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WHEELER NATIONAL WILDLIFE REFUGE
NARRATIVE REPORT

September - December 1962

I. GENERAL

A. Weather Conditions:

<u>Month</u>	<u>Precipitation</u>	<u>Max. Temp.</u>	<u>Min. Temp.</u>
September	4.97	96	41
October	2.38	87	28
November	5.14	69	24
December	3.92	71	02

The dry weather of the summer continued through the period. There have been rains, but the majority of these have been drizzles or light showers and little water has fallen. Reservoir levels have been low, and there have been no floods. Weather was near ideal for crop harvest and the use of heavy machinery. Though dry, it was not so dry as to prevent proper land preparation and the planting and germination of fall crops.

The first killing frost did not occur until the fourth week of October. Weather continued reasonably mild until the week of Dec. 8 - 15, when a severe cold front brought temperatures to near the zero mark and icelocked the entire reservoir except the main river channel and a few spring holes. There were several spittings of snow and sleet, but none that remained on the ground until Dec. 24 when there was a two-inch accumulation. However, most of this had melted away by Christmas afternoon.

Compering the weather of the period with that of the same period last year, we find considerable similarity. However, the early fall was less dry and the late fall much dryer and late fall temperatures were much colder.

B. Habitat Conditions:

1. Water.

a. General Reservoir Levels. The reservoir was almost bank-full at the beginning of the period, and no mud flats showed. The draw-down did not begin until mid-September but was rapid once it began. The drop was fairly steady until early December when, between December 6 and December 9, it was drawn down to between the 548 and 549 contours to facilitate work on Wheeler dam. Through

the remainder of the period it fluctuated between the 550 and the 551 contours. All this is in sharp contrast with the situation last fall when heavy rains shot the reservoir up to flood stage in early December.

In early September, TVA employees removed all stop logs from the Crabtree slough sub-impoundment to permit vegetative control. In late October, refuge employees replaced part of the stop logs to provide enough water for duck trapping, and this sub-impoundment continued at about the 552 level throughout the remainder of the period.

b. Dewatered Units:

1. Rockhouse-Buckeye-Blackwell. This unit was pumped to its absolute low before pumps were shut off in mid-September. Blackwell swamp gates were closed to trap as much water as possible for later use. Heavy spring flow and some rain caused levels to rise in Rockhouse and Buckeye sloughs, threatening the extensive soybean plantings there and making emergency pumping necessary three times during late September and the first three weeks of October.

With the completion of soybean combining the second week of November, flood gates were thrown open and sloughs back-filled with as much river water as possible. After a common level was reached, river gates were shut and the Blackwell ditch gate opened, gravity flowing the trapped water in Blackwell into the lower sloughs. This brought the general level to the 553.2 mark. Since, spring flow and rain fall have gradually brought the level to the 554.3 mark. Actually, water levels in this unit have been near ideal, gradually increasing as the birds fed out flooded seed. This is in contrast with the situation last fall when the unit overflowed suddenly and doubtless wasted much food. TVA is in process of converting the unit's pumps to electrical operation.

2. White Springs. This unit was pumped to an absolute low before pumps were shut off in mid-September. In late October, flood gates were opened in an effort to back-fill from the reservoir. Enough water to bring the level up to the 549 mark was admitted before the dropping reservoir stopped back-filling. Since, rainfall and spring flow have brought the level to the 551.1 mark. Again, in sharp contrast with the situation last year when the unit was over filled, it has certainly not been at an ideal feeding level this period. However, parts that were flooded have been well used by ducks and both ducks and geese have fed well on the dry remainder.

2. Food and Cover.

As predicted, the mast crop was below the average of the past two years. Hickories bore the best nut crop in several years.

Walnuts bore well. Pines, both loblolly and shortleaf, were heavy with new cones, and there was an at least average production of muscadines, wild bunch grapes and persimmons. However, acorns, the backbone of the mast crop, was scarce, with only spotty production among all oak species. There was no beach mast and few hackberries.

The stabilized water of late spring and summer coupled with unusually dry weather resulted in abnormal clarity that in turn resulted in much underwater and emergent vegetation. This proved to be algae, must-grass, Nitella and several pond weeds, along with much Dianthere. This was stranded before large numbers of waterfowl arrived and probably proved of minor value. However, blue-winged teal were noted feeding heavily on this in late September.

In sharp contrast with the situation last year, mudflats produced no solid foods whatever. However, although the drawdown was late, flats quickly sprang to green stuff, largely spikerush, and this furnished much grazing for geese until it was finally killed by the frosts of late October and early November.

As the drawdown progressed, it became apparent that the Asiatic clams, mentioned in the last period's report, were even more numerous than suspected then. TVA and State biologist tell us that these are fed on heavily by blue catfish and shellcrackers and probably furnish much food for drum and certain other fish species. The refuge has no proof of the use of these clams by wildlife, but muskrats are almost certain to eat them and it is possible that their presence may account for the increased numbers of buffleheads, ring-necks, goldeneyes and certain other diving ducks noted within recent years.

There was no significant worm damage to either soybeans or grain sorghum and all crops matured well before frost in both dewatered units and on upland fields. Although stricken, Wheeler corn production proved better than was anticipated. It ranged from almost nothing on a few hilly fields to averages of up to 60 bu. per acre on others. Altogether, the amount of corn made available totalled 14,055 bu., a drop of roughly 30 per cent below last year's record yield. Grain sorghum also showed some yield reduction, though this was less than with corn. The program of planting considerable expanses of heavily-fertilized grain sorghum in dewatered units is in real need of a reappraisal. Swarms of the blackbird group descend on this in early September and by early October have usually abandoned this, leaving nothing behind. This fall, a check through acres of the standing grain did not reveal a solid seed remaining. In short, grain sorghum is feeding blackbirds, not waterfowl.

Reduced corn and grain sorghum production was partially offset by increased production of soybeans and millet. Soybean production proved surprisingly good, especially in dewatered units and in

bottomland fields, though this crop was virtually drouth ruined on a few of the higher uplands. Millet production was spotty, ranging from fields that were so drouth damaged that these produced nothing, the others that produced excellent yields. Overall, both millet and soybean production showed an improvement over that of 1961.

In all, 26,705 bu. of corn, grain sorghum, soybeans and millet were made available for wildlife use, a drop of nearly 20 per cent below 1961 figures. However, 1961 was a record year. To sum up, natural foods amounted to a mere fraction of that available last year and crop production dropped sharply. Though this situation seems far from good, last year's production of both crops and natural foods was far above normal and the present production is actually about average.

Efforts were made to plant a record acreage of green stuff to help offset this drop in solid foods. In all, 1,883 acres of wheat, oats, rye, barley, ryegrass, fescue, crimson clover and white clover were planted by cooperators or by refuge personnel, an increase of about 5 per cent over last year's average. This is supplemented by about 600 additional acres of old pasture, vetch cover crop, etc. that will furnish some additional grazing.

II. WILDLIFE

A. Migratory Birds:

1. Waterfowl.

a. Geese.

1. Snow Geese. The first snow geese, five in a flock of 25 blue geese were noted on October 10, about a week earlier than last year. The birds did not show up in air count until October 12 when a single bird was noted. By the October 19 count, the number had risen to 12 snows and by the Oct. 26 count to 45. On the Nov. 1 count, the number was 60, then 66 on the Nov. 7 count. On the Nov. 11 count, the number of snow geese dropped to 60 then rose to 70 on the Nov. 15 count and remained at this figure throughout the remainder of the period. Comparing this with the same period last year shows a drop of exactly 30 per cent.

2. Blue Geese. Blue goose counts included five on the Oct. 12 flight, 125 on the Oct. 19 flight, 150 on the Oct. 26 flight, 300 on the Nov. 1 flight, 600 on the Nov. 7 and Nov. 11 flights and 800 on the Nov. 15 flight. This figure remained stable until the end of the period. Comparing this number with those present last fall shows an exact drop of 20 per cent. No blue or snow geese are known to have been bagged by local hunters and none has been caught in the refuge banding traps.

3. Canada Geese. Although the usual complement of crippled geese remained through warm weather, the first migrant Canadas were noted on September 17, three days earlier than last fall. The birds began arriving en mass in late September and early October and the first aerial count, Oct. 12, showed 8,500 present. Subsequent counts include Oct. 19, 11,500, Oct. 26, 14,500, Nov. 1, 17,000, Nov. 7, 19,300, Nov. 11, 23,000, Nov. 15, 23,700, Nov. 23, 24,500, Nov. 30, 26,000, Dec. 13, 32,000, and Dec. 26, 38,000.

