

CRAB ORCHARD NATIONAL WILDLIFE REFUGE

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I. GENERAL

Weather Conditions

Weather came in for more than its share of the headline during the period. The 1955 fall season will be remembered most (weather-wise) for having the coldest December since 1945 and the driest December in weather history.

Table No. I - below is a summary of weather statistics as collected by the Marion Veterans Hospital, official weather station:

Table No. I - Weather Statistics for Report Period

| Month | <u>Precipitation</u> | | <u>Temperatures</u> | |
|-------------------|----------------------|------|---------------------|---------|
| | 1954 | 1955 | Minimum | Maximum |
| September | 3.72 | 1.52 | 38 | 98 |
| October | 2.52 | 3.17 | 32 | 82 |
| November | 0.97 | 2.73 | 11 | 82 |
| December | 5.25 | 0.35 | 4 | 66 |
| Totals for Period | 12.46 | 7.77 | Extremes 4 | 98 |

Total Rainfall - 1955 - 33.25 inches
50-Year Average - - 41.90 "
Last 4-year Average - 32.36 "
Accumulated deficit - past 4-year drouth - - 38.16 inches

Water Conditions

As mentioned in the previous narrative, successful draw-downs were made on both Crab Orchard and Little Grassy Lakes in late September and early October. All valves and gates were closed October 18. Since an abnormally small amount of rain fell during the period, the level of Crab Orchard Lake has steadily dropped from 402.95 to 402.67 (from 24" below spillway to 28" below spillway) during the period. From a fish management standpoint, certainly the draw-down has been ideal. We are now wondering if spring rains will be sufficient to overcome the fall and winter deficit and put the lakes back in shape for the recreation business. Little Grassy has fluctuated only slightly around an elevation of 490.60 (9' 5" below spillway) since the control valve was closed. Much brush clearance and other shoreline improvements have been accomplished by the Group Camps there and they will be able to continue unhampered by rising water levels for most of the winter, so it seems.

BRANCH OF WILDLIFE REFUGES NARRATIVE REPORTS

M.R. SALYER _____

MISS BAUM _____

M.R. GRIFFITH _____

Operations

M.R. REGAN _____

M.R. DuMONT _____

Land Management

~~M.R. ACHERNECHY~~ Wra _____

DR. MORLEY _____

Habitat Improvement

DR. ERICKSON _____

M.R. STILLS WBS _____

M.R. KUBICHEK _____

Stenographers

REFUGE CRAB ORCHARD _____

PERIOD SEPTEMBER-DECEMBER 1955

73 858
02
147716

208815
02
1176.30
Page 2

Industrial and Municipal Water Use

During the report period water pumpage from Crab Orchard Lake, by the Refuge plant for industrial purposes, was normal. Increased industrial activity is not reflected in the water use but an increase in employment is reflected in the sewage handlings for the period. For information and reflection of the above statements Table No. II is made a part hereof.

Table No. II - Water and Sewage Handlings of Treated Water and Sewage at Refuge Operated Plants.

| Month | 1954 | | 1955 | |
|-----------|--------------------|-------------|--------------------|-------------|
| | Gal. Treated Water | Gal. Sewage | Gal. Treated Water | Gal. Sewage |
| September | 20,152,000 | 3,904,000 | 19,444,000 | 4,547,000 |
| October | 20,649,000 | 4,207,000 | 19,835,000 | 5,739,000 |
| November | 18,211,000 | 1,872,000 | 18,766,000 | 6,427,000 |
| December | 18,264,000 | 2,340,000 | 18,718,000 | 5,782,000 |
| Total | 77,276,000 | 12,323,000 | 76,763,000 | 22,495,000 |

The local municipalities, who have for the past several years relied partially or in whole upon Crab Orchard Lake waters, were slightly better off this report period than a year ago. Several of the communities were able to recover full reservoir storage in their city owned lakes during the spring and summer. As we enter the Year 1956 the communities are again getting into rather desperate straits as related to water supply and consequently increasing their take of water from Crab Orchard. Table No. III presents the raw water pumped by the communities.

Table No. III - Raw Water Pumped from Crab Orchard Lake by Municipalities

| Town | 1954 | 1955 |
|--------------|----------------|----------------|
| | Gallons Pumped | Gallons Pumped |
| Herrin | 132,920,000 | 73,858,200 |
| Marion | 95,670,900 | 9,500 |
| Cartersville | 28,560,000 | 14,946,900 |
| Carbondale | 120,000,000* | 120,000,000* |
| Total | 377,150,900 | 208,814,600 |

* Meter read annually on August 15, figure based on an average monthly take of 30,000,000.

Fires

Fire danger ratings remained rather low until the killing-frost of October 19. Since then, dead vegetation and an almost complete lack of rainfall have combined to make an unusually high hazard condition.

With frequent manning of the fire tower and a streak of good luck, not a single fire occurred on refuge land during the period-in fact we had no fires to report for the year, this far, the first time in the history of the refuge.

Close cooperation with the State Division of Forestry has resulted in their placing a portable two-way radio in the cab of the refuge fire tower. This permits communication on the state frequency between our tower and two of theirs plus their district headquarters at Benton. Fires occurring within the range of the two state and one federal tower can now be located by triangulations and reported immediately to the headquarters of both agencies. At this writing, telephone communications are being installed between the refuge tower cab and the tower-man's residence which should further expedite reporting of fires.

Fire and Security Activities

The refuge department responsible for fire and security had a routine operational period. Investigation of this department indicates a strong need for some changes that we hope can be made during the coming quarter. Indications are that shifts have been established so long that all shifts are not adequately trained, volunteer firemen have received no instruction or training runs on fire equipment operation for two years and there is an overall lethargy in the departments operation.

On September 19 and 20, Mr. W. G. Little of the Illinois Inspection Rating Bureau made an inspection on and of fire suppression equipment, fire hydrants and water line pressures. Verbal information was that we passed the necessary tests.

On December 7, by our invitation, Mr. Spaulding of the State Illinois Fire Marshalls Office presented an hour and half training talk and films to a meeting called of refuge personnel.

Going back through the calendar year 1955 records of the refuge fire department we note action reported and taken on seven alarms and are herewith summarizing same in Table No. IV.

Table No. IV - Fire Action 1955 by Fire and Security Department

| Fire No. | Date | Type Fire | Cause | Action Cost | Fire Loss |
|----------|-------|-----------|----------------------------|-------------|--------------------------------|
| 1 | 1-14 | Bldg. | Saw Distributor | \$18.80 | \$15.00 Elec. Motor |
| 2 | 2-8 | Field | Smokers | \$4.20 | $\frac{1}{2}$ acre weeds-none |
| 3 | 3-26 | Bldg. | Powder Expl. | None | \$2000. est. inv. loss |
| 4 | 4-18 | Field | Foundary Spks. | \$3.00 | $\frac{1}{4}$ acre weeds-none |
| 5 | 10-1 | Field | Debris Burning | \$5.40 | $1\frac{1}{2}$ acre weeds-none |
| 6 | 11-10 | Field | Debris Burning | \$1.60 | .3 acre weeds-none |
| 7 | 11-11 | Bldg. | Foundary Spks. | \$3.80 | \$25.00 Bldg. siding |

II. WILDLIFE

Migratory Birds - (See Forms NR-1 and NR-1A)

Populations and Behavior - The refuge goal of 50,000 Canada geese, set 4 years ago, was surpassed by nearly 15,000 this period. The Canada geese arrived in numbers earlier, built up faster and reached a peak population earlier and greater than in any previous year. The peak goose population was reached on November 9, when 64,595 Canada geese, 2,000 snow geese and 1,100 blue geese were counted in the weekly census. Mallards peaked at an even 100,000 on November 18, and black ducks at 8,000 on December 9. Redheads, canvasback and scaup were present during most of the period, but never exceeding 3,000 in the aggregate. The first old squaw ever known to be killed on Crab Orchard Lake was bagged in the public shooting area on December 11.

Unseasonably cold weather between mid-November and mid-December resulted in an almost complete freeze-over of Crab Orchard Lake. Both duck and goose populations took a nose-dive but came back rapidly with the warmer temperatures of latter December.

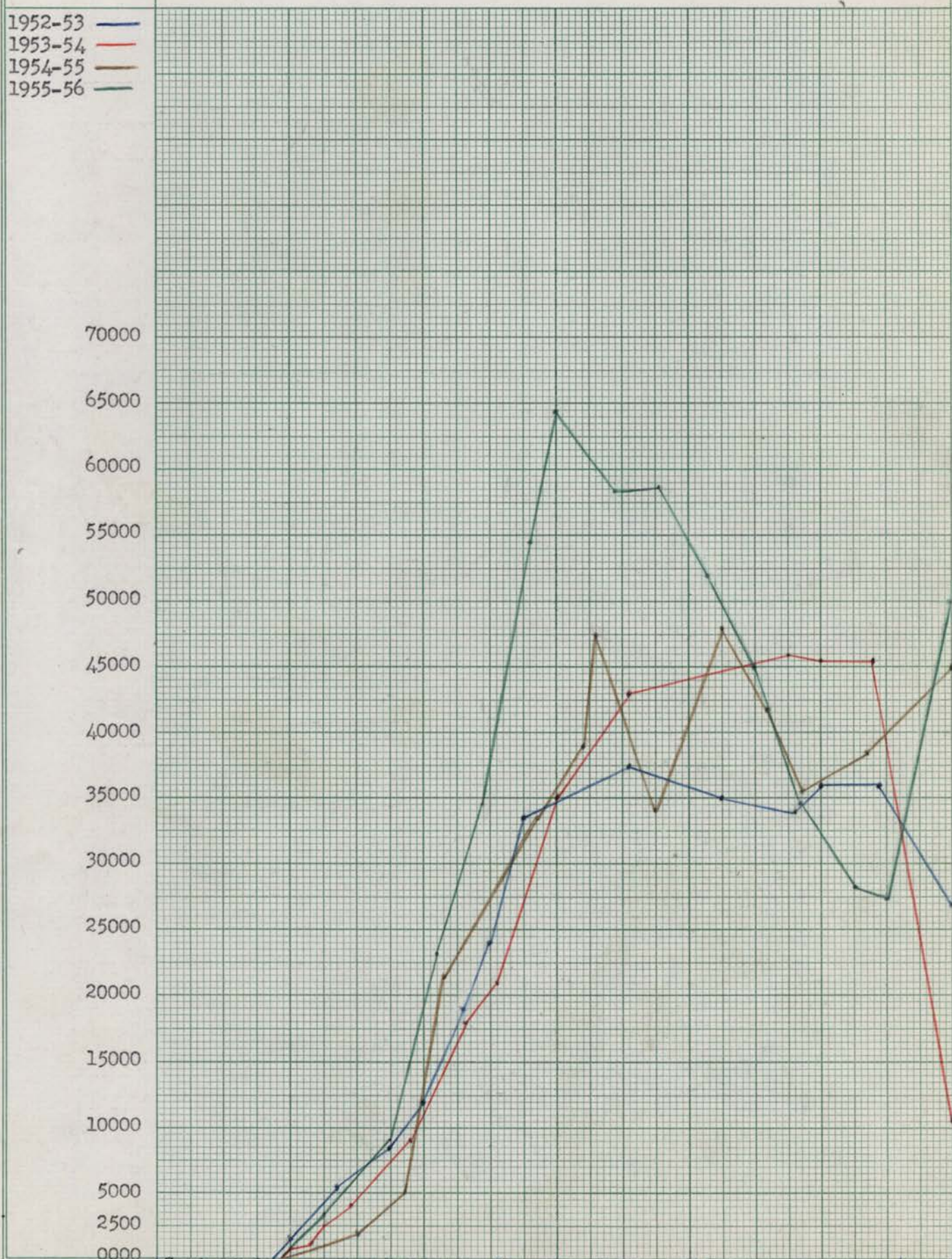
For some reason, the refuge goose flock began feeding outside the refuge almost from their day of arrival this season. This feeding pattern was rather well established by opening day, November 5, and hunter success on geese continued to be unusually good throughout the 41 days Illinois season. Several reasons for this wide-range feeding pattern have been offered. Among them are included the delayed opening, (2 weeks), on-the-refuge disturbance including field trialing and industrial activity, a larger than ever goose flock and a limited food supply due to a poor crop year and crop

Crab Orchard - Canada Goose Population - by Census

1952-53 — blue line
 1953-54 — red line
 1954-55 — brown line
 1955-56 — green line

70000
 65000
 60000
 55000
 50000
 45000
 40000
 35000
 30000
 25000
 20000
 15000
 10000
 5000
 2500
 0000

Sept. 10-30 | October 1-31 | November 1-30 | December 1-31 | Jan 8



manipulation restrictions. Probably some or all are contributing factors. In any event, the hunters were happy.

One unusual specimen of a Canada goose is wintering on the refuge. Refuge Aid, Lee Bush first saw it on November 29. An excerpt from his field diary describes it as follows:

...."Saw a peculiar Canada goose in a flock of 1,100 birds in the second field east of Crawford's residence on Samuel's Unit. It has normal neck and tail markings, but otherwise is white. It stood out among the rest of the geese. I studied it for about 5 minutes with the scope and in action and manner as well as size was a normal goose with the exception of it's white back and underparts".

This same goose has been observed by other staff members on several occasions since, the latest by the writer while on the winter inventory. A similar specimen has been reported this fall with the Horseshoe Lake flock, by Art Hawkins.

Six white fronted geese were observed near the refuge on November 20, one was checked in a hunter's bag the following day by Park Ranger Sheffield, the first observation and kill record for this species in this area.

American Mergansers continue to find the gizzard-shad "easy-picking" in Crab Orchard Lake. Close to 9,000 have been around since early December. Hooded Mergansers, goldeneyes and coots are also present in about normal numbers.

Other Waterbirds

A few great blue herons are still present and will probably stay on as winter residents. Herring gulls and ring-billed gulls are in from the Great Lakes and can invariably be found in close company with the mergansers cheering them on in their fishing efforts. Easy livers, those gulls.

At least 15 white pelicans used the refuge for a few days in October. This is the second consecutive year this bird has been found on the refuge.

Shorebirds showed a normal migration population with pectoral sandpipers, greater yellowlegs, semi-palmated sandpipers and kill-deers being most abundant. Two western sandpipers were observed by Refuge Aid Bush on September 22, a new record for this station.

Mourning Doves - This species provided a good opportunity for sharpening up the waterfowlers' shooting eye during the Illinois dove season, September 1, to October 5. The dry fall served to concentrate doves by limiting watering places and keeping vegetation scant in grain stubble. Several flocks of 20 to 30 birds each are wintering on the refuge.

Woodcock were observed very infrequently this period and seem to be continuing a downward trend in population.

Wilson snipe showed little change in numbers over recent years.

Food and Cover

The unusually dry fall did little to improve a none too plentiful waterfowl food supply. Refuge pastures and hayfields failed to green up as anticipated. Grain crops of corn, dwarf milo, buckwheat and soybeans were rapidly gleaned by the early and unprecedented buildup of geese. By December 1, and fully 2 weeks before the close of the goose season, practically no corn remained within reach of the geese. Even the milo was stripped clean a month earlier than in any previous year. All winter grain fields were devoid of any green much sooner than in previous years. Because of feeding restrictions, it was impossible to make more feed available by rolling down what remained of the refuge's 1/3 share of corn or by supplementary feeding from our granary. During the last two weeks of the goose season, we watched our geese move off the refuge with crossed fingers. No question about it, they were pretty much on their own. Kill figures from 2 hunting clubs picked at random adjacent to the refuge give an indication of how refuge food supplies may effect the goose kill. Results are shown in the following Table No. V.

Table No. V - Goose Kill as Related to Calendar Dates

| Week or Period | Refuge Goose Population (average week) | Club Kill | No. of Days |
|-------------------|---|--------------|-------------|
| Nov. 5-12 | 59 600 | 16 | 8 |
| Nov. 12-19 | 58 500 | 44 | 7 |
| Nov. 20-26 | 58 700 | 48 | 7 |
| Nov. 27 - Dec.3 | 57 300 | 156 | 7 |
| Dec. 4 -10 | 50 500 | 80 | 7 |
| Dec. 11-15 | 39 800 | 32 | 5 |
| Total | | 376 | 41 |

Checking the 2 club kill figures further, we find that 72% of the geese bagged were bagged in the last half (20 days) of the 41 day

season, during which time the goose flock decreased, mainly though southward migration, from about 60,000 to 35,000. Of course factors of weather, goose psychology and hunting pressure would variously effect the kill. Still the obvious reason, (and most obvious from field inspections after November 25), for an increasing kill from a declining population would seem to be lack of available feed -- and this lack mainly because of inability to manipulate refuge crops.

Diseases

No loss to nor incidence of diseases in waterfowl noted this period.

Upland Game Birds - (See Form NR-2)

Populations and Behavior. Bob-white Quail populations seemed to be up from last year. No census work was conducted by the Illinois Natural History Survey personnel this year, but from the numbers and size of the covey finds by the field trial fraternity during the fall trials, our songsters of the hedgerows would seem to be more than holding their own.

China Pheasants escaping from the National Springer Spaniel Trial are frequently observed in the southwest portion of the refuge. No reproduction is expected from them.

Food and Cover. Both plentiful and well interspersed to accommodate the healthy quail population. The only complaints heard about upland cover is from field trial people. The multiflora rose-sericia lespedeza hedges established in the past five years too well protect quail and too little favor passage of raw-boned pointers to receive universal acclaim.

Big Game Animals - (See Form NR-3)

Numerous observations of white-tailed deer by refuge personnel indicate our one big game species is multiplying rapidly. The excellent condition of all deer seen gives justification to the few farm-permittee complaints of deer raiding corn and soybean fields.

Again this winter, we are attempting to census the refuge deer herd by plotting all observations on a master sheet and projecting this observation figure to cover the entire refuge. A "calculated guess" would place the refuge deer population at close to 500 animals.

Food and Cover. Deciduous species, especially red maple, willow, sumac and river birch are in plentiful supply for winter browse. This ration is well supplemented by corn -- those ears at least which are above the 42 inch reach of the geese.

The 3500 acres of conifer plantations fairly well distributed over the refuge are favorite winter cover. Several reports have been made of deer taking to the open waters of the lakes when hard pushed by the hounds of local fox hunters. Pseudo-fox hounds, rabbit hounds and nondescript curs continue to be a problem on the refuge. One ardent goose hunter recommended to us, from experience, the most satisfactory remedy for deer-chasing fox hounds -- BBs -- magnum loads at 80 yards. He was positive in the finality of this cure -- though it may cost him the price of the dog.

Fur Animals, Predators, Rodents and Other Mammals.

Fox and Gray Squirrels - Both species more abundant than was believed. Since the leaf-fall, their presence is more evident. While on the Audubon Christmas census, 6 fox squirrels were observed in a single tree.

Cotton-tail Rabbit - Hunting success indicates the best population in four years.

Muskrat - Having a rough time because of low water levels. No fur harvest permits were issued this year. One trapper working the public use area reports a season catch of 65 muskrat and 19 mink. At best, trapping on the public use area is a risky business. Fur stealing, trap stealing and set molestation are the worst hazards.

