

NARRATIVE REPORT ROUTING SLIP

REFUGE OTTAWA

PERIOD January - April 1962

~~Mr. Grawford~~ *L. Little* *B.* ~~Mr. Aschmiedt~~ *da* Mr. Fermanich _____

WILDLIFE MANAGEMENT: Mr. Banko _____ Mr. Goldman _____ Mr. Stiles *S*

RESOURCE MANAGEMENT: Dr. Morley _____ Mr. Stollberg _____

OPERATIONS: Mr. Hickok _____ Mr. Regan _____

PUBLIC USE: Mr. DuMont _____ Mr. Monson _____ Mr. Kubichek _____

ADMINISTRATIVE SERVICES: Miss Baum _____

OTTAWA NATIONAL WILDLIFE REFUGE

Narrative Report

January 1, 1962 - April 30, 1962

Alfred O. Manke
Refuge Manager

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Narrative Report OTTAWA REFUGE January 1, through April 30, 1962

I. GENERAL

A. Weather Conditions.

	<u>Snowfall</u>	<u>Precipitation</u>		<u>Max.</u>	<u>Min.</u>
		<u>This Month</u>	<u>Normal</u>	<u>Temp.</u>	<u>Temp.</u>
January	<u>7.1</u>	<u>3.22</u>	<u>2.40</u>	<u>52</u>	<u>- 8</u>
February	<u>15.3</u>	<u>2.07</u>	<u>2.09</u>	<u>57</u>	<u>3</u>
March	<u>8.8</u>	<u>2.11</u>	<u>2.84</u>	<u>77</u>	<u>8</u>
April	<u>0.5</u>	<u>1.13</u>	<u>3.15</u>	<u>88</u>	<u>30</u>
Total:	<u>31.7</u>	<u>8.53</u>	<u>10.48</u>	Extremes <u>88</u>	<u>- 8</u>

Weather data as recorded at the United States Department of Commerce Weather Bureau, Post Office Building, Sandusky, Ohio, 25 miles ESE of the refuge area. Weather conditions at Sandusky are believed close enough to those on the refuge to be considered one and the same.

Weather for the period was cold and bleak. Temperatures averaged from two to five degrees below normal. Three major and several minor storms occurred. Commercial fishings did not start until March 30, some 15 days behind schedule. The official season for navigation on the Great Lakes began April 16.

B. Habitat Conditions.

1. Water. No Service plan or control was in effect during the reporting period. Water levels in controlled marshes were manipulated as usual. Water levels were held steady at their highest levels of the year until trapping was discontinued about the end of March. Upon cessation of trapping, the marshes were pumped and/or drained and burned with few exceptions.

Only the eastern most portion of Pintail Marsh, approximately 60 acres, was drained to curtail erosion of the dike-road to Willow Point. Water will be held in the rest of Pintail Marsh to benefit nesting pairs and broods. Neither Goosehaven nor Pintail Marsh was burned.

The water level of Lake Erie remained fairly constant and stable. It fluctuated from day to day because of the wind, but with little general rise or fall.

2. Food and Cover. Ice and snow made food and cover rather limited until about mid-March. From then to the end of the reporting period the food supply was deemed adequate.

Early migrants started to return just past mid-February. The major waterfowl migration into the area occurred during the first two weeks of March. Because the marshes were still frozen, the waterfowl including swans and divers fed in semi-frozen, semi-flooded corn and soybean fields. As many as 5,000 swans, 5,000 Canada geese, and 25,000 ducks of all species common to the area, were observed feeding in these fields. The majority were observed in fields about two miles east of the refuge area. No artificial feeding was observed, and none was done on the refuge.

Wholesale burning of marshes, fields, and woods throughout April destroyed much of the cover. Since most of the burning occurred during the period of territory establishment and early nesting there seems little doubt but that this practice has and will curtail production. A dry, scorched "marsh?" offers little inducement to waterfowl. An estimated 75 percent of all wildlife cover was destroyed through deliberate burning in the general area of the refuge.