To avoid the complications required to obtain clearance for flights over the Redstone Arsenal reservation, the post game warden was asked to make counts and report on the numbers of geese, ducks and coots using refuge parts of the Arsenal each week. This has been done and Arsenal counts have ranged from about 100 Canada geese during earlier parts of the period to 2,200 during the latter part. These figures have been added to refuge counts for weekly waterfowl reports. This would give the refuge a top count of 40,000 Canada geese, the same peak experienced during the latter part of this same period last year.

Contrasting sharply with last year, geese appeared hungry upon first arrival and began immediately and heavy use of fields. In early fall, family groups of four to eight were obvious. Hunting has been far better than in 1961, although the kill will form a minor percentage of the total flock. Banding began in late October but, to date, only 121 Canadas have been banded.

b. Ducks.

At the beginning of the period there were only the usual resident woodducks, mallard and black ducks and a few migrant blue-winged teal. New arrivals came slow. The first aerial count showed only 700 ducks present, though this may well have missed all woodducks and some others scattered in narrow channels. Following counts included Oct. 19, 1,000, Oct. 26, 2,500, Nov. 1, 4,000, Nov. 7, 9,500, Nov. 11, 15,000 to 20,000, Nov. 15, 17,000, Nov. 23, 22,500, Nov. 30, 27,500, Dec. 13, 40,000, and Dec. 26, 41,500.

Again, Redstone Arsenal officials reported weekly counts and these ranged from no more than a hundred or so ducks during the early part of the period to about two thousand during the latter part, bringing the total peak count for the refuge to a little over 43,000. Comparing this with the reported 90,000 in December 1961 indicates a drop of approximately 52 per cent.

In decided contrast with last year when there was no field feeding by ducks, the birds made heavy and regular use of refuge fields and some use of private corn fields.

The blue-winged teal flight was fully normal or above. Mallards made up a high proportion of total duck numbers, but the percentage was not as high as normal. Pintails were definitely second only

to mallards and total numbers throughout the period and widgeon numbers were high. Following the trend of the past three years, black ducks continued to increase and made up a good percentage of the total population.

Not a single redhead or old squaw has been seen during the period. Canvasbacks, ruddy ducks and common mergansers have been even scarcer than usual. On the other hand, ring-necks have been common. There have been some scaup with a few greater scaup reported on good authority. Buffleheads seem especially numerous.

Local duck hunting was far better than in 1961, and the season was perhaps the best in several years. However, practically all shooting was in the backwater, and there was only a small amount of corn field shooting during the last few days of the hunting season. Although refuge banding efforts have been aimed mainly at geese, approximately 1,000 ducks were banded during the period.

c. Coots.

Coots were far less common than during the fall period of 1961, no doubt due to the fact that there was much less underwater food. 1962 coot numbers have never exceeded 1,200 birds, or approximately 60 per cent less than were present during this period of 1961.

2. Other Migratory Birds.

a. Doves.

Throughout the early fall and winter, local dove numbers have continued fairly high and about on a par with those of last year. On private land, dove hunting was excellent during the first two weeks of the first portion of Alabama's split season. It is believed that the refuge makes a real contribution to dove management by holding some of these birds during the heavy hunting of early fall, crops produced for waterfowl serve the dual purpose of feeding large numbers of doves. No Trichomoniasis was reported during the period.

b. Shorebirds.

Snipe numbers for the period seem above average, but there was not a single woodcock sighting. The fall flight of other shorebirds seemed normal.

B. Upland Game Birds.

Quail numbers appear to be above average, and this observation is born out by reports from hunters on adjoining land who state that they are finding more and larger covies /than/ in several years.

On Nov. 7, Alabama Conservation Department personnel released 91 Iranian pheasants, 55 cocks and 33 hens, on the White Springs

islands. Stock appeared vigorous and healthy. These birds have been seen regularly since. The State plans a second release in late winter during which sexes will be brought into better balance. On the Swan Creek Public Hunting Area where these birds have been released for three years, there were again reports of successful nesting with at least two broods sighted during the summer.

No wild turkeys were reported during the period from any part of the refuge except those projecting into the Redstone Arsenal Reservation. There, Arsenal officials report turkeys continue to increase.

C. Big Game Animals:

In early October, refuge employees found deer tracks across a grain sorghum field near the junction of Cotaco creek and Madden branch. Later, a local farmer reported sighting both a buck and a doe near Mitchell's spring. During the October squirrel hunt, a hunter reported a deer near Cain's landing. Actually deer sightings and sign seem to be decreasing along the southeastern part of the refuge, and there is a report that most of these animals have moved up Cotaco creek several miles and are ranging near the Grantland bridge. On the northern side of the river, there were no deer reports except on refuge parts of Redstone Arsenal, where Arsenal officials say they are doing well and increasing satisfactorily.

D. Other Mammals:

Gray squirrel numbers were certainly above average and about on a par with the high population of last year. Ample seed stock is in the woods since the October hunt. Fox squirrels, always rare on the refuge, was sighted several times during the period.

General observations indicate a barely normal rabbit population. However, the number of rabbits shot during the October squirrel hunt was substantially higher than in 1961, so rabbits may be more numerous than is readily apparent.

There has been a definite increase in raccoon and opossum numbers. Raccoons are occasionally seen in broad daylight and sign is plentiful. It is believed that populations are again approaching those of the early 1950's.

Muskrats show some sign of increase. An otter sighting is reported during the period, though this may well have been a beaver or muskrat. Ground squirrels have increased noticeably and were common in the headquarters area before hibernation. Foxes continue to increase, though numbers are being reduced by a skin disease.

E. Predaceous Birds:

Again, close watch has been kept on eagles, but they have been only two sightings during the period and these may have been the same individual.

Crows poured into the refuge, beginning in early November, in near record numbers. The same two roost used last winter were again in use. Two public roost shoots were held, one in November for three late afternoons, the other in December for four afternoons. Although these harassed the birds considerably and several thousand were killed, roosts were not broken up.

The blackbird group has increased enormously, with the majority starlings and redwings. These stripped refuge grain sorghum fields and took a heavy toll from corn and millet. Although there are roosts in the locality, none was located on the refuge during the period.

No changes have been noted in the number or behavior of hawks, owls and other predaceous species during the period.

F. Other Birds:

No new bird species were added to the refuge list during the period. David Hulse reported least terns present on September 8, a late record. State Biologist James Keeler sighted a Mississippi kite, always rare here on August 2.

G. Fish:

As weather cooled in fall, crappie and black bass catches, low through spring and summer, increased gratifyingly. Bass generally ranged from half a pound to a pound. Bream catches continued fairly good. With mild, dry weather through most of the period, fishing pressure was fairly heavy.

H. Reptiles:

Nothing noteworthy was/^{noticed} among refuge reptiles this period.

I. Diseases:

No Trichonosis was noted among doves throughout the period. The only wildlife disease noted was a skin infection, probably mange, that seems to affect most of the red foxes of this area.

III. REFUGE DEVELOPMENT AND MAINTENANCE

A. Physical Development:

1. Goose Forage Establishment.

Mild weather and late frost required the removing of much of the

the fescue sod mowed during the preceeding period. The 12 acre field at Whiteside was sown to a heavy grain-legume mixture and 25 acres of high mudflat on the middle Garth slough hogback were sown to small grain. A 15 acre island in the White Springs unit, cleared during the period, was sown to ryegrass. Much other green planting was done under the soil and moisture program and farmers were furnished seed with which to oversow corn fields to make these provide a combination of solid food and forage.

2. Soil and Moisture Work.

The rotation discing for Johnson grass control of 150 acres of Flint Creek island land was continued through early fall. Approximately 175 acres of this land was sown to a heavy grain-vetch cover crop. The Lakeside shelf area, prepared last period, was treated with 37 tons of 0-20-10 fertilizer, further prepared and sown to a heavy fescue and white clover mixture. Dry weather continued and approximately 10 acres of this strip failed to germinate to a proper stand. In late October when it became apparent that a stand was not forthcoming, this 10 acres was scarified lightly, resown heavily and now appears to support a suitable stand.

The dry fall permitted traversing fields with lime trucks much later than usual and as crops were harvested from fields, those previously unlimed were treated one by one until the wetter weather of late November brought this to a halt. Fields treated included the Martin's branch land, the Garth slough peninsula, the Sand field and all the higher part of the westernmost field of the Garth slough farming area, all White Springs island land including farm land on the Eagle Nest island, land in the Forbes spring vicinity, the Break springs land and two fields on the lower Limestone peninsula. In all, some 245 acres were treated with 418.75 tons of lime.

Again, stones were collected from Flint Creek island fields and used to reinforce fills.