Red and Gray Fox - Either or both species may be observed most any sunny morning on a drive of less than five miles over the less-traveled refuge roads. Both species seem to be at just about optimum levels for a biological balance. Their most objectionable features on the refuge would be their disturbance to waterfowl while "foxing" the hounds through the feeding areas, and side-tracking the hounds on the refuge deer.

Raccoon - Represented in good numbers, but far below the levels of 2 and 3 years ago.

Skunk - On the increase and probably more numerous than in 5 years. The owner of a slaughter house complains that while land clearing operations were going on inside the refuge adjacent to his property, the skunks practically invaded his place.

Predaceous Birds - (See Form NR-1A)

At least 9 bald eagles took part in salvaging crippled ducks and geese during most of the waterfowl season and are still present. One immature bald eagle was found dead 60 yards from a duck blind a day after the waterfowl season closed. Closer examination revealed the shot size to be #2. A rough-legged hawk in the melanistic phase has been observed on three different occasions this period. A pigeon hawk was sighted on November 21, also an infrequent visitor to this refuge.

Fish - (See NR Form No. 6)

Largemouth bass and crappie provided some fair to excellent fishing during October and again in December. Those anglers willing to ~~have~~ have the elements of a cold December were rewarded with some catches of unusually large crappie.

The one fish most talked about at the refuge office since Christmas, especially by Administrative Assistant, G. Hiley Hunter, was a 48 pound, 7 1/2 foot Atlantic sail fish boated by Hunter off the coast of south Florida on the day before Christmas. Since Hunter brought back photographs, affidavit and some excellent "smoked sail-tail", this catch has been accepted as authentic -- for Florida, that is.

III. REFUGE DEVELOPMENT AND MAINTENANCE

General Wildlife and Biological Development:

- Manipulated valves and effected draw-down of Crab Orchard and Little Grassy Lakes.
- Cruised and sold 55,550 b.f. saw timber, 439 posts.
- Seined largemouth bass fingerling and stocked 5 refuge ponds.
- Placed buoys on west refuge boundary.
- Installed and operated waterfowl banding traps.
- Performed weekly waterfowl census.
- Performed 488 man hours of law enforcement patrol.
- Erected 6 chain and cable barricades to control public access.
- Lilliston mowed (rotary) 310 acres for goose utilization and weed control.
- Cut and hauled red cedar logs to mill.
- Made Annual Audubon Christmas bird census.
- Inspected refuge boundary signs, cleared away brush and replaced signs where needed.

Recreational Development and Maintenance:

- In cooperation with National Park Service, drew up and submitted development plans for Devils Kitchen Lake.
- Mowed recreation areas (approximately 80 acres).
- Rip-rapped shoreline around Lookout Point w/215 tons ballast rock.
- Rip-rapped shoreline near Carterville beach w/130 tons ballast rock.
- Brushing, pruning, disking and seeding of 2 acres at Carterville Beach.
- Brushing and pruning of 1 acre at Hiway picnic area.
- Installed metal markers and flags on submerged bridge abutments.
- Leveling of parking area, sloping and deepening of dockage area, Little Grassy Lake concession.
- Removed dead timber along emerged shoreline adjacent to Little Grassy Lake spillway (approximately 2 acres).
- Cleanup and maintenance of recreation areas, 200 man hours.

Soil and Moisture Conservation

- Cleared brush and trees from 64 acres with tractor-dozers.
- Levelled 1.5 acres w/TD-9 dozer to utilize entire field for crops.
- Placed 126 bales straw for checks in four gullies.
- Located contour guides on 53 acres.
- Sowed 25 acres to rye for cover crops and green manure.
- Applied 101.55 tons limestone and 9.1 tons rock phosphate in pasture renovation.
- Disk-plowed and Rome disked 57 acres for pasture renovation.
- Cleaned 2600 pounds sweet clover seed, 975 pounds red clover seed, and 1040 pounds Korean lespedeza seed. Harvested and cleaned 60 pounds Serecia lespedeza.
- Built 3 farm-ponds of 2 - 2½ acres each, and repaired 2 others.
- With the aid of permittees, 700 feet of grass waterways established.
- Compiled quarterly report.

Construction and Maintenance

With the implementation of the reorganization, on September 6, changes in operational work procedures were necessary. It took a little time to combine the former industrial and refuge crews into an operational team but same was accomplished, as far as a physical

action, on October 3. The functioning of the organization, at this writing, is good but will be better in performance when we can combine our entire operating force into a central building to house equipment, warehousing, carpentry, plumbing, electrical and security functions. Activities by the reorganized forces during the period were as follows:-

Boiler House

- Closed in coal storage bin and installed a down blast Modine blower heater to reduce freezing of wet coal in the outside storage.
- Fire box on No. 1 coal burner scraped of slag and fly ash and inside walls painted with Hilolet.
- Several pipe repairs and replacements of feeds, steam lines and valves.
- Tubes on No. 2 oil burner rolled.
- External boiler inspection October 19, 1955.
- Boiler House #2 drained and winterized.

Buildings and Grounds

- Renting of storage buildings in Area 7 necessitated replacement of 35 overhead door sections and 138 window glasses.
- Repaired, by replacements with metal flashing, dormers on 15 staff residences and mopped same for water leaks.
- Replaced two furnace heating units in Staff House 10 and 13 and repaired furnaces and flues on all Government owned residences for winter heating season.
- Renovation and alteration of administrative office for appearance and better functional use of space; including alteration of partitions, refinish of floors, walls and ceilings, replumbing, rewiring, construction of a new furnace chimney and relocation of heat radiators.
- Repairs and renovation of bathroom Staff House #10.
- Performed a maintenance and safety inspection of all Government owned residences.
- Cleared, swept and prepared following buildings for industrial occupancy; S-2-2, S-2-4, S-13 and IN-1-1, 2-1, 3-1, 4-1, 5-1 and 6-1.
- Moved furnace from refuge shop to carpenter shop.
- Painted all steel work on Sneed, Wolf and Ogden road bridges.
- Levelled and graded for rock 3 acres of parking lot for Sangamo Electric Company.
- Hauled and spread in place 148 ton of ballast on Carterville pump house service road.

- Repairs to 400 feet of outside boundary fence and reporting of closed area prior to open hunting season.
- Motor patrol blading of 26 miles of primary and secondary road.
- Made temporary repairs to south Wolf Creek road bridge for field trial crossing.
- Recut, graded, ditched, disked, seeded and strawed railroad cut at A-5 road crossing.

Equipment

- With completion of season roadside mowing on all roads, serviced sickle bar mowers and winterized wheel tractors.
- Painted #110 light plant.
- Rebuilt Kalamazoo railroad work car and trailer car.
- Fabricated 8 metal buoy markers for use on refuge water boundary.
- Rebuilt water screen for water plant intake tanks.
- Replaced drive chain and gears on right hand drive of motor patrol.
- Complete motor jobs on Fire Pumper Truck and Ford Sedan.
- Replaced all brushes on drive motors of locomotive.
- Winterization of all operating equipment.
- Preventive maintenance and safety checks on all equipment.
- Equipment received this period was all rescue boat type, including:-
 - 19 foot - outboard motor cruiser
 - 16 foot - runabout
 - 3 - 10 h.p. - outboard motors

Railroad

- Replaced, tamped in place, raised to grade and reguaged 600 feet of trackage with 180 ties at Crab Orchard Creek crossing.
- Cleared Crab Orchard Creek trestle crossing of all floating debris and hot-mopped trestle.
- Repaired broken switch in Area 4 when it split and caused locomotive to jump track.
- Brushed 1400 feet of railroad right of way on Sangamo line to get fuel cars to boiler house.
- Cleaned and repaired 10 railroad-road crossings in Area 7.

Water and Sewer

- Replaced plumbing to laboratory facility at sewage plant.
- Repaired gear and boxing on #2 aeriator at sewage plant.

- Repair and overhaul of alum machine at water plant.
- Scraped and washed down interior wet sides of all seven lift stations.
- Cleared plugged sewer system at Ordill Foundry.
- Replaced 100 feet service water line to Dura-Crate Industries and installed water meter.
- Repairs to Lift Station #5 when lightning knocked out power and station flooded. Job included relocation of power inlet.
- Repaired break in 6" water main at Southern Acres.
- Repaired break in 6" sewer line at Lift Station #5.
- Reactivated oil burning boiler at water plant and replaced Modine blower heater system with radiators to better protect installed equipment from freezing.
- Removed and repaired #1 accelerator pumping unit at water plant. After 5 days of break in run on #1, pulled #2 unit for repairs.

Plantings:

No plantings of shrubs or tree stock this period.

Pest Plant Control-

A limited amount of work was done during the year under this category. Herbicidal controls were confined mainly to poison ivy and honey suckle eradication on the public use areas and to willow-trumpet vine eradication along the Wolf Creek Road causeway and entrances. All spraying was accomplished by ground-type application.

Poison Ivy - Honeysuckle - Blackberry control:

Approximately 2 acres scattered about the camping area and Lookout Point Area were given a spray treatment at the rate of 3 gallon of 2,4,5-T per 100 gallon of water on May 4, 1955. Solution was applied through a fog nozzle from the pressure pump system mounted on the refuge fire jeep. A better than 75% kill was attained on all species. Broadleafed weeds in the plot showed nearly 100% control.

Willow-Elm - Trumpet Vine control:

Approximately 2 acres were given a fog spray at the rate of 3 gallons of 2,4,5-T per 100 gallons of water. Over 75% kill was attained with little evidence of sprouting during the balance of the growing season. Sweet clover, goldenrod, ragweed and other weed species present on the control areas were 100% controlled.

Herbicide inventory at end of report period: 55 gallons 2,4-D, 15 gallons 2,4,5-T.

ENTERED
WBS

Cultivated Crops -

Predictions are seldom correct. Our prediction was no exception. In our previous narrative we predicted a poor crop year at Crab Orchard. We were wrong. The 1955 crop year was not good enough to be classed as poor; it was dismal. Almost all crop-yields were below average. Over 150 acres of corn and soybeans were left unharvested because the permittees would not have met harvesting expenses from the crop. Hay yields were the exceptions, but little consolation can be gained from this. In fact, this added to the headaches because hay of better quality could be purchased for about the same price it would cost our permittees to bale the hay grown on the refuge. The result of this being that only the better fields were harvested, and about one-third of the hay land was left uncut. Another straw placed on the camels back was that only a small percentage of the acreage scheduled for winter grains was sown. This was caused by late soybean harvests and dry, cement-hard ground that defied plowing.

To partially off-set and compensate for the loss of goose forage, the unharvested soybean and hay fields were mowed with the Lillistons. This did provide some good goose grazing. To minimize the loss of winter grains to the geese, the refuge inaugurated a program to have as much rye sown as possible. Any fields readied for winter grains too late for the permittee to chance wheat, oats, or barley were sown to rye. As an inducement, the refuge furnished all of the rye seed and reduced the governments share from one-half to one-third in the event the rye is harvested in the spring. The permittee is given the choice of harvesting the rye or turning it under for a green manure crop. The rye also provides a cover crop for ground that otherwise would have been left fallow.

The following Table No. VI not only reflects the lower crop yield but also the reduced acreage of crop land. Under the Farm Guides from the Soil Conservation Service many acres have been retired to permanent hayland or pasture.

Table No. VI - Crop Program Summary

| Crop | Acres | Total Yield | Yield/acre | Yield/5 yr. Ave. 1950-1954 | Departure fr. 5 yr. Average. |
|-------------|----------------------|-------------|------------------------|----------------------------|------------------------------|
| Corn | 1661.0 | 46195 bu. | 27.8 bu. | 30.5 | -2.7 |
| Corn silage | 68.5 | 258.7 tons | 3.8 tons | -- | -- |
| Soybeans | 1086.0 | 9391 bu. | 9.5 bu. ^{1/} | 10.3 | -0.8 |
| Wheat | 391.5 | 5410 bu. | 13.8 bu. | 10.7 | +3.1 |
| Oats | 735.5 | 16960 bu. | 23.2 bu. | 25.0 | -1.8 |
| Hay (tame) | 1449.0 ^{2/} | 695 tons | .94 tons ^{1/} | .83 | +0.11 |
| Other | 933.5 | | | | |

^{1/} includes harvested acreage, only.

^{2/} excludes hay acreage cut under special permits

Cooperation from the 55 farm permittees has been good considering the trying times of the past year. Declining crop prices, poor yields, and reduced crop acreages; however, will exact their toll and we expect about five or six permittees to "cancel-out". The following table reflects the drop in the incomes of the permittees caused by these factors.

Table No. VII - Economic Return, Farm Crops

| Crop | Yield | Unit Price | Amount |
|---------------------------------|------------|---------------|--------------|
| Corn | 46 195 bu. | @ \$ 1.00/bu. | \$ 46 195.00 |
| Corn silage | 258.7 tons | @ 8.00/ton | 2 069.60 |
| Soybeans | 9 391 bu. | @ 2.06/bu. | 19 345.46 |
| Wheat | 5 410 bu. | @ 1.70/bu. | 9 197.00 |
| Oats | 16 960 bu. | @ .55/bu. | 9 328.00 |
| Barley | 465 bu. | @ .85/bu. | 395.25 |
| Rye | 30 bu. | @ .65/bu. | 19.50 |
| Dwarf milo | 450 bu. | @ 2.00/bu. | 900.00 |
| Buckwheat | 135 bu. | @ 1.90/bu. | 256.50 |
| Hay | 695 tons | @ 18.25/ton | 12 683.75 |
| Lespedeza seed | 2 465 # | @ .12/lb. | 295.80 |
| Red Clover seed | 4 620 # | @ .35/lb. | 1 617.00 |
| Sweet Clover seed | 5 840 # | @ .15/lb. | 876.00 |
| Kentucky Fescue seed | 2 460 # | @ .31/lb. | 762.60 |
| 1955 Total | | | \$103 941.46 |
| Cash value of 1954 Refuge Crops | - | | 170 085.58 |
| Cash value of 1953 Refuge Crops | - | | 142 880.60 |
| Cash value of 1952 Refuge Crops | - | | 146 497.00 |
| Cash value of 1951 Refuge Crops | - | | 139 258.00 |
| Cash value of 1950 Refuge Crops | - | | 113 625.30 |
| Cash value of 1949 Refuge Crops | - | | 67 183.99 |
| Cash value of 1948 Refuge Crops | - | | 76 104.38 |

One bright spot in the gloomy picture is the amount of permanent type fertilizers spread in place to bring the soil to basic fertility. Approximately 897 tons of limestone, 269 tons of rock phosphate, 46 tons of super and triple-super phosphate, and 67 tons of potash were applied on about 640 acres of refuge land. Of this amount 101.5 tons of limestone and 9.1 tons of rock phosphate were purchased with Soil and Moisture funds in the renovation of a pasture.

IV ECONOMIC USE OF REFUGE

Grazing -

Refuge pastures are greatly in need of water. They turned brown about mid-August and have not recovered. Cattle were removed prior to the scheduled date by several permittees. The grazing season was set from May 1, through October 31. During this period 4771 AUMs were completed upon 4405 acres of pasture. Thirty permittees, issued 33 special use permits, paid \$4771.00 for grazing privileges.

Two newly seeded pastures are fenced and ready for occupancy during 1956. Fifty-five acres of an established pasture unit is undergoing renovation and will be ready for mild use in 1956. Besides these, another 112 acres lack only fencing for completion; and stock watering ponds have been completed in three other areas scheduled for pastures.

Haying -

A wet spring helped produce good hay yields, but weeds greatly reduced the quality of the hay, particularly of the lespedeza-grass mixtures. Many of the lespedeza fields will have to be reseeded in the spring because they did not produce enough seed after removal of the hay. Almost all of the haying operations were done on the share basis. Of the 1550 acres harvested, only 101 acres were harvested under five special use permits. The cash revenue from these five permittees amounted to \$402.00 for 100 tons of hay.

Timber -

Fifteen permittees operating under 20 permits shared in the harvest of 165,870 b.f. of sawtimber, 3,998 fence post and 750 poles during the year. A total revenue of \$1,784.73 was collected under this use.

Harvest^{ing} of all merchantable timber in the Devils Kitchen Lake basin by permit will be pushed during the coming year to facilitate basin clearance by contract.

Industrial -

Activity by established industrial tenants and prospective tenants was greater this report period than for any four month period over the past several years. The administrative reorganization of the Service activities here certainly had nothing to do

with this increased industrial activity. It is difficult to say what caused the recent interest.

New Industries Established:-

Dura-Crates, Inc., manufacturers of crates, cartons and crating leased space and went into production;

Federal Civil Defense Administration, operating through the General Services Administration have leased 62,100 sq.ft. of warehouse storage space for the storage of medical and engineering defense emergency supplies;

Olin Mathieson Corporation was the biggest fish we landed this period and though final lease negotiations are not completed they are operating under permit for some temporary storage prior to their going into ammonia dynamite production.

Activities of Established Industries:-

Allen Industries had some retraction in their warehouse storage;

Hoosier-Cardinal Corporation is now a complete loss to the area and has only some rental for storage of machinery;

Norge Company, has completely vacated their leased warehouse storage except for the portion sub-leased from the former General Radiator Company;

R. K. Manufacturing Company expanded this period by purchase of a Florida sound system firm and moving the operation here, which necessitated their leasing of additional space;

Sangamo Electric Company shows business volume growth through an almost monthly gain in employees, the Company held a public open house this period that proved most popular and educational to the local public and saw 4700 visitors to the plant the day of the open house;

Table No. VIII attached shows the industrial leasing, revenue and employment trends.

