BRANCH OF WILDLIFE REFUGES NARRATIVE REPORTS

MR. SALYER 1 CS _____ MISS BAUM _____

MR. CRAWFORD _____

Operations

MR. ~~REGAN~~ _____ MR. ~~DuMONT~~ PAD _____

Land Management

MR. ~~ACKERKNECHT~~ _____ ~~DR. MORLEY~~ _____

Habitat Improvement

MR. BANKO _____ MR. STILES _____

MR. KUBICHEK _____

Stenographers

_____ _____

REFUGE SWAN LAKE PERIOD May - August 1958

Swan Lake National Wildlife Refuge

INDEX

Narrative Report
Swan Lake National Wildlife Refuge
May - August , 1958

PERMANENT PERSONNEL

Leo M. Kirsch ..... Refuge Manager

Marvin F. Lentz ..... Refuge Clerk

William H. Thornsberry ..... Foreman, Mixed Gang

TEMPORARY AND INDEFINITE EMPLOYEES

Floyd A. Holland ..... Maintenance Man

Benny N. Howerton ..... Operator General

Beverly H. Johnson ..... Laborer

Roy T. Warren ..... Maintenance Man

Ervin Windsor ..... Maintenance Man

Narrative Report
Swan Lake National Wildlife Refuge
May - August, 1958

I GENERAL

A. Weather Conditions

The following table presents weather conditions for the period and compares precipitation records with 40 year averages:

	Precipitation This Month	Average	Max. Temp.	Min. Temp.
May	8.04	4.52	88	34
June	6.46	4.87	96	49
July	17.77	3.92	92	58
August	2.39	3.67	93	45
Totals:	34.66	16.98	Extremes: 96	34

Rainfall this period was more than 100 percent greater than average. July alone produced more rain than is normal for the entire period.

Temperatures were lower than normal, but high humidity made any temperature exceeding 80 degrees feel very uncomfortable.

B. Habitat Conditions

1. Water

Abnormally heavy rainfall during the first two months of the period made water control difficult, but by the end of June all units excepting Silver Lake were near the approved water level. Silver Lake was much lower than the approved level at that time because of a draw down to facilitate construction work.

Torrential rains during mid-July sent a disasterous flood down the streams flowing into the refuge. This flood destroyed between 80 and 85 percent of the crops on the area and damaged most of the remaining crops. In addition to the damage to croplands the flood did approximately $12,000.00 worth of damage to roads and structures. The hardest hit area was the Silver Lake levee which was washed out in two areas and badly damaged at many points along its entire length. The flood also did a great deal of damage to the State public hunting road along the Yellow Creek bottoms. This road was washed out in a number of places and most of the gravel and rock surfacing material was washed

from the road. The State also lost many blinds in the public hunting area. The flood also destroyed most of the natural growing waterfowl foods on the area. Heavy stands of wild millet in Swan Lake and on the refuge rice fields were completely killed out.

The mid-July flood had only partially subsided when heavy rains again sent flood waters into the area. The second flood destroyed approximately 220 acres of newly seeded jap millet and did some damage to another 220 acres of this millet. The second flood also did a small amount of damage to the south pool levee by washing gravel off the road and cutting small gullies across the top of the levee.

Dry weather during August aided in drying out flooded areas and permited us to draw flood waters out of all pools. Silver Lake was again pulled down to aid construction and Swan Lake and the South Pool were nearing the approved level by the end of the period.

2. Food and Cover

In an attempt to partially compensate for flood losses, refuge and State personnel have planted 800 acres of wheat on the area. We expect to have 1,000 acres of wheat growing by the time the geese arrive. In addition to this the refuge and the State have cooperated in aerial seeding 770 acres to Japanese millet. Approximately 580 acres of this millet is expected to produce some seed. Wild millet has come up in many of the refuge fields flooded during July and August and will produce some food.

Permittee farming will produce only 100 acres of corn and milo for the refuge this year. We have 67 acres of wide row corn which although damaged will produce some food for waterfowl.

Comparing this year with the past five years, we will have about twice as much browse and one-fourth as much grain. It will be interesting to see if the geese will hold here with so little high starch and protein food available to them.

Food for other game on the area is believed to be sufficient for the populations we have. Cover for upland game is scarce and mostly of very poor quality.