3. Road Work.

The Cave Springs road and the Flint Creek island road system were graded during the period. A washed-out culvert of the south boundary truck trail near Gin House branch was repaired. A line of small culverts was laid in the road leading to the waterfowl trapping site, and a line of large culverts was used to replace a ramshackle bridge on the Juney Bug road.

In cooperation with the Limestone County Road Commission, the graveling of the Flint Creek island road system was completed. This included the Pecan Orchard road, the northern fork of the western road and the road leading to the waterfowl trapping site. A "trap yard" was graveled for the net trap. More

parking space for waterfowl watchers has been needed along the road leading to the Crabtree control structure. There, an area was leveled, graveled and should furnish ample parking room.

On the northern side of the river, the Juney Bug road, the road into the upper Limestone peninsula and the main road through the White Springs islands from the easternmost fill west to the cultivated fields on the Eagle Nest island were all graveled heavily. In addition to this graveling of previously ungraveled roads, gravel was added to soft spots on all existing gravel-surface roads.

In addition, the refuge dump truck was used to gravel surface part of the rock fill made last period across a low area of the river bank road between the mouths of Cave springs branch and Flint Creek.

4. Headquarters Development and Maintenance:

For years, the refuge has had an agreement with the City of Decatur whereby city fire fighting equipment would be used in event of a serious fire among refuge buildings. To facilitate use of pump trucks, a ramp has been constructed near the boat house. This period, following the recommendations of the Decatur fire chief, this ramp was well graveled. Gravel was also added to the area around the grain bins and the headquarters road system graded.

The bathroom floor of residence 2 had become badly warped. Tiles were removed along with a section of the sub-flooring, some termite treatment done, the sub-flooring replaced and new tile bought and laid. A screen of the door of this building was replaced. It has become evident that there is a serious termite problem in virtually all headquarters buildings and treatment is scheduled for the next period.

The open headquarters area was kept mowed, shrubbery pruned and general cleanup practiced. New shades were installed in the office building. A cut off valve in the plumbing system of residents one was replaced and, after this house was vacated, it was given a general cleanup and the entire water system thoroughly drained.

5. Ditch Cleanup.

The clearing of accumulated silt from a section of the White Springs dragline channel that began on August 27 through use of deferred maintenance funds and a contract dragline was completed on Sept. 19. Work covered the strategic section of north-south ditch from its junction with the east-west ditch up Yellow @al slough to its junction with the east-west ditches that lie south of the White Springs island, a total of 4,900 linear feet. According to TVA survey, this eliminates a serious bottleneck and

allow far better drainage of the important southeastern part of this unit.

6. Vehicle and Equipment Maintenance and Repairs.

The radio was removed from the Plymouth sedan, installed in the 1956 Chevrolet sedan and the Plymouth set aside for road trips. Seat belts were installed in this vehicle. As for the 1956 Chevrolet sedan, its body was repaired, it was repainted, equipped with better tires, the motor tuned, a new heater fan motor installed and this unit placed on regular patrol duty.

As for the 1958 Chevrolet sedan, the carburetor and automatic choke were reworked, along with some minor repairs and adjustments. Both of the 1958 Ford trucks were equipped with new batteries, points and plugs. Both had brakes relined and front brake cylinders reworked. One had valves ground and a burnt valve replaced. On the 1956 pickup, the radiator was repaired, a shock absorber hanger replaced and a new battery installed. Some repairs to its rear end were required.

A Ford stake truck from the St. Marks Refuge limped into the Wheeler headquarters with a motor in such poor condition that repairs were considered uneconomical. It was declared surplus by St. Marks and left at Wheeler. St. Marks borrowed the Wheeler Ford stake truck for the return trip to that refuge with a load of ear corn. New plugs and points were installed in the Wheeler International stake truck.

An Army-surplus Reo 6 X 6 dump truck was transferred to Wheeler from the Tennessee Refuge, checked over and set aside for future use. Clutch bearings were replaced in the Case tractor. All farm equipment was assembled, checked and stored for the winter. All water cooled vehicles and equipment were checked and winterized. During standby periods, Wheeler vehicles have been thoroughly checked one by one, minor repairs and adjustments made and major repairs listed. Major repairs will be completed next period, when patrol pressure slacks.

7. Miscellaneous Jobs.

In early October, the Manager attended the goose trapping workshop at Swan Lake Refuge, Missouri. Immediately afterwards he attended the joint Bureau-TVA meeting in Atlanta. The Acting Manager attended a similar meeting in Atlanta in mid-November.

A large lot of surplus aluminum material was procured from Redstone Arsenal, parts of this sawed into short lengths transferred to South Florida and Tennessee Refuges.

Large numbers of boundary markers were shipped to Wheeler, stored there and many have been reshipped to other refuges. Bridge lumber was obtained from the Noxubee Refuge.

An island, about 15 acres, in the White Springs unit was cleared of brush and saplings, brush piled, the fill leading to the island increased and the island sown to ryegrass.

The large recognition sign along highway 67 and the one at the junction of highway 20 and 31 were dismantled, repainted and re-erected. Strategic stretches of the boundary were brushed back, repainted, damaged markers changed and reinforced with additional boundary markers. Some time was spent on the Redstone Arsenal Reservation remarking stretches of refuge boundary where water-fowl feeding was likely, but a thorough reposting is needed there and is planned for next period.

Final settlements were negotiated with all cooperators and harvest closely supervised. Well over 2,000 bu. of rental seed and grain were taken in, tagged and stored and part transferred as surplus. Visiting groups were guided about. The squirrel hunt and two crow roost shoots were held and closely supervised, a continuous patrol maintained and innumerable smaller jobs completed.

B. Plantings:

1. Aquatic and Marsh Plants.

No plantings of this type were made this period.

2. Trees and Shrubs.

None were planted this period.

3. Upland Herbaceous Plants.

All upland herbaceous plantings are listed above under soil and moisture work and goose forage establishment.

4. Cultivated Crops.

Unlike many years, the dry fall permitted easy crop harvest and crops were removed from fields on schedule. Weather also permitted the easy planting of winter crops. Reduced corn yields and low prices coupled with good soybean yields on lowlands and good prices may swing farmed acreage more heavily in favor of soybeans in 1963.

Originally, pest plants in dewatered units were mainly cockleburrs and sprouting willows and buttonbushes. As the years have past brush sprouts have virtually vanished and cockleberrrs are no longer a problem. Dewatered land has taken on more the characteristics of upland. Johnson grass is not a problem, for rhizomes do not seem to be able to withstand yearly reflooding, but crabgrass and morning glories are abundant weeds and, within

the last two or three years, coffee weeds, Cassia tora, have become abundant in limited locations. Crabgrass and morning glories are believed to have waterfowl food value, but the coffee weeds are valueless. Summer disking of infested areas and extremely late planting are considered the only practical methods of combating this now.

A cooperator used Clark soybeans, a new variety, on the refuge for the first time this year. These seem as shatterproof and as high producing as the common Lee variety, but have a growing season of no more than 80 or 90 days. However, eventhough beans matured in September, crabgrass and other green stuff prevented combining before frost. A short-growing season soybean variety would have real value in dewatered units. The refuge obtained some of these seed and will test them further in 1963.

C. Collections and Receipts.

1. Seed or Other Propagules.

All seed collected during the period were the result of the cooperative farming program and are reported on the accompanying NR-8 and NR-8a forms.

Receipts include 200 lbs. certified ladino clover seed, 100 lbs. white dutch clover seed, 100 lbs. common crimson clover seed, 50 lbs. certified reseeding crimson clover seed, 300 lbs. common vetch seed, 600 lbs. hairy vetch seed and 700 lbs. Italian ryegrass seed, all purchased for use in the soil and moisture program.

2. Specimens.

There have been no actual erections during the period. However, school and scout groups frequently make short visits to the refuge office and there is little to show them. It was decided to fit the museum room with a display of mounted wildlife. Specimens have been found dead on the refuge or contributed by local hunters. To date these include a coot, bufflehead drake, a hooded merganser drake and a drake golden-eye. All are in the hands of a taxidermist and mounts have not yet been completed.

During the October squirrel hunt, an albino squirrel was shot by a hunter and donated to the science collection of the Decatur High School. Refuge employees helped the Alabama Conservation Department obtain a second albino squirrel, shot on private land, from a local hunter and this was added to the Department's Montgomery collection.

D. Control of Vegetation:

No herbicides were used this period. All vegetative control was confined to rotation disking and pasturing for Johnson grass control and the clearing of willow brush from 15 acres of the White Springs unit.

E. Planned Burning:

No planned burning was done during the period.

F. Fires:

Although weather was dry, fire hazard often high and a careful watch was required, not a single wild fire occurred during the period.