Industrial Prospects and Contacts:-

During the report period the following personal contacts were made, in reply to correspondence, relative to possible plant locations here in Southern Illinois: Mr. Fred Falkenstein of the Illinois Development Planning Committee and a group of local chamber leaders made a tour of the refuge industrial facilities with reference to location of industrial prospects on the area; Industrial placement representatives of the Illinois Central Railroad Company made two visits to the refuge relative to one, location of a steel milling plant and

Table No. VIII - Industrial Leasing, Revenue & Employment

| Industry | Lease Footage | | | | Monetary Return | | | | TOTAL | Total No. Employed 12-31-54 | Total No. Employed 12-31-55 |
|--------------------------|---------------|---------|---------|---------|-----------------|-----------|-----------|-----------|-------------|-----------------------------------|-----------------------------------|
| | Sept. | Oct. | Nov. | Dec. | Rent | Wat.&Sew. | Steam | Switching | | | |
| Allen Industries, Inc. | 41,000 | 41,000 | 41,000 | 30,750 | \$ 2,262.46 | \$ 17.70 | | \$ 283.20 | \$ 2,563.36 | -- | -- |
| Aronson, Knute | 1,550 | 1,550 | 1,550 | 1,550 | 77.52 | | | | 77.52 | -- | -- |
| Beardon Construction Co. | | | | | | | | 9.44 | 9.44 | -- | -- |
| C.O.F.T. Club | | | | | 25.00 | 32.00 | | | 57.00 | -- | -- |
| C.O.S.A. Club | | | | | 25.00 | 24.15 | | | 49.15 | -- | -- |
| Diagraph-Bradley, Ind. | 71,186 | 71,186 | 71,186 | 71,186 | 4,544.12 | 237.54 | | 47.20 | 4,828.86 | 115 | 110 |
| Dura-Crate, Inc. | | | | 10,471 | 175.52 | 83.64 | | 198.24 | 457.40 | -- | 46 |
| E.Side Lumber Co. | 10,250 | 10,250 | 10,250 | 10,250 | 683.32 | 16.00 | | 47.20 | 746.52 | 2 | 2 |
| Gen'l. Radiator Co. | 35,850 | 35,850 | 35,850 | 35,850 | 2,305.00 | | | 151.04 | 2,456.04 | -- | -- |
| Gen'l. Services Admin. | | | | 62,100 | 871.25 | | | 84.96 | 956.21 | -- | 7 |
| Gen'l. Telephone Co. | 4,715 | 4,715 | 4,715 | 4,715 | 267.20 | | | | 267.20 | 2 | 3 |
| Gr't. Lakes Solvents | 20,721 | 20,721 | 20,721 | 20,721 | 1,172.72 | 16.00 | | 1,038.40 | 2,227.12 | 2 | 2 |
| Grinnel Sash & Door | 43,767 | 43,767 | 43,767 | 43,767 | 2,413.40 | 48.68 | | 443.68 | 2,905.76 | 55 | 35 |
| Hayner, A. | 1,069 | 1,069 | 1,069 | 1,069 | 35.64 | | | | 35.64 | -- | -- |
| Hoosier-Cardinal Corp. | 73,973 | 10,250 | 10,250 | 10,250 | 1,547.03 | | | 9.44 | 1,556.47 | -- | -- |
| Kroger Company | 10,250 | 10,250 | 10,250 | 10,250 | 580.84 | 16.00 | | 198.24 | 795.08 | 1 | 1 |
| Norge Company | 20,500 | | | | 290.42 | | | 179.36 | 469.78 | -- | -- |
| Olin-Mathieson Co. | | | 3,214 | 3,214 | 26.78 | | | | 26.78 | -- | -- |
| Pride of Egypt | 4,224 | 4,224 | 4,224 | 4,224 | 281.60 | 369.60 | | | 651.20 | 16 | 17 |
| Radionic Products | 22,964 | 22,964 | 22,964 | 22,964 | 1,639.60 | 406.73 | | | 2,046.33 | 113 | 158 |
| R. K. Mfg. Company | 3,891 | 3,891 | 3,891 | 7,271 | 325.99 | 26.13 | | | 352.12 | 21 | 29 |
| Sangamo Elec. Co. | 232,682 | 232,682 | 232,682 | 232,682 | 12,128.20 | 7,341.70 | 20,786.90 | 9.44 | 40,266.24 | 1,067 | 1,331 |
| So. Homes, Inc. | 72,270 | 72,270 | 72,270 | 72,270 | 3,659.32 | 24.00 | | 764.64 | 4,447.96 | 25 | 18 |
| So. Ill. University | | | | | | 821.73 | | 9.44 | 831.17 | 27 | 65 |
| Triangle Const. Co. | | | 20,500 | 20,500 | 1,025.02 | | | | 1,025.02 | -- | -- |
| Univ. Match Company | 114,743 | 114,743 | 114,743 | 114,743 | 5,322.80 | 457.79 | | 75.52 | 5,856.11 | 127 | 111 |
| Wood, Charles Corp. | 18,082 | 18,082 | 18,082 | 18,082 | 1,024.64 | 80.84 | | 66.08 | 1,171.56 | 27 | 35 |
| Cartersville Water | | | | | | 288.94 | | | 288.94 | -- | -- |
| Carbondale Water | | | | | | 2,400.00 | | | 2,400.00 | -- | -- |
| Herrin Water | | | | | | 1,477.16 | | | 1,477.16 | -- | -- |
| Marion Water | | | | | | | | | | -- | -- |
| Totals-Sept.-Dec. 1955 | 803,687 | 719,464 | 743,178 | 808,879 | \$42,710.39 | 14,186.33 | 20,786.90 | 3615.52 | 81,299.14 | | 1,970 |
| Totals-Sept.-Dec. 1954 | | | | 727,071 | \$41,018.06 | 11,829.66 | 15,127.40 | 2388.32 | 70,363.44 | 1,600 | |

second, distribution warehousing for a fertilizer company; representatives of the Shulte Trailer Coach Company of Elkhart, Indiana, visited and inspected the facilities for possible plant expansion location, our most recent word on this contact is that they will locate in West Frankfort; the Armed Services Technical Information Center of Dayton, Ohio, inspected the igloo storage for possible record storage; Todd Laundries, of St. Louis, Missouri, have investigated production space with the thought of locating a cover-all manufacturing plant; the Army Counter Intelligence Corps checked on possible location of office space; a Screw Machine Shop checked on possible location of a shop on the area.

The labor-management picture took a turn for the good this period. Several of the larger companys, Sangamo, Norge, Universal Match and Diagraph-Bradley had labor contracts expiring. In all negotiations labor-management were able to agree on 2 and 3 year labor contracts. All previous contracts have been on a one year basis.

Heat and Steam Production -

Steam and heat requirements from our Boiler House #1 to Sangamo Electric Company have been excessive this period. Part of the excess requirements stems from much colder weather than normal for prolonged periods and part from processing requirements of the plant expanding. Several days have found our boiler operation pushing full capacity out of a system much in need of repairs. Some engineering studies are definitely needed to reduce operating losses and increase efficiency of the plant.

Tabulated below are some operating figures for our Boiler House #1:

Table No. IX - Comparative Heat and Steam Production, Boiler House #1

| Boiler No. & Type | 1954 | | 1955 | |
|----------------------|-------------------|-----------|-------------------|-------------|
| | Steam Prod. | Fuel Used | Steam Prod. | Fuel Used |
| #1 - Coal Fired | 27,557,500 | 3,715,112 | 35,880,000 | 4,527,900# |
| #2 - Oil Fired | 6,277,500 | 56,335 | 10,817,500 | 91,624 gal. |
| Total Steam Produced | 33,835,000 pounds | | 46,697,500 pounds | |

Other Uses -

The payment from Schwartz & Davis is calculated at 3% of their gross receipts and is tabulated in the following Table No. X.

Table No. X

| Facility | Sept. | Oct. | Nov. | Dec. | Total | Total for 1955 |
|------------------|-------|-------|-------|-------|--------|-------------------|
| Refreshments | 13.10 | 2.69 | .60 | .14 | 16.53 | 189.47 |
| Gas & Oil | 15.19 | 2.70 | 4.91 | .22 | 23.02 | 133.32 |
| Boat, Dock, Mtr. | 12.86 | 3.26 | .44 | .24 | 16.80 | 146.48 |
| Storage | 7.31 | 15.09 | 17.23 | 1.82 | 41.45 | 182.84 |
| Equip. & Repairs | 30.32 | 11.50 | 7.54 | 13.10 | 62.46 | 546.13 |
| Bathhouse (Swim) | 2.24 | | | | 2.24 | 103.67 |
| Rides | 1.39 | .09 | | | 1.48 | 14.21 |
| Shop Labor | 6.15 | .65 | | .56 | 7.36 | 22.53 |
| Miscellaneous | | | | | | 250.00 |
| Totals | 88.56 | 35.98 | 30.72 | 16.08 | 171.74 | 1,588.65 |

Revenues realized from all phases of the recreation operation are listed in Table No. XI which follows.

Table No. XI

| Item | September thru Dec. | Previous Months | Total for 1955 |
|--|------------------------|--------------------|-------------------|
| Camp lease, Educational Council of 100 | 300.00 | | 300.00 |
| Camp lease, Independent Order of Odd Fellows | 50.00 | | 50.00 |
| Camp lease, Seventh Day Adventist Church | 47.00 | | 47.00 |
| Camp lease, Veterans of Foreign Wars | | 50.00 | 50.00 |
| Camp permit, Boy Scouts of America | | 1.00 | 1.00 |
| Camp permit, Future Farmers of America | | 1.00 | 1.00 |
| Camp permit, Girl Scouts of America | | 1.00 | 1.00 |
| Camp permit, Methodist Church | | 1.00 | 1.00 |
| Camp permit, Presbyterian Church | 1.00 | | 1.00 |
| Club permit, Crab Orchard Boat & Yacht Club | | 25.00 | 25.00 |
| Concession, Julius Swayne, Little Grassy | | 711.00 | 711.00 |
| Concession, Schwartz & Davis, Crab Orchard | 171.74 | 1,416.91 | 1,588.65 |
| Impoundment Fees, 2 boats | 20.00 | | 20.00 |
| Total revenues | 589.74 | 2,206.91 | 2,796.65 |

V FIELD INVESTIGATIONS AND APPLIED RESEARCH.

Ornithology -

As previously mentioned two new species were added to the refuge bird list during the period, #260 - Western Sandpiper and #261 - white-fronted goose.

The Audubon Christmas bird census conducted December 28, gave a tabulation of 60 species and 78,454 individuals.

Banding -

Low water levels and continual freeze-ups have hampered duck banding efforts this period. The 40' x 40' swim trap was inoperative a good percent of the time because of ice forming in the throat.

The following table summarizes our duck banding efforts this period. Sex-ratios are compared with other years.

Table No. XII

| | 1955 | | | | Total |
|------------|---------|------------|-------|------------|-------|
| | Adult ♂ | Immature ♂ | ??? ♀ | Immature ♀ | |
| Mallard | 23 | 55 | 55 | 32 | 165 |
| Black Duck | 14 | 11 | 35 | 3 | 63 |
| Totals | 37 | 66 | 90 | 35 | 228 |

| Mallard | | | | Black Duck | | | |
|---------|------------|-----|-----|------------|------------|-----|-----|
| Year | No. Banded | % ♂ | % ♀ | Year | No. Banded | % ♂ | % ♀ |
| 1949 | 280 | 77 | 23 | 1949 | 46 | 53 | 47 |
| 1950 | 28 | 76 | 24 | 1950 | 27 | 48 | 52 |
| 1951 | 129 | 62 | 38 | 1951 | 147 | 63 | 37 |
| 1952 | 385 | 71 | 29 | 1952 | 246 | 62 | 38 |
| 1953 | 326 | 70 | 30 | 1953 | 178 | 56 | 44 |
| 1954 | 919 | 80 | 20 | 1954 | 68 | 75 | 25 |
| 1955 | 165 | 47 | 53 | 1955 | 63 | 40 | 60 |
| Total | 765 | | | | 2,232 | | |

No banding of Canada geese was attempted during the waterfowl season. At this writing the "Boom-net" is strung out, baited and

loaded and efforts will be made to trap and band all geese possible before their April departure.

Goose Browse Study:

Southern Illinois University graduate student Paul Vohs completed field work on the rye grass and winter rye interplantings in wide spaced corn this period. This project sponsored jointly by the University and the State Natural History Survey may prove to be of little value because of the extremely dry growing period since the grass and rye seedings were made. Mr. Vohs has not yet submitted any findings of the study to this office.

Chestnut Scion Grafts:

An inspection of the experimental chestnut planting in which 10 scion grafts were made last spring in cooperation with Mr. J. D. Diller, Virginia Pine-Hardwood Research Center, revealed none of the grafts to be successful. A second attempt at this method of testing blight resistance of native chestnut stock will be made again this coming spring.

Ecological Relations Study:

No report from Natural History Survey personnel other than write-up of accumulated data is now in progress.

VI PUBLIC RELATIONS

Recreational Use

In spite of the cool, wet June weekends which reduced that month's visitation by approximately 80,000 persons according to State Highway counter tabulations, our total visitation increased over last year by about 60,000 persons.

| | <u>1954</u> | <u>1955</u> |
|---|-------------|-------------|
| Count based on State Highway Department traffic counters at key positions - | 900,450 | 958,700 |
| Count based on our own guesstimations - | 864,300 | 925,900 |

Perhaps the difference in our count and their count could be narrowed considerably if we made a survey of the many nocturnal visitors! ?

Well!

A glance at the following fall visitation tabulations will emphasize two items which have already been mentioned earlier in the narrative. The first is, that the use of the refuge dropped somewhat during September and October because of the lower lake level and the exposed mud shoreline. The second is, the considerable increase, (approximately 40,000) in visitation during November and December because of the better waterfowl hunting and increased spectator interest in birdlife on the lake.

Table No. XIII

| | <u>1954</u> | <u>1955</u> |
|-----------------------|-------------|-------------|
| September | 48,500 | 46,500 |
| October | 60,500 | 60,000 |
| November | 39,950 | 61,900 |
| December | 28,100 | 45,500 |
| | <hr/> | <hr/> |
| Total Fall Visitation | 177,050 | 213,900 |

A breakdown of day use, by categories is compared with last year in Table No. XIV, which follows:

Table No. XIV

VISITOR DAY USAGE

| | <u>1954</u> | <u>1955</u> |
|----------------------------|-------------|-------------|
| <u>Hunting:</u> | | |
| Waterfowl | 25,850 | 31,750 |
| Dove | 400 | 400 |
| Quail | 500 | 500 |
| Squirrel | 1,800 | 1,500 |
| Rabbit | 1,500 | 1,500 |
| Fox Hounding | 800 | 800 |
| Raccoon | 200 | 200 |
| Total Hunting | - 31,050 | 36,650 |
| <u>Fishing:</u> | | |
| Boat | 85,000 | 85,000 |
| Bank | 40,000 | 40,000 |
| Dip Netting | 250 | 250 |
| Total Fishing | - 125,250 | 125,250 |
| <u>General:</u> | | |
| Picnicking | 150,000 | 150,000 |
| Swimming (C.O. Beach) | 34,000 | 20,000 |
| Swimming (promiscuous) | 136,000 | 140,000 |
| Camping (individual) | 7,000 | 8,000 |
| Camping (Organized - L.G.) | 20,500 | 30,000 |
| Power Boating | 27,000 | 30,000 |
| Sail Boating | 2,000 | 1,500 |
| Field Trialing | 4,000 | 3,000 |
| Dog Training | 1,500 | 1,500 |
| Spectators (General) | 290,000 | 320,000 |
| Spectators (Waterfowl) | 36,000 | 60,000 |
| Total General | - 708,000 | 764,000 |
| TOTAL VISITORS | - 864,300 | 925,900 |

All Little Grassy Lake Camps made progress in their development this past year. The 8 foot draw down of the lake and the dryness of the season was a boon to their waterfront improvement program. Ten new buildings were erected this year including 2 lodges, 4 cabins, 1 dining hall, 1 crafts shelter, and 2 shower-lavatory units. Total camp useage was above last year by about 50%.

The Little Grassy Concessioner, Julius Swayne, is quite pleased with his increased business of the past year, and during the fall has been expanding his dockage facilities to accommodate the demand for boat storage.

The Crab Orchard Concessioner, Cecil Davis, has his ups and downs through the year, with his total receipts being slightly below that of the previous year. His ups were in his new "red hot" hamburger kitchen, and his boat storage revenues. His downs were in the beach receipts (down about 30%) and equipment sales. Two psychological downs which caused unhappiness were the \$500 Government assessment for a building loss by fire, and the possibility of a contract ammendment pinning all property losses to the concessioner.

The public bathing beach problem is one which will require more thought to solve. Its business is falling because of several factors, and its operation by the concessioner seems to be becoming a losing proposition. Some of the problems are; the increase of desirable free places to swim around the lake shore; the general depreciation of the old fashioned bathhouse; and, the fixed cost of labor and overhead with decreasing income.

One possible solution to the problem would be to make the beach a free "swim at own risk" area and rearrange the interior of the building to provide free access thru it with the concessioner present to provide a basket service (with 10¢ fee) and the usual beach concessions. The Government might then take care of the beach depreciation and possibly furnish lifeguard service.

The Crab Orchard Boat & Yacht Club has its membership at capacity and is moving along with its general improvements. A new revetment wall has been constructed of railroad ties to protect the point which was eroding away about 5 feet each year. The rapidly rotting docks of untreated timber are gradually being replaced with new untreated timber. They have salvaged the time house buildings from the Primer Line from which they hope to build a bathhouse.

Veterans Haven still accommodates the patients from Marion Veterans Hospital and the Anna State Hospital during the summer months. It is still a beautiful building and is getting relatively light useage for a facility of that type.

Local chambers of commerce continue to refer to Crab Orchard Refuge as "The Field Trial Capitol of the World". The fall schedule indicates the reason for this tag.

| | | |
|--------------------|--|-------------|
| September 8-11 | Crab Orchard Beagle Club | - Pack Race |
| September 21-25 | Sangamon Beagle Club | |
| October 13-16 | Egyptian Beagle Club | |
| October 15,16 | Crab Orchard Shooting Dog Stake | |
| October 22 | Crab Orchard Amateur All Age Stake | |
| October 31-Nov. 4 | American Field Futurity | |
| November 4-10 | Crab Orchard Field Trial Club \$1000 Open All Age | |
| November 5,6 | Mississippi Valley German Shorthair Trial | |
| November 26-Dec. 1 | Nat'l. Brittony Spaniel Bench & Field Trial Championship | |
| November 1-3 | Nat'l. English Springer Spaniel Championship | |

Refuge Visitors -

A log of visitors, with business of importance, for the period follows.