II WILDLIFE

A. Migratory Birds

The May through August period on this area is characterized by low waterfowl populations. The summering population consisted of approximately 40 sick, lame or lazy Canada geese, 40 to 50 mallards, mostly in the same catagory, 20 to 50 wood ducks, and a handfull of coots.

A few broods of wood ducks and mallards were seen, but total

production on the area is insignificant. A check of 12 wood duck nesting boxes did not reveal a single nesting attempt by these ducks, but showed considerable use of the nest boxes by hornets, wasps, and woodpeckers.

The last of the spring migrants left Swan Lake during the first two weeks of May. The first fall migrants appeared during the week of August 3 to 9, when blue-winged teal began to move through. These were followed on August 20th by pintails, and on August 26 by shovelers.

The movement of early migrating ducks during August did not result in a large build-up of birds on the area. It appeared as though there was almost a constant movement of birds through the area especially during the last 20 days of the period.

B. Waterbirds

Large numbers of blue herons spent the summer on the area as did five white pelicans. This is the first record, at least in recent years, of white pelicans summering here. These birds apparently made no attempt to nest.

Approximately 150 American egrets moved into the area during June and July. These birds began leaving during early August and had completely left the area by the end of that month.

Other water birds using the area during the period were green herons, cormorants, yellow crowned night herons, and snowy egrets. The flood and an excellent frog crop made feeding conditions ideal for waders this period.

C. Shorebirds

This area is not good shorebird habitat and no large numbers of such birds were observed. The following shorebirds were seen on the area during the period: Killdeer, black tern, spotted sandpiper, upland plover, greater yellowlegs, and lesser yellowlegs.

D. Doves

A total of 67 nestling doves were banded by refuge personnel. There are a number of good nesting areas on the refuge the two best [redacted] being around the headquarters sites. I have almost always found the best dove nesting areas in close proximity to human activity. This relationship must be tied up in predation, food, water, type of habitat, or a combination of these factors.

Large numbers of doves were feeding on refuge wheat fields and along the ends of these fields where wheat was spilled during seeding operations during the last month of the period.

E. Upland Game Birds

No upland game bird is abundant on the area. Bob-white quail are found on most of the higher land along the north and east sides of the refuge. The largest concentration of these birds is in the grassland area near secondary headquarters. Lack of suitable nesting habitat is believed to be the major factor limiting quail numbers on the area.

Wild turkeys are known to be present on the area but are not common and probably did not reproduce this year.

Prairie chickens have not been seen on the area. We believe we have some habitat which would support chickens now but will probably have to re-introduce these birds to get them started again.

F. Big Game Animals

White-tailed deer are the only big game animals on the refuge. There was probably some loss of fawns during the July flood although no dead deer were seen on the refuge. Two flood killed fawns were seen on off refuge areas and reported to us, and we located and rescued a fawn on the Silver Lake levee which would most likely have died if we had not brought him in and fed him. This fawn was never kept penned, yet has made daily visits to headquarters for milk ever since we brought him in. We hope to discourage this practice just as soon as the fawn becomes mature enough to feed himself.

The total deer population during this period is estimated to have been between 40 and 50 animals.

D. Fur Animals, Predators, Rodents and Other Mammals

The red fox population on the refuge is still infested with disease. Sick and dead foxes have been observed periodically all summer.

Raccoon are plentiful on the area and did considerable damage to refuge corn fields this summer. They were especially active during the flood period when many of these animals concentrated on the high land around headquarters and fed on the cornfields which were not covered by flood waters.

The flood during July destroyed most of the muskrat houses on the refuge and probably drowned or washed out many of the young muskrats.

The beaver population apparently did not suffer much ill effects from the flood. These animals are increasing on the refuge and we anticipate trouble with these animals in future years.

Other animals in this catagory present on the refuge but not plentiful are: skunks, oppossum, Franklin's ground squirrel, marmots, and mink.

Fox and grey squirrels are plentiful on the wooded portions of the refuge, and cotton-tails are common on the highland grass and brush areas.

E. Hawks, Eagles, Owls, Crows, Ravens and Magpies

Bald and golden eagles were present on the refuge early in the period but apparently all moved out during the summer. A golden eagle was seen on August 25th. This was apparently the first fall migrant to reach the area.

