

BRANCH OF WILDLIFE REFUGES

NARRATIVE REPORT

ROUTING SLIP

DATE Oct. 16, 1951

Mr. Salzer _____

Mr. DuMont _____

~~Mr. Hennessey~~ WKS

Miss Baum _____

SECTION OF OPERATIONS:

Mr. Ball _____

Dr. Morley _____

Mr. Regan _____

SECTION OF HABITAT IMPROVEMENT:

~~Mr. Griffith~~ E.E.G.

Mr. Kubichek _____

~~Dr. Bourn~~ WSE

Mr. Stiles WBS

SECTION OF LAND MANAGEMENT:

~~Mr. Ackerman~~ WA

Mr. Davis ad

STENOGRAPHERS:

REFUGE Swan Lake

PERIOD May-August, 1951

Narrative Report
Swan Lake National Wildlife Refuge
May - August, 1951

PERMANENT PERSONNEL

Robert F. Russell Refuge Manager
Marvin F. Lentz Clerk-Typist
William H. Thornsberry Maintenance Man, Equipment

TEMPORARY EMPLOYEES

Benny N. Howerton Tractor Operator
Roy T. Warren Tractor Operator

United States Department of Interior
Fish and Wildlife Service
Sumner, Missouri

Swan Lake National Wildlife Refuge

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Narrative Report
Swan Lake National Wildlife Refuge
May - August, 1951

I GENERAL

A. Weather Conditions

The following weather data was obtained from the U. S. Weather Bureau Station at St. Joseph, Missouri.

<u>Month</u>	<u>Precipitation</u>	<u>Maximum Temperature</u>	<u>Minimum Temperature</u>
May	3.05	92	58
June	13.73	91	50
July	5.72	95	56
August	9.83	97	55
Total	32.33	Extremes 97	Minimum Temp. 50

The period was one of thunderstorms and heavy rains with a near record rainfall. During the four months 32.33 inches of rain fell; 15.07 inches above normal.

May was the one month with any degree of normalcy - temperatures were near normal, precipitation somewhat low. Corn and bean crops received only one cultivation in May.

June was a month of heavy rainfall, the second greatest for any one month since 1910. The mean monthly temperature was below normal. Few crops received cultivation in June.

July was wet and humid with most of the precipitation falling during the first two weeks. Thereafter the land began to dry and farming operations were near normal by the end of the month. This drier period late in July afforded the only opportunity farmers had for replanting crops lost by flood.

Rainfall during August was the second greatest for the month since 1910. Again farming was disrupted and very few of the second plantings were cultivated.

B. Water Conditions

Swan Lake went into the period below operating level 658. It remained somewhat below the desired elevation until June 15 when water management operations called for a drawdown to elevation 656. Heavy rains brought the lake up rapidly late in June to 659; spillway elevation. Swan Lake passed water over the spillway for ten days, then slowly receded, again reaching operating level 656 in late July. Shortly after Swan Lake dropped below spillway elevation it was necessary to

close off the outlet through Levee No. 5 to prevent backwater from Grand River from entering the lake. This did occur to some extent through the spillway. Fortunately, during the interval when Grand River was at its highest and prevented discharge through the Swan Lake outlet, no rains of any magnitude fell on the Swan Lake watershed.

Silver Lake also went into the period lower than desired but reached operating level 665 May 12. In mid-June the elevation was lowered to 663 as planned. By June 26 heavy rains brought Silver Lake up to spillway elevation 667 despite the fact that the outlet structure was kept wide open. Silver Lake continued to spill water until July 13 and did not return to operating level 663 until August 16. Highest measured elevation was 667.8 on July 6. There was considerable erosion on the one mile of Levee No. 3 between the spillway and water control structure. Fortunately winds were primarily from the west during the period when Swan Lake was at its highest and wave erosion was much less severe than had winds been from the east. With the 4' x 4' water control structure through Levee No. 3 wide open for two months the lake elevations was from three to almost five feet over operating level throughout July and did not draw down to operating level until August 16. This played hob with the volunteer crop of wild millet on the east shore of Silver Lake and sharecrops in that area not normally subject to flooding. Two hundred and twenty-seven acres of sharecrops were flooded out on the east side of Silver Lake and not replanted because the water could not be drawn off early enough. Usually the shoreline flats provide an excellent stand of wild millet when the water is drawn down in June. This year the millet volunteered as soon as the water was off in August, consequently the crop will be very late and stands a good chance of being nipped by frost.