II. WILDLIFE

A. Migratory Birds.

1. Waterfowl. Whistling swans were in the area from about the first of March until just past mid-April. A peak of some 5,500 swans was observed during the third and fourth weeks of March. This was a higher peak than had been observed in quite a few years. The juvenile : adult ratio, however, was most discouraging. Only one juvenile was observed to every eight adults. Because of their abnormal behavior of concentrating in a few fields close to roads, the swans proved to be quite an attraction to the general public. Several articles and pictures appeared in the papers publicizing the event. Mr. Bednarik, Leader of the State's Crane Creek Wildlife Experimental Station stated that this was the first year that he has seen swans feed in corn fields to any extent. Undoubtedly, the still frozen marshes and Lake Erie shore-line played an important part in their unusual behavior.

Canada geese arrived, concentrated, fed, peaked, and departed in much the same pattern, places, and numbers as the swans. Unlike the swans, however, their behavior was considered normal. The goose "cycle" was just slightly behind that of the swans.

The duck migration and behavior closely followed the pattern of the geese and swans. In fact the majority of all the waterfowl in the general area could at times be observed in a few large fields. The peak-duck-population was well below that of previous years. Reliable, veteran observers were much disturbed by the marked decline in the number of ducks "coming through" this spring.

Shortly after the mid-winter inventory the area went into a deep freeze. Only a few ducks remained in the area from about mid-January to almost the end of February. Notable exceptions are the spring-fed lakes in and around Castalia, Ohio. These ponds of lakes remain free of ice and ducks and a few geese remain there throughout the winter. These "wildfowl" are artificially fed by the townspeople and visitors. Corn-vending machines are placed around the pools. For a nickel a person gets a handful of corn to throw to the ducks. Frequent flights in and out of the ponds indicate that many ducks are supplementing their "hand-outs" on the surrounding farm lands. An estimated 4,000 to 5,000 ducks make this homebase during the winter.

2. Other Waterbirds. A few great blue herons braved the winter in the area. Others started returning about mid-March. By the first of April almost all species common to the area were again represented. Peak migration of this group occurred from about the first to mid-April. By mid-April nesting activities were under-way at the great blue heron rookery at Winous Point Hunt Club where some 300 to 500 pairs nest. No nesting attempts or rookeries noted on the refuge area except on West Sisters Island.

Some 150 black-crowned night herons, 50 American egrets, and a few bitterns and green herons have been frequenting the marsh areas on the refuge for almost a month, but no nests other than green herons have been observed. It is evident that many birds nesting on West Sisters Island return to the mainland marshes to feed. An estimated 500 great blue herons, 500 American egrets, and 1,000 black-crowned night herons are presently nesting on the Island.

3. Shorebirds. Shorebird migrations followed close on the heels of the waterbirds. Peak populations were reached just about at the end of the reporting period. The exposed mud flats resulting from marsh drawdowns provided ideal conditions for the majority of this group.

An excellent population of greater yellow-legs was noted. Ring-billed and herring gulls returned quite a bit ahead of the other birds in this group. Although these two species are by far the most numerous, the little Bonaparte's gull is well represented. Also black and common terns were numerous by the end of the reporting period.

4. Doves. A few doves remained in the area throughout the winter. A build-up of the population occurred in March. By the end of March cooing had started, and some nesting was under-way early in April. The breeding population returning to the area is high. It is the opinion of the writer that the hunters of Ohio are missing-the-boat by not getting this species on the game bird list. It could divert some hunting pressure from other species as well as provide some fine sport.

B. Upland Game Birds.

1. Pheasants. Cock-pheasant crow-counts indicate an adequate and well dispersed breeding population. No major winter losses were observed. There is little doubt but that the wholesale burn-off practiced is detrimental to the pheasant population. In fact it seemed surprising that as many pheasants survived this period as did. The birds were constantly displaced and the major portion of their food and cover was destroyed.