IV. RESOURCE MANAGEMENT

A. Grazing:

Pastures have remained in fair conditions, although dry weather, heavy goose usage and the near zero temperatures of early December have held down growth.

B. Haying:

The reasonably dry weather in force from the beginning of the period until the killing frost of late October enabled farmers to put up a considerable hay tonnage this period.

C. Fur Harvest:

There was no fur harvest this period.

D. Timber Removal:

The sale of willow cordwood was terminated in late October, and the operator carried out all special provisions of this permit. All willow was cut along the uncleared portion of the Whitworth arm of Buckeye slough. In all, a little less than 99 cords were cut and brought the Government a total revenue of \$197.94. This seems entirely desirable and should be resumed in mid-spring.

TVA completed the thinning of pine and locust stands from the land near Edmondson slough, now a part of the refuge through letter permit only and subject to deletion upon call. In all 1,250 locust post and 50 cords of pine pulpwood were sold for a total return of \$450.00. This was collected and retained by TVA.

The pine stand between Watkins bluff and Blackwell swamp, affected by rootrot, showed some signs of recovery with the coming of moisture fall weather. However, the plantation continues in poor condition and is in serious need of thinning.

E. Commercial Fishing:

Commercial catches, particularly those of catfish, were good in

early fall but slacked as weather became colder and water levels lower. There were no significant changes in the number of fishermen operating on the refuge or in the catch.

F. Other Uses:

Mussel shelling was at an absolute stand still throughout the period. Reports from all cook-out permittees operating on the refuge indicate not a single ton of salable shells was taken from the refuge throughout 1962. The disappearance of pig-toe mussels is still a local mystery.

The Limestone County Road Commission began operating in the Mooresville gravel pit in early December and continued until the end of the period.

The donation of the 58 acre pasture to the Morgan County Tuberculosis Sanatorium was renewed. Use of the Triana residence by the Madison County Health Department and of the refuge garbage pit by the City of Mooresville continued.

V. FIELD INVESTIGATION OR APPLIED RESEARCH

Refuge employees have cooperated closely with the local U. S. Game Management Agent in assembling hunter bag check data. They also took part in the spy-blind study.

Refuge personnel are endeavoring to work up a valid kill-crippling ratio for Canada geese in this locality. Considerable material has been accumulated and will continue to be until the close of the goose hunting season. This will be worked up and made available in the next report.

In late June and July, Wheeler Refuge cooperated with Mr. Paul Bryan, of TVA's Fish and Game Division, in experiments aimed at testing high analysis nitrate-phosphate fertilizers produced by TVA and its effect on waterfowl food crops in dewatered situations. Plantings were all made in the White Springs unit. The refuge provided seed and preparation, TVA the fertilizer. Nine one-acre plots were used, three each to grain sorghum, browntop millet and Japanese millet. Results were as follows:

<u>Species.</u>	<u>Unfertilized.</u>	200 lbs. per <u>acre 30-10-0</u>	100 lbs. per <u>acre 21-53-0</u>
Grain sorghum	90 lbs. seed per acre	432 lbs. seed per acre	288 lbs. seed per acre
Browntop millet	366 lbs. seed per acre	648 lbs. seed per acre	648 lbs. seed per acre
Japanese millet	360 lbs. seed per acre	720 lbs. seed per acre	512 lbs. seed per acre

All plots were badly drouth stricken and results are considered atypical.

Refuge employees put out wing envelopes to duck hunters to cooperate with this study.

VI. PUBLIC RELATIONS

A. Recreational Uses:

Good weather and road conditions and the pick-up in fall fishing brought heavier than usual recreational use to the refuge. Most of this was fishing, but there was much bird watching, picnicking, and general sightseeing.

B. Refuge Visitors:

The following groups visited the refuge during the period.

<u>Date</u>	<u>Group</u>	<u>Number</u>
October 1, 1962	Decatur Brownie Scouts	27
October 11, 1962	Decatur Brownie Scouts	26
November 1, 1962	Florence State College Wildlife Conservation Class	37
November 6, 1962	Hartselle Brownie Scouts	23
November 14, 1962	Huntsville's Green Valley Garden Club	11
November 15, 1962	Leaders of Tuscombia, Florence, Sheffield & Muscle Shoals Garden Club	13
November 23, 1962	Decatur Girl Scouts	18
November 26, 1962	Decatur Cub Scouts	12
November 30, 1962	Birmingham Sou. College Ecology Class	6

Official Visitors

Mr. Montague Watson, Civil Eng. TVA	Oct. 18, 1962
Mr. Henry Swich, Location Eng. TVA	Oct. 18, 1962
Mr. Phil Garner, Huntsville Times	Nov. 1, 1962
Mr. Victor W. Kay, Regional Office, Atlanta, Ga.	Nov. 8, 1962
Mr. L. S. Givens, Regional Office, Atlanta, Ga.	Nov. 8, 1962
Mr. Lumb, Central Office, Washington, D.C.	Nov. 8, 1962
Mr. Ted Ball, Regional Office, Atlanta, Ga.	Oct. 20, 1962
Mr. Paul T. Kreager, St. Marks, Refuge Emp.	Dec. 5, 1962
Mr. Leonard E. Foote, Atlanta, Ga.	Dec. 9, 1962

C. Refuge Participation:

On Sept. 19, the Manager, with a series of colored slides, gave an illustrated lecture on the refuge and waterfowl to the Decatur Civitan Club. On Sept. 25, he gave a similar illustrated lecture to the Decatur Lions Club.

On Dec. 16, the Acting Manager attended a meeting of the North Alabama Groto of the American Speliological Society. On Dec. 22, he attended the pre-Christmas turkey shoot sponsored by the Morgan County Sportsmens and Conservation Association. Refuge employees placed waterfowl posters in public locations and passed out waterfowl identification pamphlets and other literature.

D. Refuge Publicity:

Two feature news articles, one dealing with refuge waterfowl counts the other with a pheasant release on the refuge, appeared in Sunday editions of the Decatur Daily. A feature article dealing with one of the refuge crow roost shoots appeared in a Sunday edition of the Huntsville Times. All were highly favorable. In addition, numerous favorable mentions of the refuge have been noted in the Decatur Daily, Huntsville Times and Birmingham Post Herald.

A feature article covering refuge highlights of 1962 was written by refuge employees on request and furnished the Decatur Daily and the Huntsville Times.

Twelve separate news items covering refuge happenings of local interest were written by refuge personnel. All appeared in at least one local newspaper, some in as many as six.

The "Outdoor" column written by refuge employees and published in each Sunday edition of the Decatur Daily was continued throughout the period.

The area bird column, written for Alabama Bird Life, the Alabama Ornithological Societies' publication, by refuge employees, was continued and appeared in the issue published this period.

The article a cinnamon teal record from Alabama, written by refuge employees, was submitted for publication, accepted and scheduled to appear in the July 1963 issue of the Auk.

Bird notes were submitted for publication in Audubon Field Notes.

Refuge employees worked with Regional Supervisor L. S. Givens in the preparation of a chapter for the book Waterfowl Tomorrow.

The stock statement of the Interior Department was reproduced in the current issue of Alabama Birds.

Service films were procured for local showings. A colored slide series was prepared to illustrate talks concerning the refuge. Bulletins, leaflets and Wheeler bird list were given or mailed to various interested parties requesting these.

The refuge continued to supply a local television outdoor program with material and received many favorable mentions as the result. In connection with refuge hunts, favorable mentions were also noted over the Hartselle radio station WHRT and over Decatur stations WAJF, WHOS and WMSL.

E. Hunting:

The usual squirrel hunt was held in mid-October, and a special report covering this has already been submitted. This hunt proved the second most successful of the 19 held todate with 4,082 gray squirrels, 71 rabbits, 22 foxes and 91 crows reported bagged, no accidents and no wildfires and no known waterfowl violations.

A public crow roost shoot was held in mid-November with 305 permits issued and 2,000 crows estimated killed. A second was held in early December with approximately 200 permits issued and an estimated 1,500 crows killed. Shoots were not successful in breaking up the two existing roost, but did prove good public relations, caused no undue waterfowl disturbance but did eliminate a number of crows.

F. Violations:

There were some weekend patrol in early October. The mid-October squirrel hunt was closely supervised and regular patrol was begun in early november and continued through the remainder of the period. This covered all week days, weekends and holidays. There were some reports of moonlight goose shooting but night patrol has failed to substantiate this. Cooperation from the local U. S. Game Management Agent and State Conservation Officers has been excellent, there was some livestock trespass but this was minor and impoundments have not proved necessary. The following cases were made or carried through this period.