The damage to levees and the loss of wild millet and sharecrops east of Silver Lake due to our inability to draw the lake down more quickly emphasizes the need for more adequate water control.

Grand River came out of its banks in late June. It inundated the lowlands and backed up into the South Pool area and the lower reaches of the Swan Lake unit north of Elk Creek. It remained up for almost two weeks. Of 320 acres under sharecrop permit in the South Pool area only 20 acres of beans survived the flood. Unit 2 A, 4 A and 5 A, a total of 112 acres in the Swan Lake area, were also taken out by Grand River backwater.

C. Fires

There were no fires on the refuge during the period.

II WILDLIFE

A. Migratory Birds

1. Populations and Behavior

The summer resident waterfowl population was very low.

Geese

No Canada geese were known to have nested on the refuge. A flight of seven geese were observed over the refuge in July and a pair was twice seen in August. These were thought to be a portion of the Fountain Grove flock which are now on the wing.

Four Canada geese, an adult pair and a young male and female, were taken to the Rice Lake State Refuge, Lake Mills, Iowa as a nucleus for a flock. These birds were picked up as cripples at Swan Lake after the hunting season.

Ducks

Two mallard broods were observed on the refuge - the same number seen last year. However, few ducks were observed on the wing in July and August and total production for the refuge and surrounding area is considered to be about 100 birds, less than 1950 and 1949. No wood duck broods were observed. Reports from the Fountain Grove Wildlife Management Area five miles distant indicate that a considerable number nested in this vicinity as a concentration of 50-100 "woodys" was attracted to flooded pin oak flats in August.

Migrant blue-winged teal arrived August 20, earlier by two weeks than in 1950.

Water, Marsh, Shorebirds, etc.

Nesting populations of shorebirds - killdeer, spotted sandpipers and king rails remained about the same. Sora rails were down from last year's high.

Upland plovers became increasingly common toward the end of August.

Great blue herons were observed occasionally throughout the period. Numbers on the refuge increased during August. Green herons were seen infrequently. White pelicans did not stay the summer as they did in 1950 and 1949. A small number arrived August 31.

Doves

The population of mourning doves on the refuge and in the vicinity was again high this year, although down somewhat from the high of the previous two years. Production in this area was good with a number utilizing the cedar and plumb trees around refuge headquarters. One brood of two near the manager's residence came off August 31, the day before the dove season opened.

2. Food and Cover

Food and cover conditions during the period were excellent for

the small summer resident population and the few migrants that arrived in August.

Chufa and rice cut-grass were especially favored by the heavy rainfall and high moisture content of the soil. Chufa formed dense stands in several of the flooded out fields in the South Pool area. Ditches, borrow pits and swampy areas were taken over by one of the best stands of rice cut-grass observed on the refuge.

Fields over the entire refuge were "peppered" with wild millet. However, in only a few areas did it form dense stands. One such area was the ten acres around refuge headquarters in grass. Rainfall was so heavy that conditions for millet on this area were more favorable than for the grasses and legumes that heretofore have occupied this land. We plan to combine millet seed from this area. Conditions on the flats along the east side of Silver Lake were both favorable and adverse for the production of wild millet. As explained under the Water Conditions section of this report, drawdown of Silver Lake was not completed until August 16; consequently wild millet production on several hundred acres of marginal area will be very late, and the seed crop questionable. Approximately 225 acres of sharecrops east of Silver Lake on the higher ground ~~was~~ flooded out this year. This land was cultivated and provided a very favorable seed bed for volunteer wild millet. An estimated 150 acres of this land produced an excellent stand.