2. Bob-white Quail. Only one pair of quail has been flushed this spring. This occurred on the France property (tract 38) a former licensed shooting area where birds were released ahead of the guns. Consequently, it is unknown whether this pair was escapees or native wild birds. Regardless, the quail population is low, but the refuge should provide conditions suitable for at least a small population.

C. Big Game Animals.

1. White-tailed Deer. White-tailed deer is the only species of big game animals in the area. Reports from various sources state that the number of deer is increasing in north-western Ohio. To date there has been no evidence observed that this is true for the refuge area. The refuge area is within the range of an estimated dozen individuals.

D. Fur Animals, Predators, Rodents, and other Mammals.

No marked change was noted in fur-animal populations or movements. In marshes that contained water throughout the year, populations were high and trapping success good. The drying and burning of the marshes displaces many muskrats and as such may increase dike burrows. Presently there are no indications that any of the species are endangered or in need of special attention.

Aside from the usual complaint by the hunters that the predators are taking all of the game, no concrete evidence was noted that there has been any marked change in numbers and species. Reliable observers believe that predators, particularly raccoon, are a definite limiting factor to duck production. These observers believe that a duck nest on a dike has almost no chance of success.

Groundhogs continue to plague and harass dikes and hayfields. No significant change in the groundhog population was noticed. The present population is a constant threat and source of trouble and damage.

Despite intensive cultivation and burning, a good population of cottontail rabbits exists. "Woolly" dikes offer most of the cover for cottontails and they seem to be well adapted to this limited habitat. Cottontails are not heavily hunted on the refuge area because of its interference with waterfowl hunting. Establishment of the refuge will help this species by curtailing burning. At the present time, wholesale burning is believed to be an important decimating factor.

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

1. Hawks. A rather heavy migration of almost all species of hawks occurred in early March. By the end of March the population had dwindled to resident birds. Although hawks were abundant during the migration period, no undue adverse effects were noticed.

2. Eagles. One pair of bald eagles returned to nest at their Crane Creek State Park site located within a few hundred yards of the refuge boundary. Last year this pair quit this site, probably because of human disturbance, and started a nest on what will be part of the refuge. This new nest was destroyed when the tree along with all other merchantable timber was harvested by present owners this past winter. The pair of bald eagles that nested on West Sisters Island have not been seen the last two years, and are believed to have been destroyed.
3. Crows. Crows do not exert much pressure on other species in this area. Hunting pressure and lack of good habitat keeps the crow population in check. In fact, ardent crow hunters are disguntled because of the rather limited population.

F. Other Birds.

No unusual sightings observed. Redwings returned enforce about the end of March. An inestimable number are present and setting-up housq keeping.

G. Fish.

Almost all of the water in the refuge area and Lake Erie remained frozen until mid-March. Ice-fishing pressure was in Lake Erie but almost none occurred on the refuge. Waters were muddy during the spring-thaw, and before they could settle carp runs started. ~~Seferal~~ storms plus the carp activities have kept waters roiled and muddy. Even the shallows of Lake Erie appear to be exceptionally muddy. Consequently, conditions for fish and fishing for other than bullheads and carp are poor. About the only place the public can fish on the refuge area is at the bridge on Stange Road that crosses Crane Creek. Generally about 25 fishermen fish this spot on week days and upwards of 100 fishermen are there on week-ends.

H. Reptiles.

Water, fox, and garter snakes became active about the first of April. Water snakes are numerous, but fox, gatter, and other species of snakes are not too plentiful. Painted turtles were up on logs sunning themselves starting about mid-April. This species is well represented in the refuge waters, but other species are much more uncommon.

I. Disease.

Lead poisoning was quite common on the refuge and in the general area, particularly in the swans. An estimated 100 swans died on and in the general area of the refuge. About 25 were autopsied and all contained ingested shot. As few as 4 and as many as 38 shots were found in the dead swans. All attempts to save sick swans failed. Mr. John Hutcheson, Park Manager at Crane Creek State Park put forth a lot of effort to save some of the birds, but to no avail.