Great horned owls, crows, Cooper's hawks, red-tailed hawks, sparrow hawks, and marsh hawks have all been present on the refuge during the entire period.

G. Fish

Fish populations on the area are apparently high. The most common fish are: carp, buffalo, channel cat, black bullhead, yellow bullhead, flathead cat, gar, drum, crappie, and hickory shad.

Fishing pressure was fairly heavy on Swan and Silver Lakes during the period. Success varied from good to very poor. The highlight of the fishing season was the snagging of buffalo at the Silver Lake distribution basin during May. It is estimated that over 4,000 pounds of these fish were removed from that area during a four day period. Catfishing was good early in May and bullhead fishing was good off and on all summer. One Sumner fisherman took nine large flathead catfish from Swan Lake during the season. His largest fish weighed 28 pounds. One other Sumner fisherman, a veteran of 70 years, caught five channel cat on spinning rod in one day that totaled 25 pounds.

H. Reptiles

Refuge and State personnel killed a number of rattlesnakes on the refuge during the period. In addition to rattlers we have large numbers of common water snakes and garter snakes on the area.

I. Disease

The only disease noted during the period was among foxes and is briefly discussed in section D.

III REFUGE DEVELOPMENT AND MAINTENANCE

A. Physical Development

The work of repairing slopes and riprapping Silver Lake levee was halted by the floods. This work and additional work ordered because of flood damage was began again in August. Rapid progress was made during August and at the end of that month 90 percent of the dirt work and 15 percent of the rock work had been completed.

B. Plantings

3. Upland Herbaceous Plants

A 15 acre area in unit G-3 was planted to ladino clover and an excellent stand obtained. We hope to learn whether the geese in this area will use this plant as well as they are reported to in areas in Illinois.

The grass and clover seeded in unit G-2 has not been in long enough to evaluate results completely. The clover looks good but little or no grass had appeared at the time of the last examination. Some of the grass seeded in this unit a year ago was killed by floods this summer.

4. Cultivated Crops

Permittee farmers planted corn, milo and soybeans on their refuge acreage this year. Soybeans were drilled on 20 percent of their lands to be plowed under and sowed to wheat as a soil building treatment. Refuge farmed acreage was treated in a similar manner. State farming consisted entirely of wheat, grass and legume planting.

As previously mentioned in this report the July flood destroyed most of the crops on the area. Approximately 200 acres of corn, 30 acres of milo and 150 acres of soybeans survived this flood. The refuge share of crops this year will be approximately 100 acres of corn and milo from permittee farming.

Since the flood the refuge and the State have cooperated in a crash program to provide some food for waterfowl. Under this program 770 acres of Jap millet were planted, and 800 acres were disced and planted to wheat. We expect to have 1,200 acres of wheat and about 580 acres of Jap millet available for waterfowl when this program is completed. Much of the Jap millet is weedy and not in good stands. The best results from aerial seeding were attained on lands which had been completely denuded of vegitation by the flood. Jap millet is apparently a very poor competitor.

C. Collections and Receipts

1. Seed or Other Propagules

Refuge personnel combined 3,000 pounds of brome grass seed on unit G-4 during the period. This seed will be used to renovate pasture lands and seed roadsides and levees on the area.

Wheat seed was trucked to Swan Lake from the following sources and in the amounts listed below:

Bushels	Source
1,240	Squaw Creek National Wildlife Refuge

Bushels	Source
230	Trimble Wildlife Management Area
550	Kirwin National Wildlife Refuge
60	Fountain Grove Wildlife Management Area
Total.... 2,080	

All of this wheat has been or will be planted on the refuge this fall to provide browse for geese.

F. Other Uses

The Goose Hill Lodge has not been operated during the period and is still in a questionable position so far as ownership is concerned.

IV RESOURCE MANAGEMENT

A. Grazing

No grazing is presently permitted on the area. Pasture units with one exception are in very poor condition as yet from past abusive use.

V FIELD INVESTIGATION OR APPLIED RESEARCH

Nothing to report.