| <u>Date</u> | <u>Name</u> | <u>Title</u> | <u>Purpose of Visit</u> |
|-------------|------------------|---|--|
| Sept. | | | |
| 1 | M. G. Anderson | Dist. Forester, Ill. St. Div. of Forestry | Fire Suppression |
| | Leonard Wall | Fire Warden, Ill. St. Div. of Forestry | Organization |
| 7 | Marion Haley | Plant Manager | Hoosier-Card. Lease |
| 14 | Winton Walkup | Dist. Mgr., Ill. Central Railroad | Courtesy |
| 14 | George Carty | Sangamo Electric Corp. | Courtesy |
| 19 | Link Perrine | Ill. St. Employment Service | Courtesy |
| | Ed. Aiken | Ill. St. Employment Service | Courtesy |
| | Ernest Voos | Southern Illinois University | |
| | Warren Little | Ill. Inspection Bureau | Fire Rating Insp. |
| | Dalias Price | Southern Illinois University | Rain Guages |
| | Dr. James Felts | Marion Chamber of Commerce | Courtesy |
| | D. D. Wright | Marion Chamber of Commerce | Courtesy |
| 20 | Goffrey Hughes | Executive Secretary, S.I.I. | Re: Ind. Prospect |
| | J. Ward | Ward Transfer Co. | Devils Kit. & Olin Lse. |
| | T. Firks | Ward Transfer Co. | Devils Kit. & Olin Lse. |
| 27 | Goffrey Hughes | Executive Secretary, S.I.I. | } Tour of refuge for industrial leasing. |
| | Paul Dorris | | |
| | Bob Henderson | W. Frankfort Chamber of Commerce | |
| | Bob Nethercott | Egyption Assoc. Law Enf. Officers | |
| | Fred Falkenstein | Springfield | |
| | Ralph Kenyon | R. K. Manufacturing Co. | Courtesy |

| <u>Date</u> | <u>Name</u> | <u>Title</u> | <u>Purpose of Visit</u> |
|-------------|--------------------|---------------------------------|-------------------------|
| Sept. | | | |
| 28 | Si Brown | Soil Conservationist, SCS | Farm Plant |
| | Mr. Louvall | Eng., U.S.A. Corps of Engineers | Devils Kit. Contract |
| 28-30 | Robert Sharp | F.W.S., Reg. O. Fisheries | Fish Mgmt. |
| | Paul Handwerk | F.W.S., Hebron, O., Fisheries | Fish Mgmt. |
| 29 | Ray Plute | Norge Appliance Corp. | Norge Warehousing |
| | Peter Vinsavange- | " " " | " " |
| | W. A. Leucke | Cent. Ill. Power & Serv. Co. | Damaged power pole |
| | Mr. Gibbons | " " " " " " | " " " |
| Oct. | | | |
| 4 | J. J. O'Neill | Olin-Mathieson Corp. | Leasing |
| | John Caruthers | " " " | " |
| 5 | Reid Troutman | Warden, Ill. Dept. of Conserv. | Law Enforcement |
| 6 | Goffrey Hughes | Executive Secretary, S.I.I. | Courtesy |
| | Carl Wall | Cent. Ill. Power & Serv. Co. | Courtesy |
| | Dr. Keith Humble- | So. Ill. Univ., V.T.I. | Southern Acres |
| | Karl Malzahn | So. Ill. Univ., V.T.I. | development |
| | Richard Y. Jones- | Neosho, Missouri | Proj. Eng. Position |
| | Eugene Hibbs | Dura-Crates, Inc. | Location of Asmbly Plt. |
| | Fred Melcher | " " " | " " " " |
| | Steve Robbins | " " " | " " " " |
| | Chester Kreegar | " " " | " " " " |
| 7 | R.W. McElwee | General Electric | Locomotive Insp. |
| 11 | Frank Olson | Liberty Powder Company | Olin Leasing |
| 12 | Lester Jordan | Water Supt., Herrin, Ill. | Water breaks |
| 13 | Dr. Wm. Freeberg- | Recr. Dept., Sou. Ill. Univ. - | Boundary Post. of Lease |
| | Hamilton Sago | G.S.A. Engineer | Warehousing Inst. |
| | Link Perrine | Ill. St. Employment Service | Courtesy |
| 13-15 | Forrest Carpenter- | FWS, Asst. Reg. Ref. Supervisor | Refuge Insp.-Olin L. |
| 14-15 | J.C. Saylor III | FWS, Chief, Branch of Refuges | " " " " |
| 15 | J. J. O'Neill | Olin-Mathieson Corp. | Industrial Lease |
| | John Caruthers | " " " | " " |
| | Mr. Sheldon | " " " | " " |
| 17 | Winton Walkup | Ill. Central Railroad | Courtesy |
| | Russell Falstedt- | FWS, Jr. Mgr., Mingo Refuge | Courtesy |
| 18 | Chester Kreegar | Dura-Crates, Inc. | Plant Planning |
| 20 | Marshall Stinnett- | FWS - USGMA | Law Enf. Pers. Assign. |
| | Rex Tice | - FWS - USGMA | " " " " |
| 24 | Kenneth Richey | Pers. Dept., Sangamo Electric | Office Leasing |
| | Marion Haley | Hoosier Cardinal | Warehouse lease |
| 25-26 | Chester Kreegar | Dura-Crates, Inc. | |
| 25 | Steve Robbins | " " " | Plant planning |
| | Lou Cox | Asst. Chief, Law Enf. Div. ISCD | Enforcement Prob. |
| | Reid Troutman | Warden, Ill. Conserv. Dept | " " |
| 26 | Goffrey Hughes | Executive Secretary, S.I.I. | |
| | Merritt Finney | Herrin, Illinois | Courtesy |

| <u>Date</u> | <u>Name</u> | <u>Title</u> | <u>Purpose of Visit</u> |
|-------------|----------------------|---|-----------------------------------|
| Oct. | | | |
| 27 | Gordon O. Cech | St. Dist. Forester, Havana, Ill. | Courtesy |
| 28 | Tom Moffield | Carbondale, Illinois | Courtesy |
| 29 | Roy Carlson | F.W.S., Lower Souris Refuge | Transfer of Prop. |
| 31 | Ray Hubbs | Herrin Chamber of Commerce | Courtesy |
| | Oren Drew | Illinois Telephone Company | Phone Instal. |
| Nov. | | | |
| 3 | Marshall Stinnett | F.W.S. - USGMA | Enforcement Prob. |
| 7-12 | Andy Feil | NPS, Park Planner, Phil., Pa. | Master Development Plan, |
| 8 | Winton Walkup | Illinois Central Railroad | DEvils Kitchen./ |
| | Jack Frost | " " " | - Industrial Leasing |
| | Tom Gage | " " " | |
| | Mr. Murdaugh | " " " | |
| | V. T. Baker | Gen. Services Administration | |
| | Mr. Vincent | " " " | - Industrial Leasing |
| | E. Pease | " " " | |
| 15 | Oren Drew | Gen. Telephone of Illinois | PBX installation |
| 15 | C. R. Risling | Chief Eng., Ill. Elec. & Gas Co. | Gas Line Right of way |
| 15-16 | Dr. Robert McCormick | - Civil Service Comm. | Job Analysis |
| 21 | Loren Bonde | F.W.S. - USGMA | Law Enf. Assignment |
| | Sam Ehrlich | Plt. Mgr., Univ. Match Corp. | Relocation of Test. Area |
| | Goffrey Hughes | Executive Secretary, S.I.I. | Courtesy |
| 21-26 | E. Donald Smith | F.W.S., Asst. Reg. S'visor G.M. | Waterfowl Censussing |
| 22 | T.V. Setliff | Armed Services Tech. Info. Agency, Dayton, Ohio | - Igloo Storage |
| | R. Cooksey | Warden, Ill. Dept. Cons. | Prosecute Violations |
| 25 | Herman Bearden | | Re: Moving FAM Bldg. |
| | D. D. Wright | | " " " " |
| 28 | Marshall Stinnett | F.W.S. - USGMA | Law Enf. Problems |
| | Ava Baker | Gen. Services Administration | - Industrial Storage |
| | Andrew Cochran | " " " | |
| 30 | Donald Montgomery | United Air Lines | Courtesy |
| Dec. | | | |
| 2 | Ray Hubbs | Herrin Chamber of Commerce | Courtesy |
| 6 | Chas. Todd | Todd Laundries, St. Louis | Building Rental |
| | Goffrey Hughes | Executive Secretary, S.I.I. | Courtesy |
| 7 | Mr. Spaulding | State Fire Marshalls Office | Show Ed. Films to staff |
| 8 | James Brigham | Diagraph Bradley Industries | Courtesy |
| | Elmer Cordes | Ill. Central R.R., Kansas City Off. | Courtesy |
| | Joe Williamson | Consultant Engineer, Herrin | Wtr. Line Location |
| 9 | John Strasma | Counter Intelligence Corps, St. Louis | - Office Space |
| 9-11 | F. C. Gillett | F.W.S., Reg. Ref. Supervisor | Refuge Insp. |
| | Lee Testing | Biologist, Minn. Cons. Dept. | - Aerial photographs & Ref. Insp. |
| | E. L. Boeker | F.W.S., Ref. Pilot Biologist | |
| 10 | Ross Hanson | F.W.S., Pilot-Agent | - Waterfowl census & Courtesy |
| | J. Donald Smith | F.W.S., Asst. Reg. S'visor, G.M.) | |

| <u>Date</u> | <u>Name</u> | <u>Title</u> | <u>Purpose of Visit</u> |
|-------------|------------------------|--|-------------------------|
| Dec. | | | |
| 10 | Art Hawkins | F.W.S., Flyway Coordinator, R.O. | Refuge Visit |
| | Mr. Perrett | Canadian Wildlife Service | Visit Refuge |
| | Mr. Monroe | " " " | " " |
| | Forrest Lee | Wildlife Mgt. Biol., Minn. Cons. Dept. | -Visit Refuge |
| 12 | Marshall Stinnett | F.W.S. - USGMA | Law Enforcement |
| | Joe Hopkins | F.W.S. - USGMA | " " |
| 16 | Norl Hamilton | Olin-Mathieson Corporation |) Industrial Lease |
| | Dr. Crosby | " " " | |
| | Mr. Lindsay | " " " | |
| | F. Olson | Liberty Powder Company | |
| | Mr. Christianson | General Mills, Inc., Mpls. | |
| | Ray Karinen | " " " " |) Public Road 14g |
| | Goffrey Hughes | Executive Secretary, S.I.I. | |
| | Mr. Wilke | Diagraph-Bradley Industries | |
| | C. K. Gibbens | Cent. Ill. Power & Ser. Co. | |
| | Lee Settlemaier | State Hiway Dept. | |
| 20 | Mr. & Mrs. Pete Carter | F.W.S., Upper Miss. Refuge | Courtesy |
| 21 | Jack Castaglia | Ill. Inspection Bureau | Fire Ins. Rates |
| 22 | W. Winstead | Kroger Grocery & Baking Co. | Bldg. lease |

Refuge Participation

Sept.

- 1 Stiles attended monthly meeting of C.O.S.A.
- 13 Meneese on official detail to Granite City, Ill., Engineering Depot to inspect surplus equipment.
- 16 Crawford and Campbell to E. Alton, Ill. to meet with Olin-Mathieson personnel on lease.
- 21 Crawford and Stiles met with Burwell, Gillett and 8 members of Corps of Engineers staff, St. Louis, Missouri.
- 20-23 Manke and Sheffield served as Conservation instructors at West Frankfort Day School Outdoor Camp.
- 24 Crawford & Sheffield and wives guest of C.O. Yacht Club at annual barbeque.
- 26 Manke attended monthly meeting Williamson County Soil Conservation District Board of Directors Meeting.
- 26 Crawford & Sheffield attended monthly board meeting, Southern Ill. Incorporated at Johnston City.

Oct.

- 3 Manke gave talk and showed refuge slides to mens class, Marion Church of the Latter Day Saints.
- 4 Stiles met with State Park personnel at Giant City, Re: Little Grassy lease plans.
- 6 Staff attended monthly meeting of C.O.S.A.
- 11 Staff attended law enforcement meeting with State personnel at Giant City State Park.

Oct.

- 13 Stiles attended C.O.S.A. board meeting.
- 18 Crawford, Stiles & Sheffield met in Presidents Office, S.I.U.
Re: Little Grassy lease.
- 19 Stiles attended monthly meeting of Jackson County Sportsmens Club.
- 20 Crawford & Hunter attended So. Ill. Labor Council meeting at
So. Acres.
- 24 Crawford & Sheffield attended S.I.I. board meeting.
- 24 Manke attended board meeting Williamson County Soil Conservation
District.
- 26 Crawford, Manke and Stiles attended opening session of Illinois
technical Foresters Association fall meeting, Benton.
- 26 Crawford attended Herrin Chamber of Commerce honorary luncheon
for Mr. Campbell.
- 26 Crawford, Manke and Stiles dinner guests at meeting of Agriculture
Committee, S.I.I. at Benton.
- 26-27 Stiles attended business meeting and fire prevention sessions of
Illinois Technical Forester's Association, Jonesboro.
- 31 Crawford, Manke, Stiles and wives guests of annual banquet,
American Field National Quail Futurity, Carbondale.

Nov.

- 3 Crawford, Manke and Stiles attended monthly meeting C.O.S.A.
- 9 Manke attended public hearing called by River Basin Studies,
New Athens, Ill.
- 9 Crawford attended honorarium dinner for Mr. Campbell given by
Marion Chamber Commerce.
- 10 Stiles attended board meeting, C.O.S.A.
- 11 Crawford and Stiles dinner guests and speakers at Sangamo
Foremans Club, West Frankfort Country Club.
- 12 Crawford, Sheffield and Stiles attended dedication and tour of
U.S.F.S. - S.I.U. Wood Utilization Pilot Plant.
- 13 Staff attended Sangamo Electric "open house".
- 19 Crawford conducted kids from Hurst Bush Childrens Home on tour of
refuge.
- 21 Sheffield attended board meeting, S.I.I.
- 25 Smith and Stiles made aerial inspection and photographs of
Black River Area, New Harmony, Indiana.
- 28 Crawford, Manke, Stiles and wives dinner guests of American Brittany
Spaniel Club, Carbondale.
- 30 Crawford attended dinner meeting of Iu. Regional Brittany Club.

Dec.

- 1 Manke and Stiles attended monthly meeting of C.O.S.A.
- 5 Stiles attended meeting of Carbondale Chamber of Commerce,
Re: Midwest Sports Show, St. Louis.
- 7 Crawford presented refuge slide talk at Marion Veterans Hospital.
- 8 Crawford to Urbana, Ill. to attend State Civil Defense Fire
Committee Meeting.

Dec.

- 8 Stiles to Black River, Indiana to survey as possible refuge.
- 9-13 Bush assisting on trapping and banding, "Operation Goose", Horseshoe Lake.
- 15 Crawford and Hunter attended So. Ill. Labor Council Meeting, Crawford guest speaker.
- 19 Manke attended board meeting - Williamson County Soil Conservation District.
- 23 Crawford and Stiles guest of Sangamo Electric annual Christmas dinner.
- 31 Crawford, Sheffield and Stiles attended monthly board meeting of S.I.I. and "Sink or Swim" meeting called by Congressman Gray at West Frankfort.

Fishing

Angling success during the period has already been mentioned in a previous section of this narrative.

Hunting

For the first time in 3 years we heard few complaints from the nimrods. In view of the lower than normal squirrel population on the refuge this year, a controlled squirrel hunt was not held. The discontinuance of this very successful experiment in public relations brought few repercussions from past participants. A simple statement that the refuge squirrel population was not at a level to provide the quality of hunting enjoyed in previous years seemed to amply satisfy all inquiries.

Dove hunting was good to excellent during the first 10 days and provided fine sport for the comparatively few willing to invest heavily in ammunition.

Quail and rabbit hunting was of a quality at least 50% better than since 1951. The died-in-the-wool quail hunter found the field pretty much to himself this year. The appeal of bagging a 9 pound honker from a heated blind is fast changing "uplanders" to water-fowlers in this locality. It would seem to us, the Author of these stirring lines -

...."Its not the trophy, but the race
Its not the quarry, but the chase--"

was writing to, or for, a faction far above the clientele of the commercial goose club of 1955. For them, "the race" and "the chase" is practically non-existent.

Hunting success, on waterfowl using this refuge, was definitely above average this year. From daily bag checks and general observation, it was first thought only goose hunting would be exceptionally good. Final tabulation of all kill measure data showed a surprisingly successful duck season also.

Duck stamp sales records for the 5 local towns have been kept for the past four years. The 1955 stamp sales for the 5 towns was up 23% over last year and up 5% over any previous year. A guess would be that fully 1/4 of the duck stamps purchased locally were purchased after the season was half over. We personally know four individuals who bought stamps only after the geese began working to all parts of the countryside and hunter scuttlebutt convinced them bagging a goose, even on the public shooting area, would be a simple matter.

In an effort to devise a better means of estimating kill figures on waterfowl, several methods were used in computing this years bag. Three are listed below. We do question, however, the statistical soundness and still feel a need for a formula that could be applied universally throughout the flyway.

A 12% crippling loss is used on all the estimates.

1. Kill estimate based on daily bag check of 339 hunters plus actual reported club kill.

Formula: Daily Ave. Kill x No. of Hunts x No. Stamps Sold + 12% Crippling Loss = Total Kill.

Geese - $.141 \times 10 \times 3172 + 1083 + 668 = 6224$

Ducks - $.224 \times 15 \times 3172 + 80 + 1287 = 12027$

2. Kill estimate based on season bag check (88 hunters) plus Club Kill.

Formula: Ave. Season Kill x No. Stamps Sold + Club Kill + 12% Crippling Loss = Total Kill.

Geese - $.932 \times 3172 + 1083 + 485 = 4524$

Ducks - $5.34 \times 3172 + 80 + 2032 = 18970$

3. Kill estimate based on percent of population buying duck stamps in 5 area towns (9.3) x population of 23 towns and communities within a 15 mile radius of refuge x Ave. season kill as computed from 90% canvass of stamp buyers in town of Cambria.

Formula: % of Population buying stamps x Town Population in 15 mile radius x Ave. Season Bag of Cambria Canvass + Club Kill + 12% Crippling Loss = Total Kill.

Geese - $9.3\% \times 70793 \times .575 + 1083 + 584 = 5453$

Ducks - $9.3\% \times 70793 \times 4.15 + 80 + 3278 = 30464$

It can be readily seen that although the goose kill figure does not vary too greatly, the duck kill is certainly variable. An average of all three formulae shows a goose kill and crippling loss of 5400; and a duck kill of 20,485. From general observation and comparison with other years, these figures seem rather close. The 1955 season kill on geese then would be estimated at between 5400 and 6000 birds; on duck between 16,000 and 20,000 birds.

Violations

The delayed opening and earlier closing of the Southern Illinois goose season combined with a record goose population brought out the violaters in force this season. Some excellent cooperation was given by U. S. Game Management Agent, Rex Tice, in teaching our enforcement staff the fine points of the law enforcement game. His able assistance on patrols, prosecution and interpretation of regulations was also much appreciated.

Game violation cases apprehended by refuge agents during the period were as follows:

| <u>Date</u> | <u>Violator</u> | <u>Type of Violation</u> | <u>Disposal</u> |
|-------------|-----------------|--|--|
| 10-16-55 | L. DeBerry | Fed.-Shooting goose out of season | Fine & Costs - \$104.00 |
| 11- 3-55 | C. Hilliard | Fed.-Shooting at ducks after closing hour | Minor - No prosecution |
| 11- 3-55 | R.D. Jones | Fed.-Shooting at ducks after closing hour | Minor - No prosecution |
| 11- 3-55 | R. Jones | Fed.-Shooting at ducks after closing hour | Minor - No prosecution |
| 11- 7-55 | P. Ramsey | State-Training dogs out of season with loaded shotgun | \$29.00 |
| 11-15-55 | E. Casper | State-Transporting loaded gun in car | \$29.00 |
| 11-17-55 | T. Osment | State-Transporting loaded gun in car | Turned over to St. Warden -No pros.??? |
| 11-19-55 | J. Plater | State-Transporting loaded gun in car | \$29.00 |
| 11-19-55 | E. Craig | State-Transporting loaded gun in car | \$29.00 |
| 11-17-55 | J. Yates | Fed.-Taking waterfowl without license or duck stamp | \$54.00 |
| 11-17-55 | G. Ingram | Fed.-Hunting waterfowl without license or duck stamp, unplugged gun & after shooting hours | \$154.00 |

| <u>Date</u> | <u>Violator</u> | <u>Type of Violation</u> | <u>Disposal</u> |
|-------------|-----------------|---|-----------------|
| 11-27-55 | G. Sherman | Fed.--Shooting at geese after closing hour | \$29.00 |
| 11-26-55 | R. Hendricks | Fed.--Attempting to take waterfowl without duck stamp | \$29.00 |
| 12-10-55 | N. Harrison | Fed.--Hunting waterfowl with unplugged gun | \$29.00 |
| 11-19-55 | R. McRoy | Fed.--Shooting at waterfowl after closing hour | \$29.00 |

Other apprehensions, during the period, of violators resulting from public use on the refuge are placed in the general listing as follows. No prosecutions were made.

| <u>Violation</u> | <u>Number</u> |
|--|---------------|
| Training dogs after close of refuge dog training season. | 4 |
| Boats left in unauthorized areas of refuge. | 15 |
| Rifle shooting in unauthorized area. | 4 |
| Disorderly conduct | 4 |
| Trespassing on beach | 4 |
| Reckless operation of boats | 3 |
| Public nuisance | 1 |

In addition, we list vandalism to refuge property occurring during the period.