Conditions were especially favorable for the production of smartweed this year. Several fine stands were located on the refuge which will be combined. (See photo #1)

3. Lead Poisoning and Other Diseases

There was no evidence of disease during the period.

B. Upland Game Birds

1. Population and Behavior

Bob White Quail

Quail went into the nesting season with the largest population of paired birds in recent years. Floods in the bottoms and heavy rains have apparently had their effect. Paired birds were still common in mid-August. Few broods were observed on the refuge. Those seen were late, apparently from second nesting attempts.

Prairie Chickens

Prairie chickens were heard on their "booming grounds" west of Secondary headquarters in April and apparently some nesting occurred on the refuge. There were no sight records of this species during the period.

2. Food and Cover

There was a lush growth of grasses and legumes with a heavy seed crop as a result of the unusually heavy precipitation. Both food and cover conditions for bob-white quail and prairie chickens are considered unusually good.

3. Disease

There was no evidence of disease.

C. Big Game Animals

1. Population and Behavior

The white-tail deer population continued high on the refuge and surrounding vicinity as evidenced by occasional sight observations and the abundance of fresh tracks. Several does with fawn were seen. There was no indication that floods in the south pool area had a deleterious effect on the deer herd. There appears to be a deer concentration area along the Wabash railroad south of headquarters or a crossing across the railroad. According to the railroad section crew six train kills have been observed this year in one restricted area.

2. Food and Cover

Food and cover were abundant throughout the period.

3. Disease

There was no evidence of disease.

D. Fur Animals, Predators, Rodents and other Mammals

Raccoons continue high in numbers with no appreciable change from the preceding period. We have no indication that raccoons on the area are dying off from disease as is the case elsewhere in the state.

Despite the heavy 'coon population there does not appear to be any serious conflict with other forms of wildlife.

There was no change in the status of muskrats on the area.

Striped and spotted skunks continued common.

Red foxes are numerous on and off the refuge. Along with some of the 'coons they continue to make chicken farming risky business.

No coyotes were observed but occasional tracks indicate the presence of a few individuals on the refuge.

Cotton-tail rabbits continued numerous.

E. Predacious Birds, Including Crows, Ravens and Magpies

Great-horned owls, barred owls, sharp-shinned hawks, cooper's hawk, sparrow hawks and marsh hawks were present in usual numbers. Crows were more abundant.

F. Fish

There was no noticeable change in the fish population of Silver or Swan Lake. Most of the fish are of the rough variety. Catches checked again showed the fish taken from Silver Lake to be in good flesh while those from Swan Lake were dwarfed and emaciated, indicative of an overstocked condition. No doubt the overflow from Grand River substantially increased the Swan Lake population again this year.

III REFUGE DEVELOPMENT, MAINTENANCE

A. Physical Development

Approximately 45 acres of land supporting a dense stand of slough grass (*spartina pectinata*) interspersed with woody species was reclaimed during July and August. This is one of the first attempts at reclaiming land from almost pure stands of slough grass. Due to the dense, matted nature of the root system of this grass it was found that the Rome "bush and bog" plow was unsuitable for plowing this type of ground. The plow, which works quite satisfactorily on weeds and small woody species, will not turn slough grass sod completely over. It slices through the sod and as the plow passes, the sod drops back in the original furrow. This makes it extremely difficult to handle with a disk. The acreage reclaimed was mowed and burned off and then plowed with 3 bottom mouldboard plows. (Photo #5) Inclement weather drastically curtailed operations.

Following is a list of maintenance jobs accomplished during the period.

The 1948 Jeep pickup was given a complete engine overhaul, new clutch, front springs, spring bushings, and paint job.

The valves were ground on the Oliver tractor.

New thermostats were installed in the D7, the timing was checked, the governor adjusted and a new shaft and bushings installed in the steering clutch hydraulic control mechanism.

The beam on the Minneapolis-Moline mouldboard plow was straightened. Miscellaneous repairs were made several times to this plow and the McCormick-Deering plow.

The Oliver mower was repaired five times.