VI PUBLIC RELATIONS

A. Recreational Uses

The car counter at headquarters registered 7,500 vehicles during the period, and this counter was not working for an unknown length of time. If we omit 2,500 vehicles for refuge personnel and permittee travel and ignore the time the counter was not working we still come up with 5,000 vehicles visiting the headquarters area. This is an average of slightly more than 41 visiting cars per day, in addition to normal refuge and permittee travel. Many of these visitors do not stop but simply drive to the tower and then leave, but enough of them stop to keep things in a turmoil around headquarters on many days.

In addition to sight seeing many refuge visitors come to fish or to picnic at the refuge picnic area. It is estimated that approximately 6,000 fisherman days were spent on the area during the period, and that perhaps another 15,000 to 20,000 visits were made by sight-seers and picnicers.

B. Refuge Visitors

Name	Address	Purpose of Visit	Date
Ted Shanks	Columbia, Missouri	Banding Schedules	5/8/58
Ed Bosak	St. Joseph, Missouri	Law Enforcement	5/8/58
Everett Sutton	Jefferson City, Mo.	Law Enforcement	5/8/58
Bill Crawford	Columbia, Missouri	Tour Refuge	5/13/58
John Appelget	Minneapolis, Minn.	Tour Refuge	5/13/58
James Salinas	Minneapolis, Minn.	Tour Refuge	5/13/58
Ed Bosak	St. Joseph, Missouri	Dove Counts	5/21/58
Harvey Nelson	Minneapolis, Minn.	Inspection	5/21-23
Fred Rush	Crescent Lake Refuge	Tour Refuge	6/6/58
Ted Shanks	Jefferson City, Mo.	FHA Management	6/26/58
Earl Flackne	Carrollton, Mo.	Contract Work	6/30/58
Bob Duderstadt	Carrollton, Mo.	Contract Work	6/30/58
E. C. Johnson	Carrollton, Mo.	Contract Work	7/9/58
Ray Wright	Minneapolis, Minn.	Inspect Levee	7/9-10
Joe Richey	Minneapolis, Minn	Stake Levee	7/9-14
Richard Evans	Minneapolis, Minn	Stake Levee	7/9-14
John Lackman	Minneapolis, Minn	Stake Levee	7/9-14
John Appleget	Minneapolis, Minn	Inspection	8/6-8
Ray Wright	Minneapolis, Minn	Inspection	8/6-8
Joe Richey	Minneapolis, Minn	Stake Levee	8/6-11
Richard Evans	Minneapolis, Minn	Stake Levee	8/6-11
John Lackman	Minneapolis, Minn	Stake Levee	8/6-11
Howard Wight	Columbia, Missouri	Dove Survey	8/18/58
Kenny Saddler	Columbia, Missouri	Phesant Releases	8/18/58
Leroy Korsghen	Columbia, Missouri	Tour Refuge	8/18/58
Dick Vaught	Columbia, Missouri	Banding Program	8/19/58

C. Refuge Participation

There was very little activity in this catagory this summer. The local sportsmens club does not meet during the summer and other clubs apparently are not very active. The refuge manager gave a short talk on waterfowl management at the Mississippi Valley Duck Hunters Association in St. Louis and showed a movie to the Lyons Club at Hale.

VII OTHER ITEMS

B. Photographs

The photo appearing on the following page was made by Marv Lentz.