<u>Name</u>	<u>Charge</u>	<u>Fine</u>
Herbert T. Geary	Hunting on Refuge	\$35.00
Robert Montgomery	Possession of firearms on refuge	34.25
Don Stanford	Possession of firearms on refuge	34.25
Horace Crowe	Possession of firearms on refuge	34.25
James D. Smith	Possession of firearms on refuge	34.25
Jim Johnson	On refuge hunt without permit	15.25
William Vaughn	On refuge hunt without permit	15.25
Ralph Roan	Possession of firearms on refuge	Pending

Sam Blankenship	Possession of firearms on refuge	Pending
Leonard Brockman	Possession of firearms on refuge	Pending
Troy Crane, Jr.	Possession of firearms on refuge	Pending
Eugene McCafferty	Possession of firearms on refuge	Pending
Joe Whiseant	Possession of firearms on refuge	Pending

In addition the following cases involving Federal violations were made on adjoining land by refuge employees:

<u>Name</u>	<u>Charge</u>	<u>Fine</u>
Herbert T. Geary	Hunting waterfowl without Federal stamp	\$15.00
Cecil G. Gaines	Shooting waterfowl after legal hours	25.00
Frank B. Atkerson	Shooting waterfowl after legal hours	25.00
J. N. Powell	Hunting waterfowl without Federal stamp	15.00
Lewis Fortorige	Shooting waterfowl after legal hours	25.00
Don Smith	Hunting waterfowl without Federal stamp	15.00
Robert Able	Hunting waterfowl without Federal stamp	17.25
Williard Underwood	Shooting waterfowl after legal hours	17.25
Joseph P. Johnson	Shooting waterfowl after legal hours	17.25
W. P. Byram	Hunting with gun capable of holding more than 3 shells	25.00

G. Safety:

1. The regular monthly safety meetings have been held throughout the period. Although the September meeting was general in nature, subsequent meetings have featured local safety experts as guest lecturers and demonstrators. Included have been the Decatur Fire Chief, the Red Cross First-Aid specialist and the Alabama Highway Patrol safety specialist.
2. No lost time accidents involving personnel injuries occurred this period.
3. Special measures includes a safety check of all vehicles and sample inspection by the Highway Patrol and the graveling of the headquarters fire ramp to facilitate use by City fire trucks. There was also a thorough check of all extinguishers and other fire fighting equipment.

4. There have been 1,526 accident-free calendar days at Wheeler since the last lost-time accident. With seven employees, this means that there have been 7,630 accident-free man work days since the last accident in October 1958.

5. Future plans include the continuance of safety meetings, the continued use of guest speakers, demonstrations and other methods of increasing interest in safety and the elimination of hazards.

6. New safety equipment during the period included the purchase and installation of seat belts in the Plymouth sedan.

VII. OTHER ITEMS OF INTEREST

TVA is currently replacing the old gasoline-driven pumps of the Rockhouse landing pump station with electrical-operated ones. An extension of the R.E.A. transmission line along the Rockhouse road has been projected southeastward to the pumphouse. The new pumps will be automatically float operated and will undoubtedly result in a better pump down of this unit. However, there may be resulting problems, especially when emergency pumping or backfilling in October is required.

Some local reactions to the 1962-63 waterfowl hunting regulations may be of interest. Many local hunters stated that they would have preferred a six or ten day season without the two duck limit and other restrictive regulations or would have preferred that the season be closed completely for one or two years. Local duck hunting has been above average and some good hunters report that they have found unusually high numbers of discarded birds and feel that this is the results of the one-mallard-in-the-bag regulation, that few hunters can identify ducks on the wing and continue to shoot and discard until they have a legal limit.

During the October squirrel hunt, Wheeler employees Waldrep and Sandlin found a steel safe, beaten open and rifled, in refuge woodlands. Police were notified. This proved the result of a local robbery some weeks before. All money had, of course, been taken, but the owner did recover some checks and other valuable papers.

Th. Z. Atkeson
Thomas Z. Atkeson
Acting Refuge Manager

January 10, 1963
Date submitted

Approved:

[Signature]
Acting
1962

WATERFOWL

REFUGE Wheeler

MONTHS OF September TO December, 19 62

(1) Species	(2) Weeks of reporting period									
	1	2	3	4	5	6	7	8	9	10
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada	12	12	800	4,000	4,000	8,500	11,450	14,450	16,900	22,400
Cackling Richardson	0	0	0	0	0	0	50	50	100	100
Brant										
White-fronted										
Snow	0	0	0	0	0	1	12	45	60	60
Blue	0	0	0	0	0	15	150	250	300	600
Other										
Ducks:										
Mallard	300	300	200	200	250	200	300	1,355	1,675	9,280
Black	100	100	100	100	150	50	100	200	250	400
Gadwall	0	0	0	0	0	25	25	50	75	100
Baldpate	0	0	0	20	25	25	25	200	350	800
Pintail	0	0	0	0	25	50	100	300	500	3,000
Green-winged teal	0	0	0	0	0	0	0	25	50	200
Blue-winged teal	500	500	600	300	250	175	175	175	150	100
Cinnamon teal										
Shoveler	0	0	0	0	0	0	0	100	150	300
Wood	250	250	300	350	350	150	225	225	250	300
Redhead										
Ring-necked	0	0	0	0	0	0	25	25	50	300
Canvasback	0	0	0	0	0	0	0	20	20	25
Scaup - Lesser	0	0	0	0	0	0	0	0	25	50
Goldeneye - Common	0	0	0	0	0	0	0	0	20	20
Bufflehead										
Ruddy										
Other										
Hooded merganser	0	0	0	20	20	25	25	0	50	100
Common merganser	0	0	0	0	0	0	0	25	0	0
A. B. merganser	0	0	0	0	0	0	0	0	25	25
Coot:	0	0	0	0	0	0	10	200	150	200

3 -1750a

Cont. NR-1

(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE WheelerMONTHS OF September TO December, 19 62

(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	23,500	25,000	27,000	28,000	33,000	35,000	40,000	40,000	2,178.189	0	
Cackling	200	200	200	200	300	300	200	200	15.300	0	
Brant											
White-fronted											
Snow	70	70	70	70	70	70	70	70	4.886	0	
Blue	800	800	800	800	800	800	800	800	55.971	0	
Other											
Ducks:											
Mallard	8,500	14,130	16,080	17,000	25,555	26,560	24,900	24,900	1,102.195	0	
Black	500	1,000	1,200	1,500	1,700	2,000	2,500	2,500	86.950	0	
Gadwall	150	200	250	400	500	500	500	500	20.825	0	
Baldpate	1,000	1,200	2,000	2,500	3,000	3,200	3,500	3,500	135.425	0	
Pintail	5,000	7,000	5,000	6,000	6,000	6,500	7,000	7,000	353.325	0	
Green-winged teal	500	500	500	800	1,000	1,200	1,200	1,200	44.025	0	
Blue-winged teal	100	100	50	50	25	20	20	20	23.090	0	
Cinnamon teal											
Shoveler	300	400	400	400	500	500	600	600	28.050	0	
Wood	300	300	300	300	300	300	300	300	34.150	0	
Redhead											
Ring-necked	400	500	600	800	800	900	1,000	1,000	19.200	0	
Canvasback	25	25	25	30	30	35	40	40	2.045	0	
Scaup - lesser	100	100	200	300	300	400	500	500	15.325	0	
Goldeneye - common	20	20	20	20	20	25	30	30	1.450	0	
Bufflehead	25	100	150	350	400	450	500	500	15.325	0	
Ruddy				20	20	20	20	20	620	0	
Other H. merganser	100	200	200	300	300	300	300	300	14.480	0	
Common merganser	0	0	0	0	0	20	20	20	515	0	
H. B. merganser	25	25	25	50	50	50	50	50	2.425	0	
Scaup - greater	0	0	0	0	0	20	20	20	380	0	
Coot:	200	200	1,000	1,000	1,200	1,200	1,200	1,200	49.562	0	
					(over)						

	(5)	(6)	(7)
	Total Days Use	Peak Number	Total Production
Swans	0	0	0
Geese	3,254,346	41,000	0
Ducks	1,899,750	43,000	0
Coots	49,562	1,200	0

SUMMARY

Principal feeding areas White Spgs. U., Buskeys, Rockhouse, Garth slough vicinity, Beaver Dam pen., Cains landing, Flint Creek island, upper and lower Limestone peninsulas, Yellow gal and Higger slough island.