The truck scale at the White Barn was cleaned and put in operating condition by completely rebuilding the 8' x 16' scale platform. This

enables us to weigh our seed as it is brought in to the White Barn and will take the guesswork out of amount of smartweed and millet seed harvested and available for transfer.

A trip was made to Crab Orchard refuge after masonite to seal in the walls and ceiling of the west end of the Service Building.

The "one lunger" used to power the grain elevator in the White Barn was replaced with a four cylinder, 10 H.P. motor obtained from Crab Orchard. This reduces elevating time by at least 50%.

The windmill tower at Secondary headquarters was pulled over and stripped of all salvageable lumber and windmill parts. This was done under protest from a hive of bees occupying the tower. Everyone engaged in this operation was stung at least once as were a few casual onlookers.

A new hot air conduit was installed from the furnace to the shop in the Service Building. It is planned to mount a fan in the conduit to provide better circulation.

Asphalt tile was laid in the office, batchelor quarters, the kitchen, hall and two bathrooms of quarters No. 1 and the kitchen and bathroom of quarters No. 2.

A full set of flashboards was constructed for the No. 3 Levee water control structure and six new boards for the No. 5 Levee control structure.

The recognition sign at the northwest entrance was treated with linseed oil and the lettering and "goose" repainted.

The headquarters barn, Service building and the two gables of quarters No. 1 were given a coat of white paint.

The bathroom of quarters No. 1 was painted.

One hundred and sixty rods of partition fence was rebuilt and the wire restretched at Secondary headquarters.

New posts were set at the east refuge entrance and the gate remounted.

Two hundred and fifty-five yards of gravel was received under contract. This was placed on the main entrance road and headquarters area and the road graded twice.

Two thousand lineal feet of ditch were cleaned and one culvert repaired north of White Barn.

Rotted flooring and floor joist were replaced in the bachelor quarters prior to laying asphalt tile.

The refuge mailbox post was set in concrete.

B. Plantings

1. Aquatic and Marsh Plants

Two and one-half miles of dike toe and shoreline on the west and south sides of Silver Lake were hand broadcast to Jap millet in June. These plantings met with little success as all were under water for several weeks in July and August when Silver Lake was above operating level.

Bulrush was broadcast along the north shore of Swan Lake from the White Barn west to the mouth of Tough Branch in favorable locations.

Millet planted on cultivated lands is reported on under the heading Cultivated Crops.

2. Trees and Shrubs

No plantings were made during the period.

3. Upland Herbaceous Plants

No plantings were made during the period.

Serecia lespedeza broadcast along the north side of the No. 5 Levee in 1948 has firmly established itself and is showing good growth. It was not known until this spring that this planting had survived.

4. Cultivated Crops

As a result of floods during June and July crops on over 600 acres of refuge sharecrop land was lost this year. Only 163 acres of this land was replanted by permittees because of the short growing season remaining. Beans were replanted up to July 30 which is exceptionally late for this locality. Wet, cool weather during August has considerably retarded growth of replantings and it is questionable if these crops will mature before frost. The growing season to date has been characterized by periodic heavy rains which have made crop cultivation almost impossible (both first and second plantings). In most instances corn and beans were cultivated but once this year, while some were too wet to cultivate at all. Very few farmers were able to spray their corn.

The loss by inundation was partially offset by the Fish and Wildlife Service aerial broadcast of Jap and White Proso millet July 19 on 107 acres of flooded out crop land which was free of vegetation and provided a suitable seed bed. Aerial plantings are coming along nicely. The Jap millet is now waist high and heading out. (Photo #3 and 4). The White Proso millet looks less promising; however our

experience with this millet is that it is slower growing but comes through with heavy seed production.

Eighty acres of Jap and White Proso millet was planted by refuge personnel early in June. This has headed out and promises to run 800 pounds to the acre. Repeated lashings by storms have lodged much of the Jap millet and it is coming up to second growth. It will be very difficult to combine.

Browse plantings of winter wheat (both by permittees and refuge personnel) have been delayed by an exceptionally wet August. Rainstorms have been of such frequency that equipment could not be operated in the field most of the month. In all probability we will be short of goose browse this fall.