Respectfully submitted,

Leo M. Kirsch

Leo M. Kirsch
Refuge Manager

September 17, 1958

Approved: L. E. Jorgensen
Chief, Division of Wildlife

Date: 9/24/58

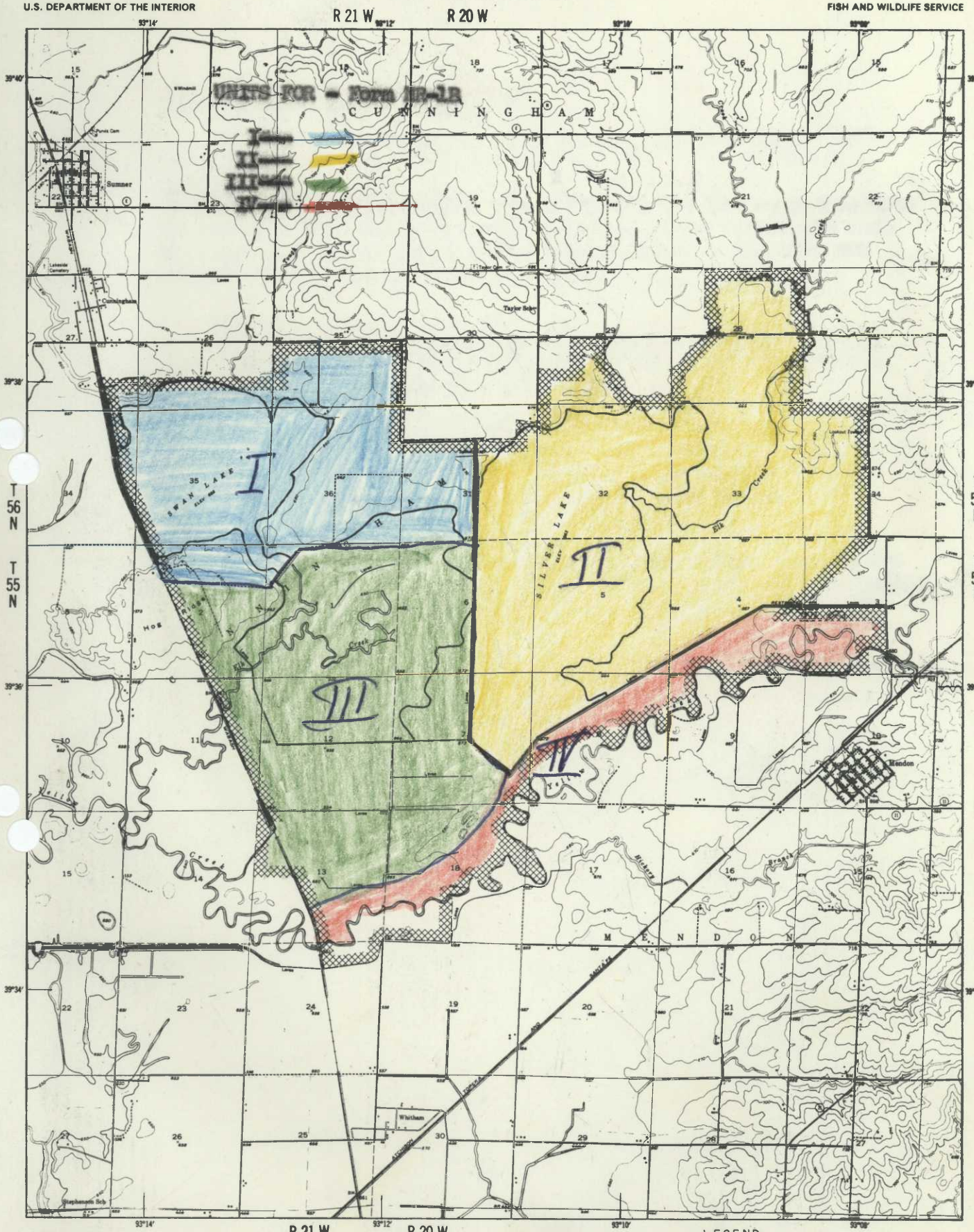
Buck fawn rescued from flood waters. He has taken up residence in the Headquarters Area and is somewhat of a pest at times. Photo by Marv Lentz.

SWAN LAKE NATIONAL WILDLIFE REFUGE

CHARITON COUNTY, MISSOURI

U.S. DEPARTMENT OF THE INTERIOR

FISH AND WILDLIFE SERVICE



COMPILED IN THE BRANCH OF LANDS
BASE BY U.S.G.S.

WASHINGTON, D.C. JANUARY, 1955

FIFTH PRINCIPAL MERIDIAN

LEGEND

REFUGE BOUNDARY

Scale 40 0 40 80 120 CHAINS
¼ 0 ¼ 1 1¼ MILES

CONTOUR INTERVAL 10 FEET DATUM IS MEAN SEA LEVEL

MEAN DECLINATION 1949

TRUE NORTH MAGNETIC N.

