3	3	42.71 cds.	\$5.00/cd.	213.55	marked	pine
Denbo Forest Prod.	22798	Comp. 3	4	59.99 cds.	\$5.00/cd.	299.95	marked	pine
Denbo Forest Prod.	R.O. 32	Comp. 4	140	700.00 cds.	lump sum	3,591.00	marked	pine
Denbo Forest Prod.	R.O. 37	Comp. 6	85	410.00 cds.	lump sum	2,107.30	marked	pine

Total acreage cut over 459

Total income \$11,063.48

No. of units removed B. F. 19,890
Cords 2,097.11
Ties None

Method of slash disposal None

PHOTOGRAPHIC SECTION

(All Photos by E. R. Lamar)

I. Wildlife



Geese and Greenstuff

A swarm of Canada geese will devastate even green plantings on Flint

II. OUTDOOR RECREATION

A. Group Visits



On the Trail

A group of Brownie scouts hiked the Headquarters nature trail. The trail, with trees and shrubs permanently labeled, attracts many scout and garden club groups.

C. Public Hunt



Permit Issuance
Refuge employees, helped by volunteers, issued 1,200 squirrel
hunt permits in a few short hours.

III. ECONOMIC USES

A. Farming



The New Way

These huge small grain combines-corn harvester combinations are now in common usage on refuge fields. Note refuge rent rows left standing between harvested strips.

C. TIMBER PRODUCTS SALES



Money Grows on Trees

Forester Richard Bays scales a log cleared from a road right-of-way. Over \$11,000.00 worth of timber products, all pulp wood thinned from pine plantations or hardwoods cleared from rights-of-way, was sold during the period.

IV. THE ACCELERATED PUBLIC WORKS PROGRAM

A. Forest Road Construction



Covering a Culvert

Over 19 miles of new roads were built under the program, and the many low, swampy areas along these new roads required

V. TIMBERLAND MANAGEMENT WORK

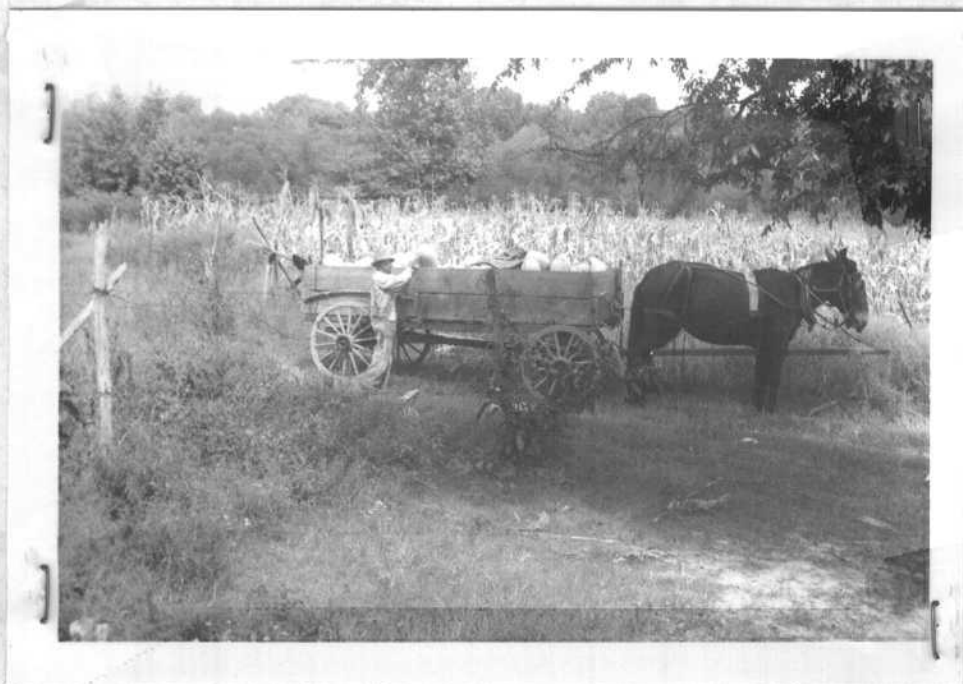
A. Reforestation



Putting in the Pines

Two hundred thousand seedlings are scheduled to be planted during the 1963-64 season and over 100,000 had been planted by the end of the period. Both mechanical planter above and hand crews were used, but soft soil made extensive use of a mechanical planter impractical.

VI. Miscellaneous



Last of the Mule Farmers

When farming began on Wheeler Refuge a quarter century ago, the majority of the cooperators used livestock. Now, only Tom Bibb, World War I veteran shown above, uses a team in his limited farming operation.