III. REFUGE DEVELOPMENT AND MAINTENANCE

A. Physical Development. None.

B. Plantings.

1. Aquatics and Marsh Plants. None

2. Trees and Shrubs. None

3. Upland Herbaceous Plants. None

4. Cultivated Crops. No crops designated or under the supervision of the refuge were planted. A dry April however, permitted farmers to get their fields prepared well ahead of schedule. Some spring oats and sugar beets were planted in April on and off the refuge area.

C. Collections and Receipts. None.

D. Control of Vegetation. None

E. Planned Burning.

Although no burning was planned or under the supervision of the refuge, almost the entire refuge and surrounding area was burned-over by present land owners.

F. Fires.

Fire danger was high throughout April. It was dry, windy, and many people believed it time to burn. Despite all of the burning the Pintail Marsh and other properties under purchase agreements escaped damage. No fires occurred on refuge property.

IV. RESOURCE MANAGEMENT

A. Grazing. None

B. Haying. None

C. Fur Harvest.

No permits were issued. Mr. Vernon Meinke under a lease with the former Pintail Marsh owners was permitted to trap that area. No records or reports of Mr. Meinke's success have been submitted. Fur prices were down and few trappers seemed satisfied. Muskrat pelts were priced locally at between 70¢ and 75¢ a piece. Mr. Youster, caretaker of Goosehaven (Tract 19) removed an estimated 1,000 muskrats from 484 acres. This was below his normal harvest. He blamed poor trapping conditions for the reduced harvest rather than lack of muskrats.

D. Timber Removal.

Almost all merchantable timber in woodlots within the proposed refuge area was removed this past winter. This was not done under permit or supervision of the refuge. A tree containing the nest of bald eagles was removed in one of the operations. It is believed that timber removal was accelerated in anticipation of the land being acquired for a refuge.

E. Commercial Fishing. None.

F. Other Uses.

A Special Use Permit was issued to cover a two-month extension granted the occupants of the Pintail Marsh premises. A charge of \$50.00 per month was levied under the terms of the permit.

V. FIELD INVESTIGATION OR APPLIED RESEARCH

A. Progress Report.

The refuge is cooperating in a waterfowl production study of the Lake Erie marshes. The study is being done by an Ohio State University graduate student, Don Thompson, under the guidance of Dr. Peterle, Leader of the Ohio Cooperative Wildlife Research Unit. The study is designed as a pilot study to gather background information to devise more accurate means and surveys for future use. To date pair counts and some nest searching has been completed on five one-square mile plots including one plot on the refuge area.

VI. PUBLIC RELATIONS

A. Recreational Uses.

Little public use has been made of the refuge area. Present owners jealously guard their rights and properties against public use and access. As reported under a previous heading, some fishing does occur at a bridge that crosses Crane Creek. This use, however, is rather limited.