One 15 foot pine tree cut in picnic area - presumably for use as Christmas tree.
 Rather extensive breaking off of pine and cedar boughs in recreation areas for use as greenery.
 Wooden privy shield used for firewood.
 Two cable clamps stolen from gates.
 Refuge gates removed from hangers.
 Three truckloads of rubbish dumped on refuge.
 Parking area sign stolen.
 Lock broken from barricade.
 Pump handle broken.

VII OTHER ITEMS

Photographs:

This narrative is 'sans photos'- the photographers have been busy at work other than photography. We shall endeavor to lighten the heavy reading with a few photos in the next edition.

Personnel:

A long discussed administrative reorganization of the dual operation here at Crab Orchard finally received the necessary blessings and was effected September 6, 1955.

The refuge administrative staff, of course, had a certain amount of trepidation as to how the field operating staffs of the former industrial and refuge units would take to the joining of forces. Our fears were unwarranted. It, of course, took a little time to get the job done and quite a few personnel meetings to outline the operational functioning of individuals and departments, but we find that time will give us a smooth operating team.

We find we have an operating staff of men with many and diversified skills much required to operate our activities of boiler plants, water and sewer plants, fire departments, railroad, building and equipment operation and maintenance.

With the reorganization Roy Campbell, Industrial Manager, retired from the Service, effective January 7, 1956. A post card from him finds him studying the industrial ills of Mexico. The refuge staff held a small gathering for him on January 5, and presented him with a matched pen and pencil set and a pocket secretary. One of our two legged secretaries suggested she would gladly be his pocket secretary for a trip to Mexico.

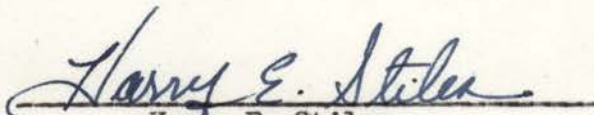
On December 2, 1955, Ralph Alexander, our Foreman of Construction and Maintenance, resigned to take over as Plant Manager of the new Dura-Crate Company that established in the refuge.

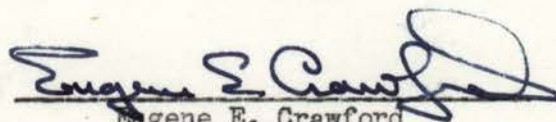
Personnel changes necessitated by the reorganization are reflected in the listing of refuge personnel.

We are still without incumbents in our Project Engineer and Refuge Manager Trainee positions. It is hoped that these vacancies can be filled during the next report period.

Many individuals have made possible the preparation of this narrative report. They have done a good job of telling the Crab Orchard story. Without the everyday devotion to the myriad tasks asked of them this narrative would lack reportable material; - hence, our respect and thanks go to each individual for the personal contribution they have made in making Crab Orchard a source of bread and butter employment for nearly 2000 of their fellow citizens, a recreational mecca for local peoples and visitors, and an attractive and useable habitat for wildlife.

Respectfully submitted,


Harry E. Stiles
Refuge Manager


Eugene E. Crawford
Project Manager

Date submitted _____

Approved by Regional Office  2/8/56.

WATERFOWL

REFUGE Crab Orchard

MONTHS OF Sept. Thru Dec., 19 55

| (1) Species | (2) Weeks of reporting period | | | | | | | | | |
|------------------------|----------------------------------|-------|-------|-------|-------|--------|--------|---------|---------|---------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Swans: | | | | | | | | | | |
| Whistling | | | | | | | | | | |
| Trumpeter | | | | | | | | | | |
| Geese: | | | | | | | | | | |
| Canada | --- | --- | --- | 70 | 9,170 | 21,700 | 63,168 | 163,100 | 242,830 | 382,200 |
| Cackling | | | | | | | | | | |
| Brant | | | | | | | | | | |
| White-fronted | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Snow | --- | --- | --- | --- | --- | 84 | 238 | 1,757 | 7,392 | 13,300 |
| Blue | --- | --- | --- | --- | --- | 98 | 140 | 1,330 | 3,695 | 8,400 |
| Other Hutchin's | --- | --- | --- | --- | --- | --- | --- | 7 | 252 | 280 |
| Ducks: | | | | | | | | | | |
| Mallard | --- | --- | --- | --- | 1,127 | 119 | 4,900 | 56,000 | 100,541 | 532,000 |
| Black | --- | --- | --- | --- | 49 | 70 | 491 | 3,598 | 4,935 | 6,300 |
| Gadwall | --- | --- | --- | --- | --- | 21 | 112 | 77 | 70 | 1,722 |
| Baldpate | --- | --- | --- | --- | 1,645 | 6,650 | 9,450 | 4,669 | 812 | 140 |
| Pintail | --- | --- | --- | 133 | 77 | 231 | 1,596 | 2,520 | 2,240 | 539 |
| Green-winged teal | --- | --- | --- | --- | --- | 28 | 280 | 385 | 154 | --- |
| Blue-winged teal | --- | --- | 21 | 427 | 6,650 | 1,750 | 196 | 553 | 231 | --- |
| Cinnamon teal | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Shoveler | --- | --- | --- | --- | 35 | --- | --- | 49 | 112 | --- |
| Wood | 1,400 | 2,100 | 2,100 | 2,100 | 1,400 | 1,400 | 700 | 350 | 175 | 70 |
| Redhead | --- | --- | --- | --- | --- | --- | 266 | 364 | --- | 2,989 |
| Ring-necked | --- | --- | --- | --- | --- | --- | --- | --- | --- | 6,825 |
| Canvasback | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1,449 |
| Scaup, Lesser | --- | --- | --- | 7 | --- | 70 | 406 | 2,555 | 700 | 11,228 |
| Goldeneye | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bufflehead | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ruddy | --- | --- | --- | --- | --- | --- | --- | 77 | --- | 1,498 |
| Other Hooded Merganser | --- | --- | --- | --- | --- | --- | --- | --- | 35 | 749 |
| American Merganser | --- | --- | --- | --- | --- | --- | --- | --- | --- | 7,378 |
| Coot: | --- | --- | --- | 35 | 70 | 1,610 | 5,600 | 11,550 | 15,400 | 21,000 |

3-7150a
Cont. NR-1
(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

| REFUGE | MONTHS OF | | | | | | | | Thru | | |
|------------------------|----------------------------------|---------|---------|---------|---------|---------|---------|---------|---|--|-------|
| Grab Orchard | Sept. | | | | | | | | 40- | Dec. | 19 55 |
| (1) Species | (2) Weeks of reporting period | | | | | | | | (3) Estimated waterfowl days use | (4) Production Broods: Estimated seen : total | |
| | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | | | |
| Swans: | | | | | | | | | | | |
| Whistling | | | | | | | | | | | |
| Trumpeter | | | | | | | | | | | |
| Geese: | | | | | | | | | | | |
| Canada | 452,165 | 409,500 | 410,900 | 326,116 | 315,000 | 242,200 | 198,100 | 193,186 | 3,429,405 | 10 | 50 |
| Cackling | | | | | | | | | | | |
| Brant | | | | | | | | | | | |
| White-fronted | | 42 | | | | | | | 42 | | |
| Snow | 14,000 | 14,000 | 7,700 | 6,706 | | | | | 65,177 | | |
| Blue | 7,700 | 6,300 | 3,500 | 2,422 | | | | | 33,585 | | |
| Other Hutchin's | 301 | | | | | | | 7 | 847 | | |
| Ducks: | | | | | | | | | | | |
| Mallard | 595,000 | 700,000 | 525,000 | 245,000 | 196,000 | 52,500 | 210,000 | 291,535 | 3,509,722 | 1 | 8 |
| Black | 8,400 | 9,891 | 14,700 | 53,200 | 56,000 | 1,680 | 7,000 | 35,553 | 201,867 | | |
| Gadwall | 770 | 2,450 | 539 | 119 | | | | | 5,880 | | |
| Baldpate | 231 | 189 | 98 | | | | 7 | | 23,891 | | |
| Pintail | 455 | 2,450 | 1,960 | 210 | | | | 56 | 12,467 | | |
| Green-winged teal | | | | | | | | | 847 | | |
| Blue-winged teal | | | | | | | | | 9,828 | | |
| Cinnamon teal | | | | | | | | | | | |
| Shoveler | 21 | 77 | 28 | | | | | | 322 | | |
| Wood | 28 | | | | | | | | 11,823 | 7 | 50 |
| Redhead | 147 | 210 | 147 | 441 | | | | | 4,564 | | |
| Ring-necked | 791 | 1,050 | 1,400 | 1,400 | 469 | | 105 | 14 | 12,054 | | |
| Canvasback | 49 | | | | | 819 | | | 2,317 | | |
| Scaup, Lesser | 2,450 | 4,200 | 3,150 | 7,000 | 4,200 | 105 | | | 36,071 | | |
| Goldeneye | | | | | 14 | 77 | 1,400 | 168 | 1,659 | | |
| Bufflehead | | | 14 | 14 | 35 | | | | 63 | | |
| Ruddy | 119 | 84 | 112 | 21 | | | | | 1,911 | | |
| Other Hooded Merganser | 2,688 | 3,500 | 5,600 | 3,500 | 4,200 | 875 | 4,900 | 1,008 | 27,055 | | |
| American Merganser | 882 | 1,064 | 3,850 | 17,500 | 17,500 | 56,000 | 63,000 | 9,380 | 176,554 | | |
| Coot: | 28,000 | 46,900 | 21,000 | 3,500 | 1,400 | 1,050 | 1,050 | 21 | 158,186 | | |

(over)

| | (5) Total Days Use | (6) Peak Number | (7) Total Production |
|-------|-----------------------|--------------------|-------------------------|
| Swans | : | : | : |
| Geese | 3,529,056 | 64,575 | 50 |
| Ducks | 4,038,895 | 103,595 | 58 |
| Coots | 158,186 | 6,700 | : |

SUMMARY

Principal feeding areas Area #2

Principal nesting areas Area #2

Reported by Lee Eush

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).

3-1754

Form NR-1A

(Nov. 1945)

MIGRATORY BIRDS
(other than waterfowl)

Refuge

Grab OrchardMonths of Sept

thru

Dec. 194 5

| (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 | 2 | 10-18 | 12 | 11-10 | 5 | 12-19 | | | | 15 |
| Pied-billed Grebe | Breeds | | | | | | | | | 100 |
| White Pelican | 2 | 10-7 | 15 | 10-11 | | 10-11 | | | | 15 |
| Double-crested Cormorant | Breeds ? | | 500 | 9-15 | | | | | | 500 |
| Great Blue Heron | Breeds | | 300 | 10-14 | Still present at end of period | | | | | 400 |
| Common Egret | Post-breeding Mig. | | 500 | 10-14 | 2 | 11-19 | | | | 500 |
| Snowy Egret | 1 | 9-21 | | Rare post-breeding Mig. | | | | | | 1 |
| Little Blue Heron | Post-breeding Mig. | | 200 | 9-1 | 2 | 10-21 | | | | 200 |
| Green Heron | Breeds | | 400 | 9-10 | 2 | 10-20 | | | | 400 |
| King Rail | Breeds | | 50 | 9-10 | 1 | 10-30 | | | | 100 |
| Sora | 1 | 9-6 | 25 | 10-10 | 1 | 10-22 | | | | 50 |
| II. Shorebirds, Gulls and Terns: | | | | | | | | | | |
| Killdeer | Breeds | | 2500 | 9-20 | Still present in limited numbers | | | | | 3000 |
| Golden Plover | 11 | 11-4 | 11 | 11-4 | (uncommon) | | | | | 11 |
| Black-bellied Plover | 2 | 9-22 | | | 1 | 11-4 | (rare) | | | 2 |
| Woodcock | Breeds in limited numbers | | | | | | | | | 20 |
| Wilson's Snipe | 1 | 9-26 | 100 | 10-1 | 1 | 11-10 | | | | 100 |
| Spotted Sandpiper | Breeds | | 100 | 9-5 | 1 | 9-27 | | | | 150 |
| Greater Yellowlegs | 1 | 9-21 | 5 | 9-30 | 1 | 11-10 | | | | 15 |
| Lesser Yellowlegs | 2 | 9-22 | 8 | 10-7 | 1 | 10-8 | | | | 10 |
| Pectoral Sandpiper | 37 | 9-21 | 150 | 9-22 | 11 | 11-10 | | | | 300 |
| Least Sandpiper | 11 | 9-21 | 15 | 10-7 | 10 | 10-21 | | | | 75 |
| Red-backed Sandpiper | 2 | 11-10 | 7 | 11-17 | | | | | | 15 |
| Dowitcher | 7 | 10-14 | 10 | 11-1 | 3 | 11-14 | | | | 25 |
| Semi-palmated Sandpiper | 8 | 9-21 | 18 | 11-10 | | | | | | 50 |
| Western Sandpiper | 1 | 9-22 | | | 1 | 10-7 | (rare) | | | 2 |
| Herring Gull | 15 | 10-7 | 25,000 | 12-15 | Still present | | | | | 25,000 |
| Ring-billed Gull | 5 | 10-14 | 10,000 | 12-15 | " " | | | | | 10,000 |

| (1) | (2) | (3) | (4) | (5) | (6) |
|--------------------------------|--------------------|-------|--------------------|--------|-----------------|
| III. Doves and Pigeons: | | | | | |
| Mourning dove | Permanent resident | 2000 | 9-15 | | 2500 |
| White-winged dove | | | | | |
| IV. Predaceous Birds: | | | | | |
| Bald Golden eagle | 1 | 11-10 | 11 | 12-15 | Winter resident |
| Screech Screech Owl | Permanent resident | | | | 12 |
| Horned owl | " | " | | | 50 |
| Barred Barred Owl | " | " | | | 20 |
| Barn Sparrowhawk | " | " | | | 25 |
| Crow | " | " | | | 200 |
| Cooper's Hawk | " | " | In limited numbers | | 2000 |
| Sharp-shinned Hawk | " | " | Uncommon | | 10 |
| Red-tailed Hawk | " | " | | | 4 |
| Red-shouldered Hawk | " | " | | | 200 |
| Broad-winged Hawk | Breeds | | 1 | 11-30 | 20 |
| Rough-legged Hawk | 1 | 11-10 | 1 | 12-15 | Uncommon |
| Osprey | Breeds | | 8 | 10-20 | 1 |
| | | | | Red By | 2 |
| | | | | | 4 |
| | | | | | 8 |

INSTRUCTIONS

- (1) Species: Use the correct names as found in the A. O. U. Checklist, 1931 ~~Lee Bush~~ 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

1613

Refuge Crab Orchard

Months of Sept.

thru December, 19 55

| (1) Species | (2) Density | | (3) Young Produced | | (4) Sex Ratio | (5) Removals | | | (6) Total | (7) Remarks |
|-----------------|--|----------------------|----------------------------|--------------------|---------------------|-----------------|---------------------|-----------------|--|---|
| Common Name | Cover types, total acreage of habitat | Acres per Bird | Number broods obs'd. | Estimated Total | Percentage | Hunting | For Re- stocking | For Research | Estimated number using Refuge | Pertinent information not specifically requested. List introductions here. |
| Bob-white Quail | Cultivated fields, upland brushland, woodlots & pasture, Area I & III 15,000 acres | 20 | -- | | 5M - 3F | 250 | -- | | 500 | |
| | Area II - 19,000 | 3.9 | -- | 5,000 | 4 M -- 3 F | -- | -- | -- | 5,000 | |
| China Pheasant | Same as above, Area II - - - - 15,800 Acres | 316 | -- | -- | -- | -- | -- | -- | 50 plus | refugees from Nat'l. Springer trials. |
| | Area I & III 8200 acres | -- | -- | -- | -- | -- | -- | -- | 30 | Introduction on 3 islands on C.O. Lake - State of Ill. and Sou. Ill. University |

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 Crab Orchard Calendar Year 1955

| (1) Species | (2) Density | (3) Young Produced | (4) Removals | | | | (5) Losses | | | (6) Introductions | (7) Estimated Total Refuge Population | | (8) Sex Ratio |
|----------------------|--|--------------------------|-----------------|---------------------|------|-----------------|---------------|---------|----------------|----------------------|--|---------------------|---------------------|
| | | | Hunting | For Re- stocking | Sold | For Research | Predation | Disease | Winter Loss | | At period of Greatest use | As of Dec. 31 | |
| Common Name | Cover types, total Acreage of Habitat | Number | | | | | | | | Number | Source | | |
| White-tailed Deer | Cultivated fields, up- land brush & woodlots, bottomland woodland and upland pasture - 35,000 | 100 | - | - | - | - | - | 10* | 15** | - | 600 | 600 | 1 M - 1.5 F. |

Remarks:

- * - poachers
- ** - Highway kill and dogs.

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.

116000

3-1756
Form NR-6
(April 1946)

FISH

Refuge Grab Orchard

Year 1944 1955

| Species | Relative Abundance | Sport Fishing | | Commercial Fishing | | Restocking | | Number removed for Restocking |
|--|--------------------|------------------|--|--------------------|--------------|----------------|--------------|-------------------------------|
| | | Man days Fishing | Number Taken | No. of Permits | Pounds Taken | Number Stocked | Area Stocked | |
| L. M. Bass ////////// common ////////// ----- | | | 100,000,000 <u>% Total Catch</u> | | | | | |
| L. M. Bass | common | ----- | 15% | ----- | ----- | 593,775 | C.O. Lake | |
| White Crappie | " | - - - | 25% 25% | | | | | |
| Black Crappie | " | - - - | 15 % | | | | | |
| Bluegill | " | - - - | 5 % | | | | | |
| Other sunfishes | " | - - - | 5 % | | | | | |
| Bullheads | " | - - - | 15 % | | | | | |
| Carp | abundant | - - - | 16 %) | 5 | 248 | | | |
| Buffalo | rare | - - - | 1 %) | | | | | |
| Drum | common | - - - | 2 % | | | | | |
| Warmouth bass | " | - - - | 1 % | | | | | |
| | 125,250 | | 100 % | | | | | |
| Snapping Turtles | ----- | ----- | ----- | 1 | 2500 | | | |

REMARKS:

3-1757
Form NR-7
(April 1946)

PLANTINGS
(Marsh - Aquatic - Upland)

Refuge Crab Orchard Year 194⁵⁵

| 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 |
|---------------------------------|---|-----------------------------|--|-------------------------------|------------------|----------|---------------|--|
| Sago Pondweed, P. pectinatus | Wolf creek Bay -18 AII Farm Ponds | 40#/acre | 5 acres shoreline & ponds | 200 # seed | April | ?? | | Expect low survival due to drawdown & drouth |
| Sericea Lespedeza | Area II | 30#/acre | 3 mi. 16'hedge | 200 lbs. | May | 90% | hard seed | contour guides |
| Rosa Multiflora | Area II | 18" space | 1000 yd fence | 2000 1-0 plants | Mar-Apr. | 100% | | Farm pond fences. |
| S-Leaf Pine, Pinus eschuata | Area II | 6'x6' space | 5 acres | 5000 1-0 plants | Mar. | 90% | drouth | |

TOTAL ACREAGE PLANTED:

Marsh and aquatic 5 acres
Hedgerows, cover patches 3 mi. 16' wide
Food strips, food patches 5 acres
Forest plantings 5 acres
Rose Fence -- 3000 ft.