Principal nesting areas None

Reported by J. J. O'Brien

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

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

3-1751

Form NR-1A

(Nov. 1945)

MIGRATORY BIRDS

(other than waterfowl)

Refuge WheelerMonths of September to December 1962

(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. 16	3	Dec. 31	Still present					5
Pied-billed grebe	Throughout period		60	Oct. 15	-	-				100
Horned Grebe	1	Nov. 28	2	Dec. 31	Still present					5
Double-crested cormorant	1	Dec. 1	3	Dec. 31	Still present					5
Great blue heron	Permanent resident		100	Dec. 1	-	-				200
Common egret	-	-	50	Sept. 1	1	Oct. 10				100
Green heron	-	-	25	Sept. 1	1	Oct. 28				75
King rail	-	-	300	Sept. 1	1	Oct. 15				500
Sora rail	-	-	200	Sept. 15	1	Oct. 8				500
Virginia rail	-	-	75	Sept. 1	1	Oct. 8				200
II. Shorebirds, Gulls and Terns:										
Terns:										
Ring-bill gulls	5	Oct. 20	800	Dec. 31	Still present					1,500
Herring gulls	5	Nov. 1	500	Dec. 31	Still present					1,000
Bonaparte's gulls	3	Nov. 10	6	Nov. 30	6	Nov. 30				10
Caspian tern	2	Oct. 3	4	Nov. 15	4	Oct. 15				10
Least tern	-	-	1	Sept. 8	1	Sept. 8				5
Wilson's snipe	1	Sept. 12	125	Oct. 1	Still present					300
Lesser yellowlegs	-	-	150	Sept. 10	5	Oct. 12				500
Greater yellowlegs	-	-	100	Sept. 15	Still present					300
Killdeer	Permanent resident		800	Dec. 1	-	-				2,000
Least sandpiper	Throughout period		150	Sept. 15	-	-				500
Pectoral sandpiper	-	-	75	Sept. 15	8	Oct. 12				300
Solitary sandpiper	-	-	50	Sept. 10	5	Oct. 12				30

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. <u>Doves and Pigeons:</u>					
Mourning dove	Permanent resident	2,000	Oct. 1	-	4,000
White-winged dove					
IV. <u>Predaceous Birds:</u>					
Golden eagle					
Duck hawk					
Horned owl	Permanent resident	10	Nov. 30	-	25
Magpie					
Raven					
Crow	Permanent resident	175,000	Dec. 31	-	250,000
Bald eagle	1 Dec. 7	2	Dec. 20	Still present	2
Marsh hawk	1 Sept. 10	40	Dec. 31	Still present	60
Cooper's hawk	Permanent resident	60	Dec. 31	Still present	100
Barred owl	Permanent resident	30	Dec. 15	-	50
Sharp-shinned hawk	1 Sept. 15	40	Dec. 31	Still present	70
Red-shouldered hawk	Permanent resident	100	Sept. 15	-	175
Red-tailed hawk	Throughout period	50	Dec. 31	-	100
Barn owl	Permanent resident	30	Oct. 1	-	50
				Reported by <i>J. Z. Atkeson</i>	

Thomas Z. Atkeson
Acting Refuge Manager

INSTRUCTIONS

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

UPLAND GAME BIRDS

Refuge WheelerMonths of September to December, 1962

(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	45	0	0	55% males 45% females	0	0	0	233	Quail had good nesting season Turkeys confined to refuge parts of Redstone Arsenal and closely adjacent area, used on and off refuge and shows some increase. Pheasant stocked experimentally on refuge by State in mid-fall.
	Cultivation and hay - 5,243 acres	2.5							2,093	
	Pasture - 1,744 acres	9							194	
	Weed and light brush land - 1,513 acres	2.5							605	
									<u>3,125</u>	
Iranian pheasants	Farmland and wood edges - 900 acres	10	0	0	65% males 35% females	0	0	0	91	
Wild turkey	Forest, hardwood and pine, and open land - 7,000 acres	400	0	0	30% males 70% 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 1962

(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.	8	0	0	0	0	None	known		None		30	30	50% Male 50% Female	

Remarks: Small group, probably 5, ranging on south side of refuge from Mitchell's Spring to Cotaco Creek. Redstone officials estimate about 75 on Arsenal Reservation with part of these using on and off refuge parts of reservation.

Reported by _____

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.

DISEASE

Refuge WheelerYear 1962

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	_____	_____

(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 1962.

PUBLIC USE

Refuge WheelerCalendar Year 1962

Total Use Visitor-Days	Hunting Use	Fishing Use	Miscellaneous Use
183,600	3,800	160,000	19,800

Where practical, by means of occasional spot checks, or other methods, show by percent and visitor-days the breakdown of the above figures and other related information:

Hunting (on refuge lands):	Percent	Visitor-Days	Acres	Miscellaneous:	Percent	Visitor-Days
Waterfowl	<u>0</u>	<u>0</u>	<u>0</u>	Recreation *	<u>76</u>	<u>15,000</u>
Upland Game	<u>100</u>	<u>3,800</u>	<u>19,000</u>	Official	<u>1-</u>	<u>65</u>
Big Game	<u>0</u>	<u>0</u>	<u>0</u>	Economic Use	<u>14</u>	<u>2,800</u>
Supervised by refuge <u>100%</u> by State <u>0</u> No. of blinds <u>0</u>				Other	<u>9+</u>	<u>1,935</u>

Hunting (off
refuge lands): Estimated man-days of hunting on lands
adjacent to the refuge 20,000 (These figures
should not be included in hunting-use totals above).

Fishing:

Acres of ponds or lakes 22,000 and miles of streams
10 open to fishing.

Comments: Figures do not include passers by
on public roads traversing refuge. Fishing use
shows increase over 1961 figure due to improved
water conditions.

(*including picnicking, swimming, boating,
camping, viewing wildlife, and photographing)

100

[illegible][illegible]

Figure 1. The effect of the concentration of the *Agrobacterium* suspension on the transformation efficiency of *Agrobacterium* strains. The concentration of the *Agrobacterium* suspension was 10⁶ cells/ml (a), 10⁷ cells/ml (b), 10⁸ cells/ml (c), 10⁹ cells/ml (d), and 10¹⁰ cells/ml (e). The transformation efficiency was determined by the number of white calli (white spots) on the medium. The data are the mean values of three independent experiments.

Hours	Percentage of Total Protein in Cytosol Fraction (%)
0	~10
2	~85
4	~65
6	~45
8	~35
10	~25
12	~20
14	~20
16	~20
18	~20
20	~20
22	~20
24	~20

[illegible]

Refuge Wheeler

Calendar Year 1962

Facilities

Picnic areas: areas 1 tables 4 fireplaces 2 toilets 0

drinking water 0 shelters 0

Swimming: **no restrictions**
designated areas / bathhouses 0

Boating: launching sites 0 rental facilities 1

service facilities 0

are motors allowed yes maximum horsepower no restrictions

Camping: **only under special permit**
permitted / or not permitted

tent camps 0 total capacity 0

group camps 0 total capacity 0

hunter camps 0 total capacity 0

trailer camps 0

lodges 0 capacity 0

cabins 0 motels 0 total units 0

Tours: Season Throughout year frequency as requested by groups

self-guided nature trails 1 is trail leaflet available? no

self-guided auto tour route 0 is tour leaflet available? no

Access points: estimate number in public use 18

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 1946

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
Loblolly pine	Bluff City Village Ck. & Beaver Dam vicinity	800 per acre	36 acres	1 - yr. seedlings	Feb. 10-28	80%	Drought	
Tulip popular	Sweetwater vicinity	700 per acre	1.4 acres	1 - yr. seedlings	Feb. 11-12	70%	Drought & rabbit damage	
Soybeans	White Spgs. unit	1 bu. per acre	54 acres	Seed	July	95%	-	
Grain sorghum	White Spgs. unit	10 lbs. per acre	163 acres	Seed	July	95%	-	
Millet	White Spgs. unit	50 lbs. per acre	207 acres	Seed	July	95%	-	
Fescue	Lakeside vicinity	50 lbs. per acre	50 acres	Seed	Sept.	90%	-	
Ryegrass	White Spgs. unit	35 lbs. per acre	15 acres	Seed	Sept.	95%	-	
Grain & vetch mixture	Flint Ck. Island	3 bu. per acre	155 acres	Seed	Sept.	95%	-	
Crimson clover	Flint Ck. Island	25 lbs. per acre	6 acres	Seed	Sept.	95%	-	

TOTAL ACREAGE PLANTED:

Marsh and aquatic.....0
Hedgerows, cover patches.....0
Food strips, food patches.....650
Forest plantings.....37.4

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

Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge Wheeler 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 Browsing Crops Type and Kind	Total Acreage
	Acres	Bu./Tons	Harvested		Unharvested				
			Acres	Bu./Tons	Acres	Bu./Tons			
Corn	601	18,235	8	150	274	7,650	883	Wheat	66
Soybeans	733	12,075	4	20	320	5,300	1,052	Fescue	269
Pasture	495	-	0	0	0	0	495	Grain & legume mix.	140
Hay	87	50 tns.	0	0	0	0	87	Oats	60
Millet	0	0	0	0	375	3,500	375	Ryegrass	15
Grain sorghum	0	0	0	0	271	2,700	271		
Barley	3	105	2	35	0	0	5		
Wheat	42	1,125	16	375	0	0	58		
Oats	56	2,975	18	1,015	0	0	74		
Fescue	15	120	5	40	0	0	20		
Totals	2,032	34,635	53	1,635	1,240	19,150	3,325		550
		50 tons hay						Fallow Ag. Land 14 acres	

No. of Permittees: Agricultural Operations 33 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				3,325
Hay - Wild				2. Acreage Cultivated as Service Operation ^{Summer} _{green forage}				424 27

DIRECTIONS FOR PREPARING FORM NR-8
CULTIVATED CROPS - HAYING - GRAZING

Report Form NR-8 should be prepared on a calendar-year basis for all crops which were planted during the calendar year and for haying and grazing operations carried on during the same period.