B. Refuge Visitors.

DATE	NAME	ADDRESS	PURPOSE
1/8	M. J. Priesman	Locust Point	Fish holding pond rental
1/8	B. Finkin	Oak Harbor	Sale of property info.
1/8	O. Turnow	Toledo	Sale of property info.
1/8	O. Kozanka	Oak Harbor	Sale of property info.
1/10	L. Williams, SCS Cons	Oak Harbor	Refuge boundary re drainage
1/11	W. Luebke, ASCC Sup	Oak Harbor	Refuge info. and talk
1/15	L. VanCamp, Cons Off	Genoa	Bird list compilation
1/16	J. R. Bridenbaugh	Toledo	Job interview, Region II
1/17	O. Turnow	Toledo	Sale of property and exchange
1/18	C. Romstadt	Bono	Sale of property
2/6	K. Bednarik	McGee Marsh	O. L. Sprtsms. meeting
2/12	E. Larie	Minneapolis	Land Acquisition
2/27	O. Turnow	Toledo	Sale of property
3/5	M. J. Priesman	Locust Point	Fish pon rental
3/6	K. Bednarik	McGee Marsh	Flyway meeting
3/6	Cg Hansen	McGee Marsh	Flyway meeting
3/6	V. Meinke	Pintail Marsh	Extensi on of occupancy
3/14	Members Wolf Creek Sprtsms Club		Boundary re purchase of land
3/19	B. Sprouse, Oak Harbor Cons. Club		Refuge talk to Club
4/2	V. Meinke	Pintail Marsh	Payment of rent
4/2	L. L. Hartman	Oak Harbor	Job applic. heavy equip. op.
4/3	R. Cuthher	Oak Harbor	Sale of property
4/23	J. Beam, Ottawa County School Bd.		Loss of taxes re refuge
4/23	W. Digby, County Supt. Schools		Loss of taxes re refuge
Numerous	G. M. A., E. Bosak	Port Clinton	Law enforce. and coop.

C. Refuge Participation.

1/23-2/1	Manke, Region III Regional Conference, Minneapolis, Minn.
2/7	Manke, Refuge talk, Brotherhood, United Ch. of Christ, Elliston, O.
2/9,10	Manke, Ohio League of Sportsmen; Columbus, Ohio
2/22	Manke, Bosak, Bednarik, Grand Lake Goose Refuge, St. Marys, Ohio
3/18	Manke, Wildlife Cons. talk, Grades 4,5,&6, LaCarne School, Ohio
4/9	Manke, Refuge talk, Oak Harbor Conservation Club, Oak Harbor, Ohio
4/11	Manke, Peterle, Anderson, Thompson et. al. Lake Erie Production Stdy.
4/12	Manke, Peterle, Hawkins, Jahns, et. al. Lake Erie Production Study

D. Hunting. None.E. Violations. No violations observed this period.F. Safety. No formal safety meetings held since the writer is the only employee present. All current safety literature has been read and duly noted. Total accident-free period, 197 days.

VII. OTHER ITEMS

A. Items of Interest.

1. Land Acquisition. Initially, unexpected success was experienced in obtaining purchase agreements in the land acquisition program. Total acreage now under some type of agreement, including the Pintail Marsh, amounts to approximately 1,500 acres. After the initial "spurt", however, little progress has been made. Legal entanglements and the wide divergence between the appraised and some of the asking prices have stymied further acquisition.

Legal "road-blocks" include clouded titles, life leases, estates, illness, and possible disapproval of some properties. In regards to the latter, the original approved boundary geometrically bisected some seven or eight properties. A number of these property owners have expressed a willingness to negotiate, but only on an all or nothing at all basis. These properties were reappraised so that negotiations could be reopened on this basis, but as yet no approval has been granted to include the extra acres.

Also there is as much as a \$150 per-acre difference between the appraised values and what the property owners state as their selling prices. This amounts to quite a difference when applied to a piece of property of 200 or 300 acres. Then there are a few property owners who just will not negotiate and who become belligerent and insulting when approached. This all becomes rather frustrating and confusing when the major portion of the development of the Ottawa Refuge is scheduled for fiscal years 1964 and 1965. A favorable atmosphere exists for the establishment of Ottawa Refuge with the majority of the people other than the property owners in the project area.

SIGNATURE PAGE

Submitted by:

Alfred O. Manke

Alfred O. Manke

(Signature)

Date: May 18, 1962

Refuge Manager

Title

Approved, Regional Office:

Date: 5-21-62

Donald A. Carpenter

(Signature)