CULTIVATED CROPS

Page 1 of 10

Refuge Crab Orchard

Year 1955

| Permittee (If farmed by refuge personnel, so indicate) | Permit No. | Unit or Loca- tion | Crops Grown | Avg. Yield per Acre | Permittee's Share | | Government's Share or Return | | | | Compensatory Services, or Cash Revenue |
|--|---------------|-----------------------------|--------------------|------------------------------|----------------------|--------------------|------------------------------|-----|----------------------|-------|--|
| | | | | | Acres | Bu. Har- vested | Harvested Acres | Bu. | Unharvested Acres | Bu. | |
| D.C. Samuel | C.O.#130 | A-1 | Corn | 32 | 44.4 | 1421 | 2.6 | 90 | 19.5 | 624 | 55.8 Ton Limestone |
| | | A-7 | Soybeans | 10 | 42. | 447 | - | - | - | - | 15.15 T. R-Phos. |
| | | A-9, except | Oats | 23 | 29. | 667 | - | - | - | - | 4.85 T. Mur. Potash |
| | | SW 1/4, SW 1/4, Sec | Wheat | 11 | 28. | 299 | - | - | - | - | 5.8 T. Sup. Phos. |
| | | 20, T9S, R2E | R-Top, Les. | 1.2T | 25. | 29.4 Ton | - | - | 43. | - | Soil-Improvement |
| | | | Sw. Clover | - | - | - | - | - | 46 | - | Green Manure |
| | | | Fallow | - | - | - | - | - | 17 | - | 291 lb Gr. Leg. seed |
| Vernon Howell | C.O.#170 | A-2 | Corn | 14 | 6. | 84 | - | - | 3 | 42 | .75 T. 3-Sup. Phos. |
| | | | Soybeans | 3 | 9.5 | 29 | - | - | - | - | .75 T. Mur. Potash |
| | | | Tim-Lesp. | .77 T. | 11. 7x | 81.5 Ton | - | - | - | - | |
| | | | Red Clover | 1.35 T. | 9.5 | 12.8 Ton | - | - | - | - | |
| | | | Fallow | - | - | - | - | - | 14 | - | |
| W.G. Fleming | C.O.153 | A-3 | Corn | 40 | 37.4 | 1500 | - | - | 18.6 | 745 | 29.45 T. Limestone |
| | | A-10 | Soybeans | 17 | 47. | 793 | - | - | - | - | 10.32 T. 3-sup. Phos. |
| | | A-11 | Oats | 32 | 78. | 2488 | - | - | - | - | 8.7 T. Mur-Potash |
| | | | Sw-Clover | - | - | - | - | - | - | - | Green Manure - |
| | | | Red-Top, Tim. Les. | 1.1 | 49. | 51.6 Ton | - | - | - | - | 46# gr-leg. seed |
| | | | Fescue | 53 # | 12. | 640 # seed | - | - | 6. | 320 # | 100# Les. seed |
| | | | Fallow | - | - | - | - | - | 18. | - | |

Summary of Crops Grown:

Crop

Acreage

Permittee's Share
Acres Bushels

Government's Share

Total Revenue

Harvested

Unharvested

Acres

Bu.

Acres

Bu.

\$

See Page 10.

Interior Duplicating
Section, Wash.D.C.

DIRECTIONS FOR PREPARING FORM NR-8
CULTIVATED CROPS

Cultivated Crops Report Form NR-8 should be prepared on a calendar-year basis for all crops harvested or utilized during the calendar year and submitted with the December 31 refuge report.

Permittee - List each permittee separately. If lands of the refuge are farmed by refuge personnel or hired labor, this should be indicated in the Permittee column.

Permit No. - List the number of the Special Use Permit issued to the individual.

Use or location - The Unit No. or name specified in the Economic Use Plan should be listed in this column.

Crops Grown - A separate line of the form should be used for each crop grown by each permittee or by refuge personnel. This is important, since if each crop grown by each operator is not specifically enumerated, the report will be of no value for statistical purposes.

Average Yield per Acre - It is important that the average yield per acre of each crop grown by each operator should be shown.

Permittee's Share - Only the number of acres harvested or 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. It is requested that all crops harvested be reduced to bushels wherever possible, or, as in the case with the harvesting of seed such as that of sweet clover, alfalfa, bromegrass, etc., the total harvested crop in pounds may be shown. Timothy, alfalfa, or other hay harvested by the permittee should be shown on Form NR-10 and should not be shown in the Permittee's Share column.

Government's Share or Return - Harvested - Show the number of bushels harvested for the Government and the acreage from which this share is harvested, both for grain raised by refuge personnel and by permittees. Unharvested - show the exact number of acres of crops allowed to remain unharvested as food and cover for wildlife. An estimate of the number of bushels of grain that is available for the wildlife in such unharvested crops should be shown in the Bushels column.

Compensatory Services, or Cash Revenue - Show other services received by the Government in cooperative farming activities, the number of acres of food strips planted for wildlife, the amount of wildlife crops not otherwise reported that are planted by cooperators for the Service, or the cultivation of wildlife plantations. If the permit is on a fee basis, the total cash revenue received by the Service.

CULTIVATED CROPS

Page 2 of 10

Crab Orchard Refuge - 1955

| Permittee | Permit No. | Unit or Location | Crops Grown | Avg. Yield per Acre | Permittee's Share ; Bu. Harvested | Government's Share or Return : Harvested : UNharvested : Services, : Compensatory | | | | | |
|----------------|------------|------------------|---------------|---------------------|-----------------------------------|---|------|---------|------|------|-------------------|
| Arlie Cagle | 20318 | A-4 | Corn | 19 bu. | 20.6 | 391 | - | - | 10.4 | 198 | 7 T. Limestone |
| | | A-5 | Soybeans | 2 bu | 4.0 | 8 | | | 22.5 | | Goose Graze. |
| | | portion A-9, | Oats | 35 " | 12.49 | 35 | 1249 | - | - | 12.6 | ton R. Phosphate, |
| | | | Wheat | 7 | 10. | 68 | | - | - | 3.28 | T. Mur. Potash |
| | | | Sw. Clover | | | | | | 6 | - | Green Manure |
| | | | Gr. Legume | | | | | | 27. | - | Soil Improvement |
| | | | Fallow | | | | | | 17 | | |
| E. T. Harrison | 20360 | A-6 | Corn | 13 | 42. | 546 | - | - | 21 | 273 | 12.62 T. R. Phos |
| | | | Soybeans | 7 | 30. | 211 | | | | | 46# Gr. Legume |
| | | | Oats | 17 | 61. | 1031 | - | - | - | - | seed |
| | | | Tim-Lesp. Rye | .56 Ton | 4.0 | 2.24 Ton | - | - | 37 | - | Soil Improvement |
| | | | Rye | - | - | - | - | - | 10 | - | Gr. Manure |
| | | | Idle | - | - | - | - | - | 11 | | |
| | | A-8 | Corn | 43. | 36. | 1548 | - | - | 18 | 774 | |
| | | A-27 | Soybeans | 7 | 49. | 334 | - | - | - | - | Soil Improve.. |
| Eugene Stone | C.O.#287 | | Oats | 17. | 34. | 571 | - | - | - | - | Cover Crop |
| | | | Lesp. Seed | 75 lb. | 15. | 1125 lb. | 5. | 375 lb. | | | |
| | | | Sw. Clover | - | - | - | - | - | 23.0 | | Gr. Manure |
| | | | Tim-Lesp. | - | - | - | - | - | 9.5 | | Soil Improve. |
| | | | Tim-Lesp. | 1.6 Ton | 13. | 20.8 Ton | - | - | | | |
| | | | Fallow | - | - | - | - | - | 8. | | |
| | | | Corn | 29 bu. | 50.6 | 1467 | - | - | 25.4 | 737 | |
| | | | Wheat | 13 bu. | 21. | 280 | - | - | - | - | 26.78 Ton |
| L. J. Wohlwend | C.O.# 162 | A-12 | Oats | 23 | 21. | 485 | - | - | - | - | R. Phosphate |
| | | | Barley | 15 | 21. | 325 | - | - | - | - | 4. T. Potash |
| | | | Alfalfa | 1.6 T. | 7.5 | 11.8 T. | - | - | - | - | 64 bu. Rye |
| | | | Red Clover | .87 T. | 16. | 13.97 T. | | | | | |
| | | | R.Cl. seed | 90 lb. | 6. | 540 lb. | 2. | 180 lb. | | | |
| | | | R. Clover | - | - | - | - | - | 10. | | Soil Improve. |
| | | | Sw. Clover | - | - | - | - | - | 7.5 | | Gr. Manure |
| | | | Fallow | - | - | - | - | - | 23. | | |

CULTIVATED CROPS

Page 2 of 10

Crab Orchard Refuge - 1955

| Permittee | Permit No. | Unit or Loca- tion | Crops Grown | Avg. Yield per Acre | Permittee's Share | | Government's Share or Return | | | | Compensatory, Services, or Cash Returns |
|-----------------------|----------------------|--------------------|----------------------|---------------------|-------------------|--------------------|------------------------------|-------------------|----------------|------------|---|
| | | | | | Acres | Bu. Har- vested | Harvested Acre: Bu. | Unharvested Acres | Bu. | | |
| H. Broeking | C.O. 119 | A-13, (Portion) | Corn | 55 | 18. | 990 | -- -- | 9. | 495 | | 16.45 Ton R.-Phos. |
| | | | Soybean | 18. | 33. | 593 | -- -- | -- | --- | | 206 lb. gr-legume |
| | | | Oats | 33 38 | 27 | 1023 | -- -- | -- | --- | | " |
| | | | Red Clover | 195 # | 15 | 2925 # | 5 975# | -- | --- | | " |
| | | | Sw. Clover | 292 # | 10. | 2920 # | -- -- | -- | --- | | " |
| J. McKinney | C.O. #315 | A-13 (Portion) | Corn | 28 | 30. | 840 | -- -- | 15 | 420 | | |
| | | | Oats | 21 | 45 | 950 | -- -- | - | - | | 225 # Gr. Leg. seed |
| | | | Tim. Hay | 1.35 T. | 12 | 16.2 T. | -- -- | - | - | | 75 # Gr. Leg. " |
| | | | Lesp. | 45 # | 14. | 630 # | 7. 315 # | - | - | | |
| E.A. Fosse | C.O. #187 | " A-13 | Corn | 28 | 30. | 840 | - - | 15 | 420 | | |
| | | | Oats | 21 | 45. | 950 | - - | - | - | | 150# Fescue seed |
| | | | Tim. Hay | 1.35 T. | 12. | 16.2 T. | - - | - | - | | 75# Tim. seed |
| | | | Lespedeza | 45 # | 14. | 630 # | 7 315 # | - | - | | |
| E. A. Fosse | C.O. #187 | Part A-13 " A-14 | Corn | 30 | 16.6 | 500 | - - | 8.4 | 250 | | 85# R.Cl. seed |
| | | | Soybeans | 18 | 21. | 380 | - - | - | - | | 40# Tim-seed |
| | | | Oats | 39 | 38. | 1396 | - - | - | - | | 140# Lesp. seed |
| | | | R. Top, Tim. Les. | .85T | 37. | 31.56 T. | - - | - | - | | 7# R-Top seed |
| | | | Tim. Lesp. | - | - | - | - - | 25.5 | - | Soil Imp. | 61.1 Ton Limestone |
| | | | | | | | | | | | 901 Ton R-phos. 1.8 Ton Potash |
| M. L. Skelcher | 20206 | A-14 | Corn | 37 | 8. | 296 | 8. | 296 | 23. | 851 | 114.3 T. Limestone |
| | | | Corn Silage | 4 Ton | 21.5 | 86 Ton | - | -- | - | - | 3.72 Ton Sup. Phos. |
| | | | Soybeans | 9 | 26.5 | 238 | - | -- | - | - | 15.54 " R. Phos. |
| | | | Oats | 20 | 50. | 1000 | - | -- | - | - | 3.1 T. Mur-Potash |
| | | | Lesp. Hay | 1.29 T. | 30.5 | 39.48 T. | - | -- | - | - | 475# Lesp. seed |
| | | | Rye | -- | -- | -- | - | -- | 27.5 | Gr. Manure | 10# Red Top seed 14# Tim. seed |

CULTIVATED CROPS

Page 4 of 10

Crab Orchard Refuge -- 1955

| Permittee | Permit No. | Unit or Location | Crops Grown | Avg. Yield per Acre | Permittee's Share | Permittee's BU. Har-vested | Government's Share or Return | | | | | |
|-----------------|------------|------------------|----------------|---------------------|-------------------|----------------------------|------------------------------|-----------------|----------------------------|-------------------|---------------------|----------------|
| | | | | | | | Harvested: | Unharvested | Compensatory, Services, or | | Cash Revenue | |
| | | | | | | | Acres: Bu. | Acres: Bu. | | | | |
| E. Fisher | C.O.# 124 | A-16 | Corn | 20. | 19. | 380 | 95x | 190x | 9.5 | 190 | 7.273 Ton R-Phos. | |
| | | | Soybeans | 11. | 36 | 424 | -- | -- | 14. | Gr.Man. | 1.35 Ton Mur-Potash | |
| | | | A-17 | Rye | -- | -- | -- | -- | -- | 5.5 | Gr.Man. | 87# Lesp. seed |
| | | | R-Clover | .76 T. | 8.5 | 6.5 T. | -- | -- | -- | -- | 35# Timo. seed | |
| | | | Tim-Lesp. | .67 T. | 23. | 15.34 T. | -- | -- | -- | -- | 3# redtop seed | |
| | | | Tim-Lesp. | -- | -- | -- | -- | -- | 35.5 | Soil Improvement | | |
| O.R. Albright | 24262 | A-18a | Corn Silage | 2.3 T. | 9. | 20.7 T. | -- | -- | -- | -- | 5# Fescue | |
| | | A-18 | Corn | 27 | 50.5 | 1352 | -- | -- | 29.5 | 796 | 6# Orchard grass | |
| | | A-20 | Soybeans | 5. | 2300 | 111 | -- | -- | - | - | 4# Redtop | |
| | | Oats | 17. | 53. | 900 | -- | -- | - | - | 4# timothy | | |
| | | Barley | 4. | 9. | 40 | -- | -- | - | - | | | |
| | | Tim-Lesp.Rtop | - | - | - | -- | -- | 22.5 | Soil Improvement | | | |
| H. Snider | 24268 | A-19 | Idle | - | - | - | -- | -- | 52. | | | |
| | | | Corn | 23. | 14.5 | 333 | -- | -- | 5. | 115 | Land Clearance | |
| | | | Oats | 22. | 13. | 285 | -- | -- | - | -- | | |
| | | | Barley | 10. | 9.5 | 100 | -- | -- | - | -- | | |
| | | | Lesp. | .81 T. | 4.0 | 3.25 T. | -- | -- | - | -- | | |
| | | | Tim-Lesp. | -- | -- | -- | -- | -- | 5.5 | Soil Improve. | | |
| H.D. Montgomery | 20334 | A-21 | Corn | 26. | 56.3 | 1464 | -- | -- | 28.2 | 733 | 91.55 T. Limestone | |
| | | A-22 | Soybean | 11. | 79. | 833 | -- | -- | -- | -- | 17.4T.R-Phosphate | |
| | | Wheat | 17. | 34. | 578 | 11. | 187 | -- | -- | 2.5 T. Sup. Phos. | | |
| | | Oats | 31. | 6. | 186 | -- | -- | -- | -- | 3.5 T. Mur-Potash | | |
| | | Sw.Clover | -- | - | -- | -- | -- | 65. | Gr.Manure | 25# lesp. seed | | |
| | | Tim-R.T.,Les. | -- | - | -- | -- | -- | 12.5 | Soil Impr. | 70# R.Cl. seed | | |
| | | Fallow | -- | - | -- | -- | -- | 22. | | 120# Tim. seed | | |
| | | Idle | -- | - | -- | -- | -- | 5. | | | | |
| M. M. Ramsey | C.O.#144 | A-23 | Corn | 31. | 38.3 | 1187 | -- | - | 19.2 | 595 | 14.3 T. R. Phos. | |
| | | | Soybeans | 9. | 43.5 | 409 | -- | - | - | - | 2.76 T. Sup.Phos. | |
| | | | Wheat | 16. | 9. | 145 | -- | - | - | - | 2.75 T. Mur-Potash | |
| | | | Oats | 10. | 26.5 | 256 | -- | - | - | - | 112# Lesp. seed | |
| | | | Tim.-R.T.,Les. | 1. T. | 27.5 | 27 T. | -- | - | - | - | 23# Red top seed | |
| | | | Fallow | - | -- | -- | -- | - | 28 | - | 15# Tim. seed | |

CULTIVATED CROPS

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| Permittee | Permit No. | Unit or Loca- tion | Crops Grown | Avg. Yield per Acre | Permittee's Share | | Government's Share or Return | | | | | Compensatory Services, or Cash Revenue |
|---------------------------|------------|-----------------------|----------------|---------------------|-------------------|---------|------------------------------|-----|-------------------|-----|-------|--|
| | | | | | Acres | vested | Harvested Acres | Bu. | Unharvested Acres | Bu. | | |
| | | | | | | | | | | | | |
| Chas Moore | C.O.#189 | A-23a | Corn | 27 | 46. | 1242 | - | - | 23 | 621 | 42.45 | T. Limestone |
| | | A-27 | Soybeans | 9 | 49.5 | 443 | - | - | - | -- | 1 | T. Mur-Potash |
| | | | S-bean(Hay) | 11. | 10. | 110 | - | - | - | -- | 300# | Lesp. seed |
| | | | Wheat | 9. | 24.5 | 210 | - | - | - | -- | | |
| | | | Oats | 19. | 11. | 212 | - | - | - | -- | | |
| | | | Rye | - | - | -- | - | - | 61 | | | Green Mamure & Goose Forage |
| | | | Milo | - | - | -- | - | - | 15 | | | Goose Forage |
| | | | B-Wheat | - | - | -- | - | - | 9 | | | Goose Forage |
| | | | Lespedeza | - | - | -- | - | - | 40 | | | Soil Improvement |
| | | | RedClover | - | - | -- | - | - | 11 | | | Soil Improvement |
| C. Pritchett | 24279 | A-24 | Corn | 31. | 35.7 | 1107 | - | - | 17.8 | 552 | 6 bu. | rye seed |
| | | | Soybeans | 13 | 30.5 | 404 | - | - | -- | -- | 23# | tim. seed |
| | | | Wheat | 6 | 61. | 371 | - | - | -- | -- | 250# | Lesp. seed |
| | | | Lesp. | .72 T. | 36.0 | 26 T. | - | - | 25 | | | Soil Impr. - Land Clearance |
| | | | Rye | - | -- | -- | - | - | 11.5 | | | Green Man. - Goose forage |
| | | | Fallow | - | -- | -- | - | - | 23. | | | |
| | | | Idle | - | -- | -- | - | - | 30.5 | | | |
| R. McGee | C.O. 318 | A-24a | Corn | 45. | 4. | 180 | - | - | 11.5 | 517 | - | extra share of corn |
| | | | Soybean | 3. | 16 | 49 | - | - | -- | -- | - | in field f/goose-fo |
| | | | Sw.Clover | - | - | - | - | - | 15.5 | | | Green-Mamure |
| | | | Idle | - | - | - | - | - | 17.5 | | | |
| V. Kelley | C.O. # 139 | A-25 | Corn | 36 | 19. | 684 | - | - | 9.5 | 342 | 28.55 | Tom Lime. |
| | | | Soybeans | 6 | 17. | 109 | - | - | - | -- | 2.24 | T. Sup.Phos. |
| | | | Rye | 5 | 4. | 20 | 2 | 10 | - | -- | 1.15 | T. Mur-Potash |
| | | | Tim-hay | .97 T. | 6. | 5.85 T | - | - | - | -- | 7# | timothy seed |
| | | | Les.hay | .65 T. | 17. | 10.72 T | - | - | - | -- | 63# | lesp. seed |
| | | | Tim-Lesp. | - | - | - | - | - | 9.5 | | | Soil Improvement |
| | | | Fallow | - | - | - | - | - | 18.5 | | | |
| H. Snider / 24276 6/6. | | | Corn | 23 | 22.7 | 522 | - | - | 11.3 | 260 | | Land Clearance |
| | | | Soybeans | 12 | 28.5 | 348 | - | - | - | - | | Goose forage |
| | | | Rye | - | -- | - | - | - | 9. | | | Goose Forage & Gr. Mamure |
| | | | Tim,R.T.,Lesp. | - | -- | - | - | - | 22. | | | Soil Improvement |
| | | | Fallow | - | -- | - | - | - | 17.5 | | | |
| | | | Idle | - | -- | - | - | - | 13. | | | |