73726

Revision of units for - Form 52-B

Swan lake refuge was set up as 3 units for this report during 1957. Such a division left swan lake and silver lake in the same unit and made it impossible to analyze the effect of water management on these units upon waterfowl use. I believe the following divisions are more suitable for this report providing census counts are made at times when all or nearly all of the waterfowl on the area are resting on the lakes or their shorelines:

Unit I
This unit includes swan lake and surrounding uplands. The unit contains approximately 1,800 acres of which 700 are cropland, 200 upland, 100 marsh and 800 water.

Unit II
This unit includes silver lake and surrounding uplands. The unit contains approximately 4,000 acres of which 670 are cropland, 1,000 upland, 330 marsh, and 1,900 water.

Unit III
This unit includes the south pool and surrounding uplands. The unit contains approximately 3,000 acres of which 828 are cropland, 1,000 upland, 372 marsh, and 800 water.

Unit IV
This unit includes Yellow Creek and its bottomlands. The unit covers approximately 2,100 acres of which 400 are cropland, 20 marsh, 1,650 upland, and 30 water.

3-1750
Form NR-1B
(December 1956)

UNITED STATES
DEPARTMENT OF THE INTERIOR
Fish and Wildlife Service

WATERFOWL UTILIZATION OF REFUGE HABITAT

Refuge Swan Lake — For 12-month period ending August 31, 19 58

Reported by Leo M. Kirsch — Title Refuge Manager

(1) Area or Unit Designation	(2) Habitat Type	Habitat Acreage		(3) Use-days	(4) Breeding Population	(5) Production
I	Crops	700	Ducks	No separate figures were available for the period from September 30, 1957 to March 1, 1958 therefore no breakdown by unit was possible.		
	Upland	200	Geese			
	Marsh	100	Swans			
	Water	800	Coots			
	Total	1800	Total			
II	Crops	620	Ducks			
	Upland	1,000	Geese			
	Marsh	330	Swans			
	Water	1,800	Coots			
	Total	4,000	Total			
III	Crops	628	Ducks			
	Upland	1,000	Geese			
	Marsh	372	Swans			
	Water	800	Coots			
	Total	3,000	Total			
IV	Crops	100	Ducks			
	Upland	1,650	Geese			
	Marsh	30	Swans			
	Water	30	Coots			
	Total	2,100	Total			
TOTAL	Crops		Ducks	6,315,000	50	55
	Upland		Geese	5,027,000	0	0
	Marsh		Swans	-	0	0
	Water		Coots	133,000	0	0
	Total		Total	11,475,000	50	55
	Crops		Ducks			
	Upland		Geese			
	Marsh		Swans			
	Water		Coots			
	Total		Total			
	Crops		Ducks			
	Upland		Geese			
	Marsh		Swans			
	Water		Coots			
	Total		Total			

(over)

All tabulated information should be based on the best available techniques for obtaining these data. Estimates having no foundation in fact must be omitted. Refuge totals for all categories should be provided in the spaces below the last unit tabulation. Additional forms should be used if the number of units reported upon exceeds the capacity of one page. This report embraces the preceding 12-month period, NOT the fiscal or calendar year, and is submitted annually with the May-August narrative report.

INSTRUCTIONS

(1) Area or Unit: A geographical unit that, because of size, terrain characteristics, habitat type and current or anticipated management practices, may be considered an entity apart from other areas in the refuge census pattern. Estimated acreage of each unit should be indicated.

(2) Habitat: Crops include all cultivated croplands such as cereals and green forage, planted food patches and agricultural row crops; upland consists of all uncultivated terrain lying above the plant communities requiring seasonal submergence or a completely saturated soil condition a part of each year, and includes lands whose temporary flooding facilitates use of non-aquatic type foods; marsh extends from the upland community to, but not including, the water type and consists of the relatively stable marginal or shallow-growing emergent vegetation type including wet meadow and deep marsh; and the water category includes all other water areas inundated most or all of the growing season and extends from the deeper edge of the marsh zone to strictly open-water areas, embracing such habitat as shallow playa lakes, deep lakes and reservoirs, true shrub and tree swamps, open flowing water and maritime bays, sounds and estuaries. Acreage estimates for each type should be kept as accurate as possible through reference to available maps supplemented by periodic field observations and should agree with unit acreage.

(3) Use-days: Use-days is computed by multiplying weekly waterfowl population figures by seven.