The estimated total of agricultural crops (corn, soybeans, milo, Jap and White Proso millet) available for waterfowl amount to 11,442 bushels if none is harvested. This is 17% below the average of the last three years.

C. Collections

1. Seed or other Propagules

Smartweed and wild millet are unusually late in maturing this year and none had ripened sufficiently for combining at the close of the period.

The smartweed crop is very good and we should have a heavy harvest if the bottom lands dry out sufficiently for us to combine.

Wild millet in stands dense enough for harvesting is scarce off the refuge. It will probably be necessary to harvest most of the wild millet required for transfer from refuge lands east of Silver Lake.

D. Receipts of Seed and Nursery Stock

None was received during the period.

IV ECONOMIC USE OF REFUGE

A. Grazing

The following grazing permits were in force during the period covering mixed cattle:

<u>Permit Number</u>	<u>Name</u>	<u>Period of Use</u>	<u>AUM's</u>	<u>Grazing Unit</u>
Swan Lake #20	Arch McGilvray	5-1 to 11-30	215	2G
Swan Lake #19682	Reams Downey	5-1 to 11-30	25	4G

There was no indication that grazing conflicted with wildlife.

B. Haying

Ten acres of hay was harvested under permit in unit 1-H, with the permittee taking all the hay and refuge to receive one-third of the hay acreage in some other crop.

V FIELD INVESTIGATION

The following data on raccoon tagging operations at Swan Lake this spring was furnished by Mr. McGlauchlin, University of Missouri graduate student, who has taken over the refuge 'coon study where Mr. Sanderson left off with the completion of his MA thesis:

<u>Date Taken</u>	<u>Weight</u>	<u>Sex</u>	<u>Tag #</u>	<u>Remarks</u>
3-23-51	9.7	M	411	Pin oak, out of den
"	9.4	F	406	Soft maple, out of den
"	12.2	M	416	Pin oak, out of den
"	10.0	F	405	Pin oak, in den
"	10.0	F	410	Pin oak, in den
"		F	413	Pin oak, in den, 1, 2 LF toe clipped
"	10.6	F	421	Pin oak, in den, 1, 3 LF toe clipped
"	8.7	M	422	Elm, in den
"	13.1	F	530	Elm, in den, 1 LF, 5 RH, toe clipped
"	8.7	M	536	Elm, in den, 2 LF, 5 RH, toe clipped
"	7.8	M	537	Elm, in den, 3 LF, 5 RH, toe clipped
4-21-51	13.2	M	545	H. Locust, in nest 4 LH, 5 RH
"	18.1	M	535	Cottonwood, out of den, 5 LH, 5 RH
"	14.1	F	526	Soft maple, in den, 1 RF, 2 RH
"	10.0	F	546	Elm, in den, 2 RF, 5 RH, Toe clipped
"	11.3	F	527	Elm, in den, 3 RF, 5 RH, toe clipped
"	14.4	F	534	Soft maple, in den, 4 RF, 5 RH
"	10.0	F	539	Bur oak, in den, 5 RF, 5 RH, toe clipped
"	10.3	F	449*	Bur oak, out of den
"	10.3	F	541	Bur oak, out of den, 5 RF, 3 RH
"	12.3	M	547	Pin oak, out of den, 1 LF, 4 LH
"	12.0	F	531	Pin oak, out of den, 2 LF, 3 LH
5-12-51	15.7	M	538	Elm, out of den, 1 LH, 2 LF
"		M		Elm, in den, litter of young, 1 LF, 1 LH
"		M		Elm, in den, litter of young, 2 LF, 1 LH
"		M		Elm, in den, litter of young, 3 LF, 1 LH
"		F		Elm, in den, litter of young, 4 LF, 1 LH
"		F		Elm, in den, litter of young, 5 LF, 1 LH
"		M (?)		Elm, in den, litter of young, 1 RF, 1 LH

* Retake tagged 2-9-49. LF stands for left front foot; RH stands for right hind foot.

One female 'coon was found dead, cause of death was not determined.