Regional Refuge Supervisor

W A T E R F O W L

REFUGE OTTAWA

MONTHS OF JANUARY TO MARCH, 19 62

(1) Species	(2) Weeks of reporting period									
	1	2	3	4	5	6	7	8	9	10
<u>Swans:</u>										
Whistling Trumpeter										150
<u>Geese:</u>										
Canada Cackling Brant White-fronted Snow Blue Other										50
<u>Ducks:</u>										
Mallard	200	100	50	50	50	50	50	100	200	500
Black	100	100	50	50	50	50	50	100	100	500
Gadwall										
Baldpate									50	300
Pintail									50	300
Green-winged teal										
Blue-winged teal										
Cinnamon teal										
Shoveler										50
Wood										
Redhead										100
Ring-necked										
Canvasback										50
Scaup										200
Goldeneye	50	50	50	50	50	50	50	50	100	100
Bufflehead										
Ruddy										
Other										
<u>Coot:</u>										

WATERFOWL
 (Continuation Sheet)

REFUGE OTTAWA MONTHS OF MARCH TO MAY, 1962

(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	500	1000	1000	500	100	50	10		23,200		
Trumpeter											
Geese:											
Canada	1000	2000	1000	500	25	50	50		32,700		
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard	2000	2000	1000	500	500	300	300		55,700		
Black	3000	3000	1000	500	500	300	200		67,500		
Gadwall					100	50			1,000		
Baldpate	1000	1000	1000	500	1000	1000	500		44,500		
Pintail	1000	2000	1000	300	100	50			33,600		
Green-winged teal			200	200	100	50	50		4,200		
Blue-winged teal				200	500	500	500		11,900		
Cinnamon teal											
Shoveler	100	200	200	300	300	100	50		9,100		
Wood	50	200	400	600	600	600	500		20,600		
Redhead	200	200	100	50	50	50			5,200		
Ring-necked											
Canvasback	50	50	50	50	25				1,900		
Scaup	300	300	200	100	100	100	100		9,800		
Goldeneye	50	50	50	50					5,600		
Bufflehead							10		100		
Ruddy											
Other Hooded Merg.				50	50	50	50		1,400		
Common Merg.				1000	500	500	200		15,400		
Coot:			100	1000	3000	3000	1000		56,700		
				(over)							

	(5)	(6)	(7)
	<u>Total Days Use</u>	<u>Peak Number</u>	<u>Total Production</u>
Swans	<u>23,200</u>	<u>1000</u>	<u>0</u>
Geese	<u>32,700</u>	<u>2000</u>	<u>0</u>
Ducks	<u>287,500</u>	<u>9000</u>	<u>0</u>
Coots	<u>56,700</u>	<u>3000</u>	<u>0</u>
TOTALS	400,100	12,000	0

<u>SUMMARY</u>	
Principal feeding areas	<u>Flooded corn and soybean fields</u>
	<u>until almost mid-April when feeding shifted to marshes.</u>
Principal nesting areas	<u></u>
Reported by	<u>Alfred O. Manks</u>

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

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

3-1751

Form NR-1A
(Nov. 1945)MIGRATORY BIRDS
(other than waterfowl)Refuge.....OTTAWA..... Months of JANUARY to MAY 1962

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. <u>Water and Marsh Birds:</u>										
Horned Grebe	4	4/12	15	4/24	2	4/30	0	0	0	50
Pied-bill Grebe	1	4/11	25	4/25	still present		0	0	0	150
Great blue heron	year-round		1000	4/10	still present		1	250	500	1000
Black-crowned night heron	20	4/11	1000	4/25	still present		1	500	1000	1500
Green heron	3	4/11	100	4/25	still present		0	25	50	150
American egret	2	4/3	500	4/25	still present		1	250	500	1000
American bittern	3	4/12	25	4/25	still present		0	25	50	150
Sora rail	8	4/24	8	4/24	8	4/24	0	0	0	25
Florida gallinule	1	4/11	10	4/24	still present		0	50		150
II. <u>Shorebirds, Gulls and Terns:</u>										
Herring gull)	200	3/5	5000	4/10	still present					5000
Ring-billed gull)										
Bonapartes gull	50	4/12	300	4/25	still present					300
Common tern	10	4/12	200	4/25	still present					200
Black tern	5	4/25	5	4/25	still present					50
Sandpipers spp.	150	4/12	500	4/25	still present					500
Killdeer	10	4/12	200	4/25	still present					200
Greater yello-legs	200	4/11	500	4/24	still present					500