Separate reports shall be furnished for Refuge lands in each county when a refuge is located in more than one county or State.

Cultivated Crops Grown - List all crops planted, grown and harvested on the refuge during the reporting period regardless of purpose. Crops in kind which have been planted by more than one permittee or this Service shall be combined for reporting purposes.

Permittee's Share - Only the number of acres utilized by the permittee for his own benefit should be shown under the Acres column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the Bushels Harvested column. Report all crops harvested in bushels or fractions thereof except such crops as silage, watermelons, cotton, tobacco, and hay, which should be reported in tons or fractions thereof.

Government's Share or Return - Harvested - Show the acreage and number of bushels harvested for the Government of crops produced by permittees or refuge personnel. Unharvested - Show the exact acreage and the estimated number of bushels of grain available for wildlife. If grazing is made available to waterfowl through the planting of grain, cover, green manure, grazing or hay crops, estimate the tonnage of green food produced or utilized and report under Bushels Unharvested column.

Total Acreage Planted - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops - Specify the acreage, kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

Hay - Improved - List separately the kinds of improved hay grown. Annual plantings should also be reported under Cultivated Crops, and perennial hay should be listed in the same manner at time of planting.

Total Refuge Acreage Under Cultivation - Report total land area devoted to agricultural purposes during the year.

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

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

Refuge Wheeler County Morgan 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	569	11,160	69	1,175	289	6,055	927	Alfalfa	10
Soybeans	297	3,650	21	230	68	800	386	Fescue	325
Pasture	977	-	0	0	0	0	977	Ryegrass	120
Hay	255	273 tons.	0	0	0	0	255	Wheat-oat-vetch mix.	775
Millet	0	0	20	250	0	0	20		
Grain sorghum	35	710	21	410	0	0	56		
Rye	8	54	3	18	0	0	11		
Wheat	7	180	14	325	0	0	21		
Wheat-vetch mixture	12	275	24	550	0	0	36		
Oats	41	890	6	120	0	0	47		
Ryegrass	0	0	5	100	0	0	5		
Totals	2,201	16,919	183	3,178	357	6,855	3,746		1,230
		273 tons hay						Fallow Ag. Land 95 acres	

No. of Permittees: Agricultural Operations 30 Haying Operations 0 Grazing Operations 2

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING	Number Animals	AUM'S	Cash Revenue	ACREAGE
None				1. Cattle				
				2. Other	3	32	\$32.00	18
All hay included in cooperative agreements				58 additional acres of pasture use donated T.V. sanatorium. All other pasture incorporated in cooperative agreement.				
Hay - Wild				1. Total Refuge acreage under cultivation				
				2. Acreage Cultivated as Service Operation				

For crop 0

Green plantings 226

DIRECTIONS FOR PREPARING FORM NR-8
CULTIVATED CROPS - HAYING - GRAZING

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Government's Share or Return - Harvested - Show the acreage and number of bushels harvested for the Government of crops produced by permittees or refuge personnel. Unharvested - Show the exact acreage and the estimated number of bushels of grain available for wildlife. If grazing is made available to waterfowl through the planting of grain, cover, green manure, grazing or hay crops, estimate the tonnage of green food produced or utilized and report under Bushels Unharvested column.

Total Acreage Planted - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops - Specify the acreage, kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

Hay - Improved - List separately the kinds of improved hay grown. Annual plantings should also be reported under Cultivated Crops, and perennial hay should be listed in the same manner at time of planting.

Total Refuge Acreage Under Cultivation - Report total land area devoted to agricultural purposes during the year.

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

Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge Wheeler

County Madison

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			
Field peas	0	0	5	25	0	0	5	Fescue	40
Millet	0	0	15	200	0	0	15	Ryegrass	18
Fescue	0	0	17	45	0	0	17	Oats	45
*Pasture	196	-	0	0	0	0	196		
Oats	54	2,500	0	0	0	0	54		
Ryegrass	0	0	19	140	0	0	19		
Grain sorghum	10	100	0	0	0	0	10		
Corn	57	1,200	0	0	10	350	17		
Soybeans	73	1,700	0	0	16	350	89		
Totals	390	5,500	56	410	26	700	472		103
								Fallow Ag. Land	
								3 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	AUM'S	Cash Revenue	ACREAGE
-	-	-	-	1. Cattle	0	0	0	0
				2. Other	* All pasture incorporated in cooperative agreements.			
				1. Total Refuge Acreage Under Cultivation				472
Hay - Wild	None			2. Acreage Cultivated as Service Operation				0

DIRECTIONS FOR PREPARING FORM NR-8
CULTIVATED CROPS - HAYING - GRAZING

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Government's Share or Return - Harvested - Show the acreage and number of bushels harvested for the Government of crops produced by permittees or refuge personnel. Unharvested - Show the exact acreage and the estimated number of bushels of grain available for wildlife. If grazing is made available to waterfowl through the planting of grain, cover, green manure, grazing or hay crops, estimate the tonnage of green food produced or utilized and report under Bushels Unharvested column.

Total Acreage Planted - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops - Specify the acreage, kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

Hay - Improved - List separately the kinds of improved hay grown. Annual plantings should also be reported under Cultivated Crops, and perennial hay should be listed in the same manner at time of planting.

Total Refuge Acreage Under Cultivation - Report total land area devoted to agricultural purposes during the year.

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 1962

Number of Permittees	Acres	<u>Permittees' Share</u>		<u>Government's Share</u>		Summer Fall. Acres	Forage Green Man. A.	Cash Return	
		<u>Bushels</u>	<u>Acres</u>	<u>Bushels</u>	<u>Acres</u>				
Cooperative - (60)	4,623	57,054 bu. 323 tons of hay	292	5,223	1,623	26,705	112	1,883	0
Cash agreements: Pasture - (2)	18	0	0	0	0	0	0	0	\$32.0
Hay - (0)	0	0	0	0	0	0	0	0	0
Free-use pasture permits - (1)									

LAND FARMED BY SERVICE PERSONNEL DURING THE CALENDAR
YEAR 1962:

	<u>Unharvested Crops</u>	
	<u>Acres</u>	<u>Bushels</u>
Grain sorghum	163	1,700
Soybeans	54	500
Millet	207	2,400
Totals.....	424	4,600

No harvest of crops planted by Service personnel.
Forage or green manure acres planted by Service personnel, 253 acres.
Fallowed land disced for Johnson grass control, 151 acres.

WHEELER NATIONAL WILDLIFE REFUGE
1962 Grand Totals for Entire Refuge Farming Program

Crop	Permittees' Share		Government's Share				Total acres	Total Production
	Acres	Bu. or Tons	Harvested		Unharvested			
			Acres	Bu.	Acres	Bu.		
Corn	1,296	30,595	77	1,325	573	14,055	1,946	45,975
Soybeans	1,103	17,425	25	250	404	6,450	1,532	24,125
Field peas	0	0	5	25	0	0	5	25
Millet	0	0	35	450	375	3,500	410	3,950
Grain sorghum	45	810	21	410	271	2,700	337	3,520
Wheat & wheat- vetch mixture	61	1,580	54	1,250	0	0	1,152	2,830
Oats & oats- vetch mixture	151	6,365	24	1,135	0	0	175	7,500
Fescue	15	120	22	85	0	0	37	205
Ryegrass	0	0	24	240	0	0	24	240
Barley	3	105	2	35	0	0	5	140
Rye	8	54	3	18	0	0	11	72
	2,682	57,054	292	5,223	1,623	26,705	4,597	88,582

HAY: Hay in cooperative agreements including lespedeza, alfalfa, oats, soybeans, millet, etc..... 342 acres.
Production..... 323 tons.