CULTIVATED CROPS

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Crab Orchard Refuge -- 1955

| Permittee | : | : | Unit | : | : | Avg. | : | Permittee's | : | Government's Share or Return | | | | | | | | | | | | | | | |
|-----------|----------|--------------------|-------------|--------|------|----------|-----|-------------|------|------------------------------|-----------|-----------------|----|---|-------|---|-------|---|-------|---|--------------|---|-------------|---|--------------|
| | | | | | | | | | | : | Permit | : | or | : | Crops | : | Yield | : | Share | : | Harvested | : | Unharvested | : | Compensatory |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| | : | : | tion | : | : | Acres | : | | : | | | | | | | | | | | | Cash Revenue | | | | |
| O. Morris | C.O. 150 | A-28 | Corn | 28 | 38.7 | 1084 | -- | -- | 19.2 | 540 | 355# | R.Cl. seed | | | | | | | | | | | | | |
| | | | Soybeans | 7 | 24 | 159 | -- | -- | -- | -- | 50# | R.Top " | | | | | | | | | | | | | |
| | | | Oats | 14 | 37 | 518 | -- | -- | -- | -- | 100# | Tim. seed | | | | | | | | | | | | | |
| | | | Tim-R.T.-L. | .72 T. | 40 | 28.67 T. | -- | -- | -- | -- | 140# | Lesp. " | | | | | | | | | | | | | |
| | | | ditto | - | - | -- | -- | -- | 32 | Soil Impr. | | | | | | | | | | | | | | | |
| C. James | C.O. 308 | A-32 | Corn | 23 | 10 | 230 | -- | -- | 5 | 115 | 480# | Lesp. seed | | | | | | | | | | | | | |
| | | | Soybeans | 11 | 13.5 | 148 | -- | - | - | -- | | | | | | | | | | | | | | | |
| | | | Oats | 26 | 24 | 625 | -- | -- | - | -- | | | | | | | | | | | | | | | |
| | | | Lespedeza | .8 T. | 26.5 | 21.2 T. | -- | -- | - | -- | | | | | | | | | | | | | | | |
| | | | Tim-Lesp. | - | - | -- | -- | -- | 28 | Soil Impr. | | | | | | | | | | | | | | | |
| L. Dryden | 24274 | A-34 | Corn | 24 | 28 | 672 | -- | -- | 14 | 336 | | Erosion control | | | | | | | | | | | | | |
| | | | Soybeans | 10 | 25 | 250 | -- | -- | -- | -- | | | | | | | | | | | | | | | |
| | | | R.Clover | - | - | -- | -- | -- | 8 | Gr.Manure | | | | | | | | | | | | | | | |
| | | | Lespedeza | .89 T. | 15 | 13.3 T. | -- | -- | - | -- | | | | | | | | | | | | | | | |
| | | | Fallow | -- | -- | -- | -- | -- | 20 | | | | | | | | | | | | | | | | |
| F. Wilson | C.O. 219 | A-35 | Corn | 22 | 16 | 352 | -- | -- | 8 | 176 | | | | | | | | | | | | | | | |
| | | | S-beans | -- | -- | -- | -- | -- | 16 | Goose forage & Gr. Manure | | | | | | | | | | | | | | | |
| | | | Rye | -- | -- | -- | -- | -- | 25 | " " " " | | | | | | | | | | | | | | | |
| | | | Fallow | -- | -- | -- | -- | -- | 14 | | | | | | | | | | | | | | | | |
| | | | Idle | -- | - | -- | -- | -- | 4.5 | | | | | | | | | | | | | | | | |
| F. Watson | C.O. 147 | A-36, part B-17 | Corn | 47 | 21.3 | 1001 | 4.2 | 200 | 4. | 188 | 27# | Lesp. seed. | | | | | | | | | | | | | |
| | | | Soybean | 8 | 17 | 136 | -- | -- | 16 | Goose forage & gr. manure | | | | | | | | | | | | | | | |
| | | | Wheat | 25 | 13 | 320 | -- | -- | -- | -- | 160# | gr.leg. seed | | | | | | | | | | | | | |
| | | | Oats | 20 | 20.5 | 412 | -- | -- | -- | -- | 2.4 T. | Mur-Potash | | | | | | | | | | | | | |
| | | | Lesp. | 1.1 T. | 15.5 | 17.19 T. | -- | -- | -- | -- | 2.8 T. | 3-sup-Phos. | | | | | | | | | | | | | |
| | | | | | | | | | | .52 T. | Cal-Phos. | | | | | | | | | | | | | | |
| | | | | | | | | | | | .27 T. | Amn-Nitrate | | | | | | | | | | | | | |

CULTIVATED CROPS

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Crab Orchard Refuge -- 1955

| Permittee's | Permit: No. | Unit Loca- tion | Crops Grown | Avg. Yield per Acre | Permittee's Share Acres | Bu. Har- vested | Government's Share or Return | | | | |
|--|----------------|----------------------------|----------------|------------------------------|-------------------------------|--------------------|------------------------------|-------------|--|------------|---|
| | | | | | | | Harvested | Unharvested | Compensatory Services, or Cash Revenue | | |
| | | | | | | | Acres | Bu. | Acres | Bu. | |
| Cleop. McGee Paul McGee K. McGee | C.O.152 | A-38 C-6 | Corn | 30 | 64 | 1920 | -- | -- | 32 | 960 | 20.6 T. R-Phos. |
| | | | Soybean | 8 | 80.5 | 658 | -- | -- | -- | -- | 37.6 T. Lime. |
| | | | Wheat | 8 | 41 | 316 | 2 | 9 | 2.5 | Gr.Man. | 1.9 T. Mur-Pot. |
| | | | Oats | -- | -- | -- | -- | -- | 4.5 | " " | Goose Forage |
| | | | Barley | -- | -- | -- | -- | -- | 4.5 | " " | " " |
| | | | Rye | -- | -- | -- | 4.5 | 37 | 10. | " " | " " |
| | | | Lesp. | 1. T. | 60.5 | 60.55 T. | -- | -- | 46.5 | Soil Impr. | |
| | | | Fallow | -- | -- | -- | -- | -- | 26. | | 150# Gr.Leg. seed |
| | | | Idle | -- | -- | -- | -- | -- | 5.5 | | |
| W. Houston | 20301 | A-39, & part of A-41 | Corn | 22 | 31 | 682 | 5. | 110 | 8 | 176 | Land Clear. |
| | | | Wheat | 23 | 23 | 529 | -- | -- | -- | -- | 117# gr-leg. seed |
| | | | Idle | -- | -- | -- | -- | -- | 8 | -- | |
| W. Craig | C.O. 135 | A-40 | Corn | 32 | 10 | 320 | -- | -- | 5 | 160 | 6.24 T. R-phos. |
| | | | Soybeans | 6 | 12.5 | 70 | -- | -- | -- | -- | .6 T. 3-sup-phos. |
| | | | Fallow | - | -- | - | -- | -- | 11.5 | -- | 1.2 T. Mur-potash |
| V. Reed | C.O. 235 | Part A-41, C-18 | Corn | - | -- | - | -- | -- | 46.5 | 465 | 8. T. 3-sup-Phos. |
| | | | Soybeans | 5 | 44 | 239 | -- | -- | -- | -- | 4.5 T. Mur-pot. |
| | | | Oats | 13 | 31 | 401 | -- | -- | -- | -- | 100# lesp. seed |
| | | | R-clover | -- | -- | -- | -- | -- | 19 | | Soil Improvement |
| | | | Rye | -- | -- | -- | -- | -- | 19 | | goose forage-green manure |
| C. Morgan | C.O. 210 | A-41a | Corn | 25 | 8 | 200 | -- | -- | 4 | 100 | 5. T. R-Phos. |
| | | | Soybeans | -- | -- | -- | -- | -- | 9 | | Green-Manure |
| | | | R-Clover | -- | -- | -- | -- | -- | 6 | | Soil Improve. |
| | | | Idle | -- | -- | -- | -- | -- | 11 | | |
| E. Venable | C.O. 121 | B-2 | Corn | 25 | 8 | 200 | -- | -- | 4 | 100 | 5. T. R-phos. |
| | | | Soybean | -- | - | -- | -- | -- | 9 | | Gr. Manure |
| | | | R. Clover | -- | - | -- | -- | -- | 6 | | Soil Impr. |
| E. Venable | C.O. 121 | B-2 | Corn | 14 | 28 | 392 | 9 | 126 | - | -- | 55.975 T. Lime. |
| | | | Soybeans | 5 | 19 | 193 | - | -- | - | -- | 10.7 T. R-Phos. |
| | | | Oats | 32 | 24 | 770 | - | -- | - | -- | 2.4 T. sup-phos. |
| | | | Tim-R.T.,L. | .7 T. | 78 | 54.28 T. | - | -- | 25 | | Soil Imp. 2.T. Mur-pot. |
| | | | | | | | | | | | 152 loads Manure 3 Sp. barbed-wire 575# gr.leg. seed. |

CULTIVATED CROPS

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Crab Orchard Refuge -- 1955

| Permittee | Permit No. | Unit or Loca- tion | Crops Grown | Avg. Yield per Acre | Permittee's Share : Acres : vested | Government's Share or Return | | | | | Compensatory Service or Cash Revenue |
|--------------|------------|-----------------------|---------------|---------------------|---------------------------------------|------------------------------|-----|----------------------|-----|--------------------------------|---|
| | | | | | | Harvested Acres | Bu. | Unharvested Acres | Bu. | | |
| | | | | | | | | | | | |
| M. Skelcher | C.O.278 | B-3 | Corn | 22 | 12 | 267 | 4 | 89 | -- | -- | 3.88 T. sup-phos. |
| | | | Corn-Silage | 4 T. | 38 | 152 T. | - | - | -- | -- | 3.05 T. Mur-Pot. |
| | | | Soybeans | 5 | 8 | 43 | - | - | -- | -- | |
| | | | Wheat | 12 | 46 | 541 | - | - | -- | -- | |
| | | | Oats | 20 | 20 | 396 | - | -- | -- | -- | |
| | | | R.Clover | 1.4 T. | 18 | 24.5 T. | - | -- | - | -- | |
| | | | Oat-Tim.Lesp | 1.29T. | 31 | 39.91 T. | - | -- | - | -- | |
| W. Howell | C.O. 149 | B-6 | Wheat | 35 | 26 | 903 | - | -- | -- | -- | 142.93 T. Limestone |
| | | | Tim-R.T.,Les. | .83 T. | 35 | 29 | - | -- | -- | -- | 22.98 T. R-Phos. |
| | | B-7 | Wheat Straw | 1.6 T. | 19.5 | 31.2 T | 6.5 | 10.4 T. | -- | -- | 1.6 T. Mur-Pot. |
| | | | Fesc.Seed | 75 # | 10 | 750 # | 10 | 750# | -- | -- | 90# Kenland R.C.seed |
| R.O. Sterns | C.O. 294 | B-8 | Oats | 25 | 43 | 1073 | -- | -- | -- | (1 steel gate & 1680# gr.seed) | |
| J. Wagley | C.O. 171 | B-9 | Corn | 31 | 24 | 744 | 8 | 248 | | | |
| R. Bigler | C.O. 110 | B-11 | Corn | 30 | 51.5 | 1540 | -- | -- | -- | -- | 16.9 Ton R-Phos. |
| | | | Alfalfa | 1.4 T. | 8 | 10.92 T. | -- | -- | -- | -- | 5.5 Ton Mur-Potash |
| | | | Tim-R.Cl. | .53 T. | 8 | 4.25 T. | -- | -- | 10 | Soil Imprv. - 255# grass | |
| | | | Fallow | - | - | - | -- | -- | 16 | seed | |
| R. Hayton | C.O. 118 | B-12 | Soybeans | 8 | 18 | 145 | -- | -- | -- | -- | 27 bu. rye seed |
| | | | Lespedeza | 1.06 T. | 6 | 6.37 T. | -- | -- | 17 | Soil Impr. Estab. gr-waterwy | |
| O. Stocks | C.O. 132 | B-14 | Corn | 23. | 30 | 690 | 10 | 230 | -- | -- | 70 Ton Limestone |
| | | B-16 | Soybeans | 10 | 31 | 328 | - | -- | 16 | Gr.Manure | 11.4 Ton R-Phos. |
| | | | Alfalfa | 2.24 T. | 15.5 | 34.75 T. | - | -- | -- | -- | 3. Ton Mur-Pot. |
| | | | Tim-Lesp. | -- | -- | -- | - | -- | 4 | Soil Improve.,20 bu rye seed | |
| W. Hayton | C.O. 131 | B-15 | Corn | 24 | 6 | 150 | 2 | 50 | -- | -- | 5.15 Ton R-Phos. |
| | | | Soybeans | 10 | 19 | 245 | -- | -- | -- | -- | .85 T. Mur-potash |
| | | | | | | | | | | 9 bu.rye seed | |
| Mart Collins | C.O. 158 | B-18 | Corn | 10 | 12 | 120 | -- | -- | 6 | 60 | |
| | | Part of | Soybeans | 11 | 11 | 120 | -- | -- | -- | -- | 42.1 Ton Limestone |
| W.E. Russell | 24269 | B-17, | Wheat | 14 | 13 | 180 | -- | - | -- | -- | |
| | | B-18 | Oats | 16 | 4 | 66. | - | -- | -- | -- | |
| | | | Lespedeza | -- | -- | -- | - | -- | 17 | Soil Improvement | |

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Crab Orchard Refuge - 1955

| Permittee | Permit No. | Unit or Loca- tion | Crops Grown | Avg. yield Per Acre | Permittee's Share | Permittee's Bu. Har-vested | Government's Share or Return | | | | |
|------------------|------------|-----------------------------------|---------------------|---------------------|-------------------|----------------------------|------------------------------|-------------|-------------------------|-----|--|
| | | | | | | | Harvested | UNharvested | Compensatory Service or | | Cash Revenue |
| | | | | | | | Acre | Bu. | Acre | Bu. | |
| O. Burklow | C.O. 226 | C-2 | Corn | 14 | 4.5 | 63 | 1.5 | 20 | -- | -- | 20# redclover seed |
| | | | Soybean | 6 | 10 | 60 | -- | -- | -- | -- | 45# Lespedeza seed |
| | | | Lespedeza | .5 T. | 14.5 | 6.9 Ton | -- | -- | -- | -- | |
| | | | Red Clover | -- | -- | -- | -- | -- | 7 | | Soil Improvement |
| R. Kelley | C.O. 317 | C-3 | Oat-Lesp. | .4 T. | 3. | 1.3 Ton | -- | -- | 3 | | soil impr. 16 t. Limestone .76 t. sup-phos. |
| L. Henderson | C.O. 146 | C-3 | Soybeans | -- | -- | -- | -- | -- | 9 | | green-manure |
| J. Odum | C.O. 316 | C-11 | Corn | 14 | 12 | 170 | 4 | 56 | -- | -- | Soil Impr. (eros. cont.) |
| | | | Soybeans | 4 | 19 | 73 | -- | -- | -- | -- | Land Clearance |
| | | | Wheat | 15 | 6.5 | 100 | -- | -- | -- | -- | |
| | | | H. Clover | -- | -- | -- | -- | -- | 5 | | Soil Improvement |
| H. Batson | C.O. 103 | C-7 | Corn | 25 | 16.5 | 412 | 1.5 | 37 | -- | -- | Land Clearance |
| | | | Soybeans | 9 | 37. | 341 | -- | -- | -- | -- | 12# Timothy seed |
| | | | Lespedeza | .6 T. | 11. | 6.76 Ton | -- | -- | -- | -- | 28# gr-leg. seed (48#) |
| E. Yancey | C.O. 104 | C-8 | Corn | 20 | 1.5 | 30 | .5 | 10 | -- | -- | |
| C. Escue | C.O. 112 | C-9 | Corn | 26 | 10.2 | 265 | 3.4 | 90 | -- | -- | |
| | | C-13 | Tim-Lesp. | -- | -- | -- | -- | -- | 10 | | Soil Improvement |
| R. & E. Cox | C.O. 142 | C-12 | Wheat | 18 | 20 | 363 | -- | -- | -- | -- | 6.71 ton R-Phos. |
| | | C-14 | R-top, Lesp. | .46 T | 14 | 6.5 Ton | -- | -- | 23.5 | | Soil Improvement |
| J. Duncan | C.O. 148 | C-17 | Corn | 27 | 6.7 | 181 | 2.3 | 63 | -- | -- | |
| H. Walker | 24267 | C-19 | Corn | 22 | 15 | 330 | 5. | 110 | -- | -- | |
| I. Tripp | 24264 | C-20 | Corn | 31 | 21 | 655 | 7 | 220 | -- | -- | |
| | | C-22 | Lespedeza | -- | -- | -- | -- | -- | 21.5 | | Soil Improve. |
| T.J. Throgmorton | C.O. 115 | C-21 | Tim-Lesp. r-top/ | .3 T. | 6 | 2. Ton | -- | -- | 7 | | Soil Impr. 200# Lesp. seed |
| R. Hudgens | 24263 | C-23 | tim-lesp. | -- | -- | -- | -- | -- | 13 | | Soil Improv. |
| R. Craig | 20321 | E2, NW 1/4, S. 1, T11S, R1W | Corn | 28 | 8 | 160 | -- | -- | 4 | 80 | |

CULTIVATED CROPS

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SUMMARY

Crab Orchard Refuge - 1955

Government's Share

| Crop | : Avg. : | : | : | : PERMITTEE'S SHARE : | : Harvested : | : Unharvested : | Compensation |
|------------|-----------|-------|------------|-----------------------|---------------|-----------------|--------------|
| | : Yield : | Acres | : Bushels | : Acres : | : Bushels : | Acres : | Bu. : |
| Corn | 27.8 | 1661. | 49,195 | 1091.5 | 30,664 | 78. | 2045 |
| Corn-Sil. | 3.8 Ton | 68.5 | 258.7 Ton | 68.5 | 258.7 T. | -- | -- |
| Soybeans | 9.5 | 1086. | 9391 | 983.5 | 9,391. | -- | -- |
| Wheat | 13.8 | 391.5 | 5410 | 376. | 5,203 | 13. | 196 |
| Oats | 23.2 | 735.5 | 16960 | 731. | 16,960 | -- | -- |
| Rye | 5.0 | 174.5 | 30 | 4. | 20 | 2. | 10 |
| Barley | 11.8 | 43. | 465 | 39.5 | 465 | -- | -- |
| D.Milo | --- | 15. | --- | --- | --- | -- | -- |
| B'wheat | --- | 9. | --- | --- | --- | -- | -- |
| Lesp(seed) | 60.1#) | 444.5 | 2465 # | 29. | 1755 # | 12. | 690# |
| " (hay) | .89 Ton) | | 211.72 Ton | 236.5 | 211.72 Ton | -- | -- |
| Alfalfa | 1.85 ton | 31. | 57.47 ton | 31. | 57.47 ton | -- | -- |
| | .98 Ton | 146. | 51.27 " | 52 | 51.27 " | -- | -- |
| RedClover | 165# | | 4620 # | 21 | 3465 # | 7. | 1155 # |
| Gr-Leg.Hay | .87 ton | 809.5 | 352.35 T. | 404.5 | -- | -- | -- |
| Timothy | 1.22 Ton | 18. | 22.05 Ton | 18. | 22.05 Ton | -- | -- |
| Fescue | 78# | 47.5 | 2460 # | 31.5 | 1390 # | 16 | 1070 # |
| Sw.Clover | 292# | 193. | 5840 # | 10. | 2920 # | 10 | 2920 # |
| Fallow | --- | 293.5 | | | | | |
| Idle | --- | 158.0 | | | | | |
| | | | | 4127.5 | 62703. bu | 138 | 2251 |
| | | | | | | | 1609.0 |
| | | | | | | | 13486 |
| | | | | | | | 173 |
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total -- 6325.