All the raccoon tagged were taken along Elk Creek from the point it enters the refuge at the northeast corner to where it leaves the refuge on the west side. This should represent a fair sample of the 'coon on

the refuge. It is hoped that Mr. McGlauchlin will get back this fall to tag more 'coons before and during the hunting season to aid in the study of the relationship of the refuge raccoon population to hunter's take in the locality.

Waterfowl band returns received during the period are:

<u>Species</u>	<u>Number Returns</u>	<u>Locality</u>
Canada goose	3	South Dakota
" "	1	Minnesota
" "	22	Missouri
" "	4	Ontario
" "	7	Manitoba
" "	1	Oklahoma
Mallard	1	Saskatchewan
"	1	Nebraska
"	2	Tennessee
"	7	Arkansas
"	1	Minnesota
"	2	Louisiana
"	1	North Dakota
Pintail	1	Utah
"	1	Louisiana

VI PUBLIC RELATIONS

B. Refuge Visitors

	<u>Title</u>	<u>Date</u>
Mr. F. C. Gillett	Regional Supervisor	7-23-51
Mr. Clair T. Rollings	Economic Use Supervisor	7-23-51
Mr. Gerald R. Massie	Resource & Development	8-2-51
Mr. Perkins & Crew	Fish Tagging Survey	8-13-51
Mr. Bernie Palas	U. S. Game Management Agent	8-16-51
Mr. Wesley Nucome	U. S. Game Management Agent	8-16-51
Mr. E. R. Carpenter	State Conservation Agent	Numerous
Mr. Paul B. Johnson	State Conservation Agent	Numerous
Mr. Charles E. Shanks	State Waterfowl Biologist	Numerous
Mr. Lee R. Crail	State Biologist	Numerous
Mr. Herbert H. Dill	Refuge Manager	8-27-51
Mr. Robert W. Dougall	Regional Engineer	5-27-51
Mr. Howard Wight	Biologist, Dove Research	8-15-51

C. Refuge Participation

Refuge manager Dill put on a program for the Fellowship Club in Mendon, May 16.

The Swan Lake Sportsmens Club suspended activities during the summer and has not as yet met this fall.

E. Fishing

Fishing pressure and take approximated that of the 1950 season in Silver Lake. Ninety percent of fishing took place in the borrow pit on the west side of Levee No. 3 near the Silver Lake outlet. Good catches of carp, bullhead and an occasional small channel cat were the rule.

A keen interest is shown by the public in this fishing area. Enthusiasts travel from considerable distance to avail themselves of these fishing waters. According to many checked the fishing is better on Silver Lake than anywhere else in this locality.

A number of parties requested permission to seine for rough fish during the seining season; July 15 to August 15. Refuge personnel accompanied all such parties on the refuge. The take was dissappointing; approximately 100 pounds, as compared with 500 the preceeding year.

Swan Lake catches were small and many of the fish in poor condition. Dispite the over-population of fish in Swan Lake and their resultant poor condition, they do not take bait readily.

One day was spent with State Conservation Officer Carpenter salvaging fish trapped below the Silver Lake spillway when the water receded.

F. Violations

None apprehended.

VII OTHER ITEMS

A. Items of Interest

1. Personnel

Mr. Herbert H. Dill transferred to Sand Lake Refuge, South Dakota as refuge manager June 28. Mr. Dill's very able supervision of Swan Lake contributed much to the public recognition of Swan Lake Refuge and the furtherment of refuge management. The writer arrived at Swan Lake from the Minidoka Refuge in Idaho June 29 to assume Mr. Dill's duties.

B. Photographs

The photographs following the report were taken with personally owned camera and film.

Respectfully submitted,

Robert F. Russell

Robert F. Russell
Refuge Manager

September 18, 1951

Approved





Twenty acres of Smartweed east of South Pool
spillway. 8/30/51. Photo # 1.



Fifty acres of Dwarf Milo Maize south of
White Barn on Swan Lake. (sharecrop)
8/30/51. Photo # 2.



Japanese millet aerial broadcast July 19. 8/30/51.
Photo # 3.