(4) Breeding Population: An estimate of the total breeding population of each category of birds for each area or unit.

(5) Production: Estimated total number of young raised to flight age.

Interior Duplicating Section, Washington, D. C.
1956

8694

3-1750
Form NR-1
(Rev. March 1953)

WATERFOWL

REFUGE SWAN LAKE MONTHS OF May TO August 31, 19 53

(1) Species	(2) Weeks of reporting period 1	2	3	4	5	6	7	8	9	10
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada	30	30	30	30	30	30	30	30	30	40
Cackling										
Brant										
White-fronted										
Snow										
Blue	130									
Other										
Ducks:										
Mallard	50	25	25	30	25	35	30	30	40	40
Black										
Gadwall										
Baldpate										
Pintail										
Green-winged teal										
Blue-winged teal										
Cinnamon teal										
Shoveler										
Wood	50	20	25	25	25	25	30	50	50	50
Redhead										
Ring-necked										
Canvasback										
Scaup	130	10								
Goldeneye										
Bufflehead										
Ruddy										
Other										
Coot:	1,000	100	50	50	30	30	30	10	10	10

Int. Dup. Sec.,
Wash., D. C. 37944

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

WATERFOWL
(Continuation Sheet)

REFUGE SWAN LAKE MONTHS OF May TO August 31, 19 58

(1) Species	(2) Weeks of reporting period 11	12	13	14	15	16	17	18	(3) Estimated waterfowl days use	(4) Production: Broods seen	Estimated total
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada	40	40	40	40	40	40	40	40	4,320	None	None
Cackling											
Brant											
White-fronted											
Snow									390	None	None
Blue											
Other											
Ducks:											
Mallard	40	40	40	40	40	40	40	30	4,310		
Black											
Gadwall											
Baldpate											
Pintail											
Green-winged teal							20	200	1,740	None	None
Blue-winged teal					10	55	410	250	5,325	None	None
Cinnamon teal											
Shoveler								10	80	None	None
Wood	50	50	50	50	50	50	50	50	4,920	3	30
Redhead											
Ring-necked											
Canvasback											
Scaup											
Goldeneye											
Bufflehead											
Ruddy											
Other											
Coot:	6	6	6	6	6	6	6	6	5,289	None	None

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans	None		
Geese	4,729	160	None
Ducks	16,745	580	55
Coots	5,289	1,000	None

SUMMARY

Principal feeding areas

Principal nesting areas

Reported by Leo M. Kirsch

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).

Interior Duplicating Section, Washington, D. C. 37944
1953

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

MIGRATORY BIRDS
(other than waterfowl)

Refuge SWAN LAKE Months of [illegible] to [illegible] 195[illegible]

(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:										
Great Blue Heron	Summer Resident		200	July						
Green Heron	Summer Resident		50	July						
White Pelican	Summer Resident		30	August						
American Egret			150	July						
Double Crested Cormorant			35	May						
Yellow Crowned N. Heron			5	August						
Snowy Egret			10	August						
II. Shorebirds, Gulls and Terns:										
Killdeer	Summer Resident		50	July						
Black Tern	Summer Resident									
Spotted Sandpiper	Present but no Records									
Upland Plover	Present but no Records									
Greater Yellowlegs	Present but no Records									
Lesser Yellowlegs	Present but no Records									

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. Doves and Pigeons:					
Mourning dove White-winged dove	It is impossible to estimate dove numbers on the area but a good population nested here.				
IV. Predaceous Birds:					
Golden eagle	1 8/25				
Duck hawk					
Horned owl	Common Resident				
Magpie					
Raven					
Crow	Common Resident				
Coopers Hawk	Summer Resident				
Red Tailed Hawk	Summer Resident				
Turkey Vulture	Summer Resident				

Reported by Leo M. Kirsch

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 Gruiiformes)
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.

INT.-DUP. SEC., WASH., D.C.

59317

3-1752
Form NR-2
(April 1946)

UPLAND GAME BIRDS

1613

Refuge SWAN LAKE Months of May to August 31, 1938

(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									240	Estimate based on casual observations around area. About 20 coveys averaging 10 birds each.
Prairie Chicken									0	
Wild Turkey									?	One gobbler observed during period.

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.