Hay (permit) 101.

6426.

4127.5

62703.6
9530 #

342.51 Ton

138

2251

5835 #

1609.0

13,486

173

66

167

2.5

173

29.5

610.0

REFUGE GRAIN REPORT

Refuge Crab OrchardMonths of Sept. through December, 1955

| (1) VARIETY* | (2) ON HAND BEGINNING OF PERIOD | (3) RECEIVED DURING PERIOD | (4) TOTAL | (5) GRAIN DISPOSED OF | | | | (6) ON HAND END OF PERIOD | (7) PROPOSED OR SUITABLE USE* | | |
|-----------------|--|-------------------------------------|--------------|--------------------------|--------|-----|-------|------------------------------------|----------------------------------|------|---------|
| | | | | Transferred | Seeded | Fed | Total | | Seed | Feed | Surplus |
| Corn | 235 | 2045 | 2280 | -- | -- | -- | -- | 2280 | -- | 2280 | 0 |
| D. Milo | 12 | -- | 12 | -- | -- | -- | -- | 12 | 12 | -- | 0 |
| Rye (winter) | 170 | -- | 170 | -- | 170 | -- | 170 | 0 | | | |
| Wheat (winter) | 250 | -- | 250 | -- | 250 | -- | 250 | 0 | | | |

(8) Indicate shipping or collection points _____

(9) Grain is stored at Refuge Granary

(10) Remarks _____

*See instructions on back.

(10) Remarks

NR-8a

(9) Grain is stored at

REFUGE GRAIN REPORT

(8) Indicate shipping or collection points

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.

16-61482-1 U. S. GOVERNMENT PRINTING OFFICE

| Variety | On Hand Beginning Period | Received During Period | Total | Grain Disposed of | | | Beginning End of Period | Proposed or Available Use | | |
|---------|--------------------------------|------------------------------|-------|-------------------|--------|------|-------------------------------|---------------------------|------|-------|
| | | | | Shipped | Seeded | Feed | | Seed | Feed | Other |
| (1) | (2) | (3) | (4) | (5) | | | (6) | (7) | | |

Refuge

Months of Sept.

through December 1923

REFUGE GRAIN REPORT

3-1759
Form NR-9

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

Refuge Crab Orchard Year 1944 1955

| Species | Collections | | | | Receipts | | Total Amounts on Hand | Amount Surplus |
|-----------------|-------------|------------------------------------|--------|-----------|----------------------|-----------------------------------|-----------------------------|-------------------|
| | Amount | Date or Period or Collection | Method | Unit Cost | Amount | Source | | |
| Multiflora Rose | -- | ----- | ----- | ----- | 2000 plants | Ill.State Nur. | ----- | ----- |
| S/Leaf Pine | -- | ----- | ----- | ----- | 5000 plants | ditto | ----- | ----- |
| Ky. Bluegrass | --- | ----- | ----- | ----- | 1000 lbs. | Valentine Ref. | 600 | --- |
| Sw. Clover | --- | ----- | ----- | ----- | 2900 lbs 1312 lbs | MudLake Ref. Crab Orchard | 2512 | --- |
| Red Clover | --- | ----- | ----- | ----- | 995 lbs. 375 lbs. | Upper Miss.) Crab Orchard) | 600 | --- |
| Alsike Clover | --- | ----- | ----- | ----- | 400 lbs. 400 lbs. | Swan Lake Ref.) Mud Lake Ref.) | - 400 | ----- |
| Buckwheat | --- | ----- | ----- | ----- | 495 lbs. | Necedah Refuge | 495 | ----- |
| K. Lespedeza | --- | ----- | ----- | ----- | 1020 lbs | Crab Orchard | 1020 | ----- |
| Sericea Lesp. | --- | ----- | ----- | ----- | 17 | Crab Orchard | 417 | ----- |

3-1760
Form NR-10
(April 1946)

~~WAZING AND~~ GRAZING

Refuge Crab Orchard

Year 19⁵⁵

| Permittee | Permit No. | Unit or Location | Actual Acreage Utilized | Animal Use Months | Tons of Hay Harvested | Period of Use From - To | Rate | Total Income | Remarks |
|----------------|------------|---|-------------------------|-------------------|-----------------------|-------------------------|------|--------------|---------|
| E.J. Aikman | 24293 | A-33 | 180 | 196 | | 5/1 - 10/31 | 1.00 | 196.00 | |
| H. Batson | 24285 | C-16 | 62 | 54 | | 5/1 - 10/31 | 1.00 | 54.00 | |
| H. Broeking | 24295 | A-13 | 171 | 252 | | 5/1 - 10/31 | 1.00 | 252.00 | |
| J.T. Clayton | 24288 | B-10 | 60 | 80 | | 5/1 - 10/31 | 1.00 | 80.00 | |
| L.N. Colp | 24287 | B-13 | 70 | 90 | | 5/1 - 10/31 | 1.00 | 90.00 | |
| Cleo Escue | 24401 | C-10 | 40 | 52 | | 5/1 - 10/31 | 1.00 | 52.00 | |
| J.D. Ferrell | 22150 | C-15 | 136 | 36 | | 5/1 - 10/31 | 1.00 | 36.00 | |
| Arthur Fisher | 22146 | C-16 | 103 | 75 | | 5/1 - 9/30 | 1.00 | 75.00 | |
| W. G. Fleming | 24297 | A-3 | 200 | 221 | | 5/1 - 10/31 | 1.00 | 221.00 | |
| Allen Flener | 24283 | C-9 | 260 | 212 | | 5/1 - 10/31 | 1.00 | 212.00 | |
| E.A. Fosse | 24282 | A-15 | 171 | 239 | | 5/1 - 10/31 | 1.00 | 239.00 | |
| W.C. Hawthorne | 24277 | B-5 | 74 | 120 | | 5/1 - 9/30 | 1.00 | 120.00 | |
| Wayne Howell | 24281 | B-6 & 7 | 109 | 222 | | 5/1 - 10/31 | 1.00 | 222.00 | |
| Vernon Howell | 22153 | A-2 | 47 | 45 | | 6/15 - 10/31 | 1.00 | 45.00 | |
| J. Hubbard | 22149 | S $\frac{1}{2}$ NW $\frac{1}{4}$, NW $\frac{1}{4}$ Sec. 18, T10S, R1E | 23 | 33 | | 5/1 - 10/31 | 1.00 | 33.00 | |
| E.R. James | 22141 | A-33 | 115 | 150 | | 5/1 - 10/31 | 1.00 | 150.00 | |
| C. Johnson | 24275 | B-13 | 96 | 101 | | 5/1 - 10/31 | 1.00 | 101.00 | |
| H. Johnson | 22148 | C-4 | 25 | 25 | | 5/1 - 10/31 | 1.00 | 25.00 | |
| W. L. Kane | 24299 | A-30, 31, 32 | 560 | 300 | | 5/1 - 9/30 | 1.00 | 300.00 | |
| Vernon Kelley | 24289 | A-25 | 120 | 76 | | 5/1 - 10/31 | 1.00 | 76.00 | |
| C. Morris | 24286 | A-6 | 125 | 120 | | 5/1 - 10/31 | 1.00 | 120.00 | |
| G. McCord | 24296 | C-13 | 165 | 240 | | 5/1 - 10/31 | 1.00 | 240.00 | |
| D.C. Samuel | 22143 | A-1 | 240 | 331 | | 5/1 - 10/31 | 1.00 | 331.00 | |
| M.L. Skelcher | 24291 | A-37 | 328 | 552 | | 5/1 - 10/31 | 1.00 | 552.00 | |
| M.L. Skelcher | 24292 | B-8 (east) | 37 | 67 | | 5/1 - 9/30 | 1.00 | 67.00 | |

Totals: (see next page)

Acreage grazed..... Animal use months..... Total income Grazing.....
 Acreage cut for hay..... Tons of hay cut..... Total income Haying.....

~~XXXXXX~~ GRAZING

Refuge Crab Orchard

Year 19 55

Page **2.**

| Permittee | Permit No. | Unit or Location | Actual Acreage Utilized | Animal Use Months | Tons of Hay Harvested | Period of Use From - To | Rate | Total Income | Remarks |
|---------------|------------|------------------|-------------------------|-------------------|-----------------------|-------------------------|------|--------------|---------|
| M.L. Skelcher | 22152 | B-8 (west) | 102 | 72 | | 6/1 - 9/30 | 1.00 | 72.00 | |
| R.O. Sterns | 22144 | " " " | | 85 | | 5/1 - 10/31 | 1.00 | 85.00 | |
| E.R. Stone | 22147 | A-8 | 62 | 84 | | 5/1 - 10/31 | 1.00 | 84.00 | |
| E. Venable | 24294 | B-2 | 39 | 90 | | 5/1 - 10/31 | 1.00 | 90.00 | |
| H. Vaughn | 24298 | A-29 | 115 | 165 | | 5/1 - 10/31 | 1.00 | 165.00 | |
| E. Walker | 24280 | B-1 | 160 | 133 | | 5/1 - 8/15 | 1.00 | 133.00 | |
| L.J. Wohlwend | 22145 | A-6 | 298 | 185 | | 5/1 - 10/31 | 1.00 | 185.00 | |
| L.J. Wohlwend | 22155 | A-12 | 112 | 61 | | 8/10 - 10/31 | 1.00 | 61.00 | |

Totals:

Acreage grazed 4405 Animal use months 4771 Total income Grazing \$ 4,771.00
Acreage cut for hay 101 Tons of hay cut 100 Total income Haying 402.00

3-1760
Form NR-10
(April 1946)

HAYING ~~NOT GRAZING~~

Refuge Crab Orchard

Year 19⁵⁵

| Permittee | Permit No. | Unit or Location | Actual Acreage Utilized | Animal Use Months | Tons of Hay Harvested | Period of Use From - To | Rate | Total Income | Remarks |
|--------------|------------|--|-------------------------|-------------------|-----------------------|-------------------------|------|--------------|------------------------|
| E. J. Aikman | 22156 | A-33 | 32 | -- | 34 | 8/15 - 8/25 | 4.48 | 152.46 | Lespedeza hay |
| G. B. Morris | 22158 | A-6, A-13 | 28 | -- | 28 | 8/15 - 9/15 | 3.38 | 94.71 | Gr-Leg. (poor quality) |
| J. Capogreco | 22160 | A-28 | 29 | -- | 32 | 8/25 - 9/10 | 4.05 | 129.60 | Gr-Leg. (poor qual.) |
| Rolla Craig | 24402 | E 1 NE 1/4, Sec. 1, T11S, R 1 W. | 6 | -- | 3 | 9/20 - 10/5 | 4.29 | 12.87 | Lespedeza |
| Erven Yancey | 24405 | C-8 | 6 | | 3 | 10/4 - 10/31 | 4.12 | 12.36 | Lespedeza |

Totals:

Acreage grazed.....

Animal use months.....

Total income Grazing.....

Acreage cut for hay 101

Tons of hay cut 100

Total income Haying 402.00

TIMBER REMOVAL

Refuge.....Grab Orchard..... Year 194555

| 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 |
|-----------------|------------|--|---------|---|----------------|--------------|-------------------------------------|--------------|
| Alfred Layman | 20348 | W $\frac{1}{2}$ of NW $\frac{1}{4}$, Sec. 36, T10S, R1E | 2 | 300 Posts | \$.09 | \$ 27.00 | 3"—6" x 7' | Black Locust |
| Ed Ridgway | 20351 | SW $\frac{1}{4}$, NE $\frac{1}{4}$, Sec. 31, T9S, R1E | 4 | 500 Poles | .05 | 25.00 | 2"—3" x 8' | Sassafras |
| R. Schumaker | 20352 | NE $\frac{1}{4}$, NW $\frac{1}{4}$, Sec. 9, T10S, R1E | 2 | 586 Posts | .09 | 52.74 | 3"—6" x 7' | Black Locust |
| Carl Grant | 20353 | NW $\frac{1}{4}$, NW $\frac{1}{4}$, Sec. 15, T9S, R1E | 1 | 200 Posts | .09 | 18.00 | 3"—6" x 7' | Black Locust |
| H. G. Reinbold | 20355 | NW $\frac{1}{4}$, NE $\frac{1}{4}$, Sec. 29, T9S, R1E | 1 | 452 Posts | .09 | 40.68 | 3"—6" x 7' | Black Locust |
| David Ridgway | 20356 | SE $\frac{1}{4}$, SW $\frac{1}{4}$, Sec. 18, T9S, R2E | 1 | 250 Poles | .05 | 12.50 | 2"—3" x 8' | Sassafras |
| Carl Stephens | 20357 | SE $\frac{1}{4}$, NE $\frac{1}{4}$, Sec. 5, T10S, R1E | 2 | 555 Posts | .09 | 49.95 | 3"—6" x 7' | Black Locust |
| E. W. Soldner | 20358 | SW $\frac{1}{4}$, SW $\frac{1}{4}$, Sec. 9, T9S, R1E | 1 | 145 Posts | .09 | 13.05 | 3"—6" x 7' | Black Locust |
| Tennyson Tanner | 20359 | N $\frac{1}{2}$, SW $\frac{1}{4}$, Sec. 6, T10S, R2E | 3 | 300 Posts | .09 | 27.00 | 3"—6" x 7' | Black Locust |

Total acreage cut over..... Total income.....

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

Cords.....

Ties.....

TIMBER REMOVAL

Refuge Crab OrchardYear 19455

| 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 |
|------------------|------------|--|-------------|---|----------------|-----------------|-------------------------------------|----------------------------|
| Adolph Dahmer | 24261 | SW $\frac{1}{4}$, NW $\frac{1}{4}$, Sec. 22, T10S, R1E | 1 | 250 Posts 5 Posts | \$.09 .20 | \$22.50 1.00 | 3"—6" x 7" 7"—9" x 7" | Black Locust |
| A. F. Kruckeberg | 24265 | SW $\frac{1}{4}$, NW $\frac{1}{4}$, Sec. 22, T10S, R1E | 1 | 111 Posts | .09 | 10.00 | 3"—6" x 7" | Black Locust |
| James McKinney | 24266 | SE $\frac{1}{4}$, SW $\frac{1}{4}$, Sec. 3, T10S, R2E | 2 | 232 Posts 10 Posts | .09 .20 | 20.88 2.00 | 3"—6" x 7" 7"—8" x 7" | Black Locust |
| Kenneth McGee | 24270 | SE $\frac{1}{4}$, SW $\frac{1}{4}$, Sec. 22, T10S, R1E | 1 | 209 Posts 4 Posts | .09 .20 | 18.81 .80 | 3"—6" x 7" 7"—9" x 7" | Black Locust |
| Carl Grant | 24272 | NW $\frac{1}{4}$, NW $\frac{1}{4}$, Sec. 15, T9S, R1E | Sec. #20353 | 200 Posts | .09 | 18.00 | 3"—6" x 7" | Black Locust |
| Claude Cox | 24278 | SE $\frac{1}{4}$, NE $\frac{1}{4}$ & NW $\frac{1}{4}$, Sec. 31, T9S, R1E | 15 | 32,850 B.F. | 8.49 | 278.84 | Marked timber only | All marked deciduous trees |
| Claude Cox | 24278 | 3 tracts as follows: SW $\frac{1}{4}$, SW $\frac{1}{4}$, Sec. 32, T9S, R2E & NW $\frac{1}{4}$, NW $\frac{1}{4}$, Sec. 5, T10S, R2E & NE $\frac{1}{4}$, Sec. 6, T10S, R2E | 39 | 77,470 B.F. | 7.80 | 603.75 | Marked timber only | All marked deciduous trees |
| Claude Cox | 22157 | SE $\frac{1}{4}$, NW $\frac{1}{4}$ & NE $\frac{1}{4}$, Sec. 31, T9S, R2E | 12 | 45,380 B.F. | 8.75 | 396.37 | Marked timber only | All marked deciduous trees |

Total acreage cut over.....

Total income.....

No. of units removed B. F.

Method of slash disposal.....

Cords.....

Ties.....

TIMBER REMOVAL

Refuge Crab Orchard

Year 1945

| 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 |
|------------------|------------|--|---------|---|----------------|---------------|-------------------------------------|----------------------------|
| Sherman Graff | 22159 | E $\frac{1}{2}$, S $\frac{1}{2}$, Sec. 8, T10S, R1E | 15 | 10,170 B.F. | \$ 10.38 | \$ 105.58 | Marked timber only | All marked deciduous trees |
| A. F. Kruckeberg | 24403 | SW $\frac{1}{4}$, NW $\frac{1}{4}$, Sec. 22, T10S, R1E | 1 | 217 Posts | .09 | 19.53 | 3"—6" x 7' | Black Locust |
| Adolph Dahmer | 24404 | NW $\frac{1}{4}$, Sec. 26, T10S, R1E | 1 | 215 Posts 7 Posts | .09 .20 | 19.35 1.40 | 3"—6" x 7' 7"—9" x 7' | Black Locust |

Total acreage cut over 105

Total income \$1 784.73

No. of units removed B. F. 165,870

Method of slash disposal Lopped and scattered

Cords

Ties

Posts 3,993

Poles 750