(over)

(1)	(2)		(3)		(4)	(5)		(6)
III. <u>Doves and Pigeons:</u> Mourning dove White-winged dove	year-round		1000	4/12	still present	300	500	1000
IV. <u>Predaceous Birds:</u> Golden eagle Duck hawk Horned owl Magpie Raven Crow Bald Eagle Red-tailed hawk Red-shouldered hawk Sparrow hawk Marsh hawk Sharp-shinned hawk Coopers hawk	year-round		50					50
	12/25	2/19	500	3/30	still present			500
	1 2/22	2/22	2	3/16	still present			2
	25	3/3	50	3/16	still present			50
	10	3/3	25	3/16	still present			25
	6	3/16	50	3/23	still present			50
	2	4/11	25	4/25	still present			25
								10
								6
Reported by <u>Alfred O. Manke</u>								

INSTRUCTIONS

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

UPLAND GAME BIRDS

Months of JANUARY to MAY, 19 62

[illegible]

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.

3-1754
Form NR-4
(June 1945)

SMALL MAMMALS

Refuge OTTAWA

Year ending April 30, 1962

(1) Species	(2) Density		(3) Removals					(4) Disposition of Furs					(5) Total Popula- tion	
Common Name	Cover Types & Total Acreage of Habitat	Acres Per Animal	Hunting	Fur Harvest	Predator Control *	For Re- stocking	For Re- search	Share Trapping			Total Refuge Furs Shipped	Furs Donated	Furs Destroyed	
								Permit Number	Trappers Share	Refuge share				
Muskrat	2000 ac. cattail marsh	1/3	est	4000				none	100%					2000
Mink	"	20	"	20				"	"					40
Raccoon	4000 ac. marsh & wood	16	"	50				"	"					200
Striped Skunk	"	80	"	10				"	"					40
Red Fox	"	80	10					"	"					40
Cottontail	1000 ac. hay, wood, dike	2	100					"	"					400
Fox Squirrel	200 ac. wood & dike	2	25					"	"					75
Red Squirrel	"	5	10											30
Groundhog	1000 ac. hay & dike	5			50									150

* List removals by Predator Animal Hunter - None

* List removals by Predator Animal Hunter None

REMARKS:

Reported by Alfred O. Manke

INSTRUCTIONS

Form NR-4 - SMALL MAMMALS (Include data on all species of importance in the management program; i. e., muskrats, beaver, coon, mink, coyote. Data on small rodents may be omitted except for estimated total population of each species considered in control operations.)

- (1) SPECIES: Use correct common name. Example: Striped skunk, spotted skunk, short-tailed weasel, gray squirrel, fox squirrel, white-tailed jackrabbit, etc. (Accepted common names in current use are found in the "Field Book of North American Mammals" by H. E. Anthony and the "Manual of the Vertebrate Animals of the Northeastern United States" by David Starr Jordan.)
- (2) DENSITY: Applies particularly to those species considered in removal programs. 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, bottom land 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) REMOVALS: Indicate the total number under each category removed since April 30 of the previous year, including any taken on the refuge by Service Predatory Animal Hunter. Also show any removals not falling under headings listed.
- (4) DISPOSITION OF FUR: On share-trapped furs list the permit number, trapper's share, and refuge share. Indicate the number of pelts shipped to market, including furs taken by Service personnel. Total number of pelts of each species destroyed because of unprimeness or damaged condition, and furs donated to institutions or other agencies should be shown in the column provided.
- (5) TOTAL POPULATION: Estimated total population of each species reported on as of April 30.
- REMARKS: Indicate inventory method(s) used, size of sample area(s), introductions, and any other pertinent information not specifically requested.