Field of Japanese millet aerial broadcast
July 19. 8/30/51. Photo # 4



Portion of 45 acres reclaimed for
farming north of Elk Creek in
Section 31. 8/30/51. Photo # 5.

WATERFOWL

Refuge Swan Lake Months of May to August 1951 194

(1) Species Common Name	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Young Produced		(6) Total
	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
I. <u>Swans:</u> Whistling swan									
II. <u>Geese:</u> Canada goose Cackling goose Brant White-fronted goose Snow goose Blue goose	7*	5-1	10	7-5	5	8-31	Residents		25
	2	5-1			2	5-10			2
III. <u>Ducks:</u> Mallard Black duck Gadwall Baldpate Pintail Green-winged teal Blue-winged teal Cinnamon teal Shoveller Wood duck Redhead Ring-necked duck Canvas-back Scaup Golden-eye Buffle-head Ruddy duck			75	8-31			2	50	75
			200	8-20	200	8-31			200
			100	8-31				(?)	250
IV. <u>Coot:</u>									

* Cripples kept in display pool that were picked up ~~and~~ during and after hunting season. Four transferred to Rice Lake State Refuge, Lake Mills, Iowa. in June.

3-1750
(July 1946)

(over)

Form NR-1

SUMMARIES

Total Production:

Geese -

Ducks 50

Coots -

Total waterfowl usage during period 552

Peak waterfowl numbers 385

Areas used by concentrations -

Principal nesting areas this season -

Reported by Robert J. Russell

INSTRUCTIONS

- (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) First Seen: The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.
- (3) Peak Concentration: 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 in the reporting period.
- (5) Young Produced: 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.
- (6) Total: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations depending upon the nature of the migrational movement.

Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since these data are necessarily based on an analysis of the rest of the form.

3-1751
Form NR-1A
(Nov. 1945)

MIGRATORY BIRDS
(other than waterfowl)

Refuge Swan Lake

Months of May

to August 1951

194

(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. <u>Water and Marsh Birds:</u>										
White Pelicans	15	8-31	15	8-31	15	8-31				25
Great Blue Herons	25	5-1	150	8-31	150	8-31				150
Green Herons	2	7-15			1	8-21				5
American Egrets	10	5-1	Summer residents							

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. <u>Doves and Pigeons:</u>					
Mourning dove	4	5-1	Common Summer Resident		2,500
White-winged dove					
IV. <u>Predaceous Birds:</u>					
Golden eagle					
Duck hawk					
Horned owl	5	5-1	Common Summer Resident		50
Magpie					
Raven					
Crow	10	5-1	Common Summer Resident		200
Coopers Hawk	1	8-10			5
Shapp Shinned Hawk	2	5-1			6
Sparrow Hawk	2	7-11			25
Marsh Hawk	3	6-31	Common Summer Resident		16
Barred Owl	1	5-3	Common Summer Resident		20
Reported by <i>Robert F. Russell</i>					

INSTRUCTIONS

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

3-1752
Form NR-2
(April 1946)

UPLAND GAME BIRDS

1613

Refuge Swan Lake

Months of May to August 1951, 194

(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'v'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		7	2	150					500	
Prairie Chicken		100	1						Unknown	

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

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.

REFUGE GRAIN REPORT

Refuge.....Swan Lake.....

Months of May thru August 1941.

(1)	(2)	(3)	(4)	(5)				(6)	(7)		
VARIETY	ON HAND BEGINNING OF PERIOD	RECEIVED DURING PERIOD	TOTAL	GRAIN DISPOSED OF				ON HAND END OF PERIOD	PROPOSED USE		
				TRANS- FERRED	SEEDED	FED	TOTAL		SEED	FEED	SURP.
Corn	150		150				0	150			150 Trap Bait
Pawnee Winter Wheat	0	75	75				0	75	75		

- (8) Indicate shipping or collection points.....Sumner, Missouri.....
- (9) Grain is stored at.....White Barn.....
- (10) Remarks.....

NR-8a

REFUGE GRAIN REPORT

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

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

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