PASTURE: Pasture in cooperative agreements, including fescue, white clover, oats, orchard grass, etc..1,668 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 1962 green forage plantings of high goose-use value, including oats, wheat, crimson clover, ryegrass, alfalfa, fescue and good perennial pastures, etc.....1,883 acres.
Supplemental green forage, including old pasture sod, vetch cover crops, etc., approximately..... 600 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, 6,683 acres. This reflects land actually in use during 1962 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, 214 acres. Adding this to the 6,683 acres of row crops, pasture, hay and broadcast crops shown above will give 6,987 refuge acres placed in some form of agricultural use during the calendar year.

Total 1962 fallowed land, 112 (fallowed acreage is considered that normally kept in agricultural use, but from which no crops were harvested in 1962. However, some of this acreage has been sown to green goose forage and is included in the 214 acres shown above.

Total number of 1962 farming permits includes 60 cooperative agreements, 2 cash pasture rentals and 1 pasture donation. There were no cash hay or row crop rentals in 1962. (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 424 acres of broadcast or row-planted soybeans, grain sorghum, millet, and 253 acres grain, grain-vetch mixtures, crimson clover, and fescue and clover mixtures, sown for goose forage and soil improvements.

The value of the total 1962 refuge crop production of 88,582 bushels of assorted grains and seeds and 323 tons of hay, based on current local prices, is set at \$129,920.00. This figure does not include the value of 1,744 acres of pasture.

Summary of food made available for waterfowl; 14,055 bu. corn, 6,450 bu. soybeans, 2,700 bu. grain sorghum and 3,500 bu. millet, a total of 26,705 bu. of grain and seed plus grazing from 1883 acres green stuff.

REFUGE GRAIN REPORT

Refuge WheelerMonths of September through December, 1966

(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	200	1,325	1,525	180	0	200	380	1,145	0	445	700
Grain sorghum	220	410	630	0	220	0	220	410	200	0	210
Soybeans	295	250	545	0	295	0	295	250	250	0	0
Millet	550	450	1,000	0	450	0	450	550	550	0	0
Combine peas	30	25	55	20	10	0	30	25	25	0	0
Ryegrass	20	288	288	0	288	0	288	0	0	0	0
Fescue	65	85	150	0	150	0	150	0	0	0	0
Wheat & wheat - vetch mixture	0	1,250	1,250	200	1,050	0	1,250	0	0	0	0
Oats	0	1,135	1,135	200	935	0	1,135	0	0	0	0
Barley	0	35	35	0	35	0	35	0	0	0	0
Rye	0	18	18	0	18	0	18	0	0	0	0
Vetch	0	15	15	0	15	0	15	0	0	0	0
Crimson clover	0	3	3	0	3	0	3	0	0	0	0
White clover	0	6	6	0	6	0	6	0	0	0	0

(8) Indicate shipping or collection points Decatur, Alabama(9) Grain is stored at Wheeler Refuge headquarters.(10) Remarks Bulk of corn in ear, but all other seed and grain sacked.

*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 195~~5~~62

Species	Collections				Receipts		Total Amounts on Hand	Amount Surplus
	Amount	Date or Period of Collection	Method	Unit Cost	Amount	Source		
Loblolly pine	-	-	-	-	29,000 seedlings	State nursery	-	-
Tulip poplar	-	-	-	-	1,000 seedlings	State nursery	-	-
Ryegrass	-	-	-	-	700 lbs.	Purchased	-	-
Hairy vetch	-	-	-	-	600 lbs.	"	-	-
Common vetch	-	-	-	-	300 lbs.	"	-	-
Ladino clover	-	-	-	-	200 lbs.	"	-	-
White dutch clover	-	-	-	-	100 lbs.	"	-	-
Crimson clover	-	-	-	-	150 lbs.	"	-	-
Remarks:	Above are receipts only. All collections are results of cooperative farming and are listing on accompanying NR 8 and NR 8a forms.							

Interior Duplicating Section,
 Washington 25, D.C. 17261

TIMBER REMOVAL

Refuge Wheeler

Year 1962

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
Arthur Brown	S.U.P 22722	3 & 4	75 acres	98.93 long cord	\$2.00 per long cord	\$197.94	None	Willow only
Limestone County Road Commission	*SACP 1142-B	Rockhouse road	About 1 acre	16.21 long cord	\$5.00 per long cord	\$81.05	None	Short leaf pine
* Cutting represents clearing of road right-of-way easement.								
In addition to the above, TVA sold the following from the Edmondson slough land, now refuge under letter permit only, and all revenue was collected by TVA.								
Local farmers		Edmondson slough vicinity	200	1,250 post	.15¢ per post	\$187.50	4 inch top	Black locust
Clancy Lumber Co.		Edmondson slough vicinity	15 acres	50 long cords	\$5.25 per long cord	\$262.50	Marked timber	Loblolly pine

Total acreage cut over 291

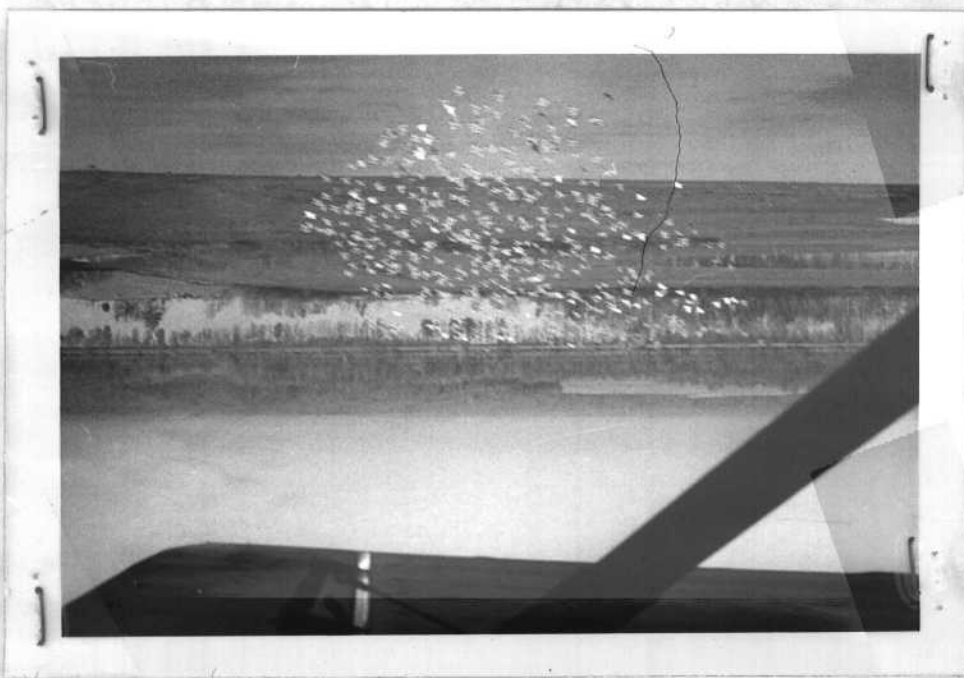
Total income Refuge \$278.99
TVA 450.00

No. of units removed B. F. _____ Method of slash disposal _____

Cords Refuge - 115.14 -- TVA - 50

Ties _____
Post TVA - 1,250

PHOTOGRAPHIC SECTION



Weekly waterfowl inventory. (Photo by Phillip Kyle)
Photo shows blue and snow geese in flight. Refuge inventories were taken weekly, weather permitting, throughout the period.



Visiting group. (Photo by E. R. Lamar) Photo shows visiting group from Huntsville Garden Club observing waterfowl from White Springs dike. Many visiting club, school and scout groups were guided about during the period.

IRANIAN PHEASANT RELEASE



Cock and Cage. (E.R.L.) Ninety-one of these birds were released on White Springs Island by State on November 7. Photo shows State Biologist James Keeler holding cock before release.



Free and Far. (E.R.L.) Photo shows Foreman H. H. Grammer releasing pheasant in White Springs locality. Birds seem to be doing well.

PUBLIC CROW ROOST SHOOTS

Permits for free. (E.R.L.) Photo shows maintenanceman Bishop issuing crow shooting permits to father and son. Public roost shoots were held in November and December and were well attended



Electronic call. (Photo by Phil Garner) Some crow hunters used electronic calls with good effect on refuge shoots. An estimated 3500 crows were killed on the two shoots held during the period.





Soybean combining. (E.R.L.) Photo shows cooperator T. L. Thorson hastily harvesting beans from dewatered land before winter rains began. Lowground bean yields were high, but upland crops suffered from drouth.



Gravel tops for muddy roads. (E.R.L.) Over four miles of roads were gravel surfaced during the period, plus much patching of others.