Did you say ducks? There's 5,000,000!

Havana, Ill., Nov. 30 1944 (AP).—The biggest concentration of ducks in 16 years rested today on lakes, sloughs, and potholes along the lower reaches of the Illinois river, Frank Bellrose Jr., of the Illinois Natural History Survey, said.

Bellrose estimated there were 500,000 ducks in the valley. Approximately 2,000,000 arrived during the last 24 hours, he said, driven southward by storm conditions to the north and west.

"The newcomers joined up with about 3,000,000 that had come down earlier," the survey's census taker declared. "The 5,000,000 total is the largest I have seen since I began duck census work in 1936, and old-timers tell me they haven't witnessed its equal since 1928."

Estimates by officials of Ducks Unlimited and the fish and wildlife service had placed the continent's duck population this year at around 150,000,000, the figure representing a stirring comeback for waterfowl which had dwindled to about 35,000,000 birds 10 years ago.

A big flight consequently had been expected in Illinois this fall, and the storm-tossed mallards, pintails, widgeons, blue bills, canvasbacks, and less numerous species kept the predictions letter-perfect.

Quack, quack!

Mallards comprise the bulk of the current flight, Bellrose said, but a considerable number of diving ducks—canvas-backs, blue bills and a scattering of redheads—have settled on Upper Peoria Lake and similar deep bodies of water, statistician asserted.

He said a survey today showed 1,700,000 on Goose pond near Hennepin; 1,200,000 on the Illinois between Peoria and Havana; 450,000 on Upper Peoria Lake; 155,000 between Chillicothe and Henry; 250,000 on Starved Rock pool near Ottawa, and thousands more south of Havana.

"On Ingram lake," Bellrose reported, "the population swelled from 3,000 to 50,000 within a matter of hours."

There's a million of 'em—and four million more to boot!

ROUTING SLIP DIVISION OF WILDLIFE REFUGES DATE: 2/20 194 5

____ MR. SALYER _____ ____ SECTION OF HABITAT IMPROVEMENT:

____ MR. ELMER _____ ~~Mr. Griffith~~ REG 2-27

_____ _____ ~~Dr. Bourn~~ WSB 2-26-45

_____ _____ ~~Miss Cook~~ mc 2-26

____ SECTION OF OPERATIONS: ____ SECTION OF LAND MANAGEMENT:

~~Mr. Krummes~~ WK 3/9 ~~Mr. Earnshaw~~ _____

Mr. Regan HRR 3/7/45 Mr. DuMont PAD 3/14

Miss Baum _____ _____ _____

____ SECTION OF STRUCTURES: ____ STENOGRAPHERS:

~~Mr. Taylor~~ HWT 3/5/45 _____ MBJ 3/11

_____ _____ _____ _____

REMARKS: Chatauqua

Narrative

Sept-Dec. 1944

Return to: _____

8825

(Pages 1-2 missing)

CHAUTAUQUA NATIONAL WILDLIFE REFUGE
NARRATIVE REPORT - SEPTEMBER, OCTOBER, NOVEMBER and DECEMBER 1944

I. GENERAL

A. Weather Conditions.

The following is a summary of the weather data taken from the Official Weather Bureau in Havana, located ten miles from the Refuge Headquarters:

	Snowfall	Precipitation	Max. Temp.	Min. Temp.
Sept.		4.49	94	45
Oct.		1.43	85	32
Nov.	0.06	1.78	77	19
Dec.	14.7	1.26	44	-7
	14.76	8.96	94	-7

In general, temperature has averaged higher than last year. September was 2°, October 3° and November 11° above last year's maximum temperature. December was 14° below last year's maximum temperature. Precipitation was 4.43 inches greater than last year. The first frost occurred October 12 with no killing frost until November 29. The first measurable snow fell on November 28. The Refuge pool froze over December 1.

A. Water Conditions.

Water levels of the pool have been on the up trend during this period. Gauge readings range from 4.42 to 5.00 as compared with last year's 4.90 to 5.28; however, the pool was lowered 0.5 during the growing season. The rise in the pool was greater this year than last due to more precipitation. The Illinois River remained near the same state as the last period.

C. Fires.

No fires have occurred on the Refuge during this period.

II. WILDLIFE

A. Migratory Birds.

1. Population and Behavior

a. Waterfowl: It is estimated that Mallards increased approximately 43 per cent over last year. Although the Mallard peak of migration did not occur until December 2, 1944, the largest per cent moved in on one migration thus making it difficult to estimate this year's population in comparison with previous years, as migrations would occur several times during the fall in previous years. Instead of using the figure of 1,875,000 ducks as estimated in the Narrative Report for the same period of 1943, I used the peak concentration figure as designated in Column 4 of that report. There were increases of 25 per cent in Gadwall; 269 per

cent in Baldpate; 900 per cent in Blue-Winged Teal; 358 per cent in Pintail; 770 per cent in Green-Winged Teal; 25 per cent in Shoveller; 200 per cent in Redhead; 300 per cent in Ring-Necked Duck; 285 per cent in American Golden-Eye; 966 per cent in American Merganser; and 10 per cent in Bald Eagle; and the following have decreased: Common Loon, 67 per cent; Pied-Billed Grebe, 87 per cent; Canada Goose, 6 per cent; Snow Goose, 99 per cent; Blue Goose, 95 per cent; Black Duck, 44 per cent; Wood Duck, 83 per cent; Canvas Back, 90 per cent; Lesser Scaup, 70 per cent; Buffle-Head, 40 per cent; Ruddy, 22 per cent; Hooded Merganser, 71 per cent; and Coot, 66 per cent.

The migration was much later this year than last due to the warm weather. The peak concentration last year occurred November 15, and this year on December 2. When the late migration occurred this year, it was noticed that a large number of the ducks did not stop at the Refuge, as in previous years, due to the fact that the Refuge was frozen over except for three places in the south half and two places in the north half, where the water remained open because of the concentration of ducks.

The feeding habit of the Mallard was about the same as last year, only the largest feeding flight was south and east of the Refuge. The largest per cent of the corn was harvested when the ducks arrived.

Many of the ducks remained to the close of the period, although the 6 inch snow in the grain fields did not affect them to any great extent. The remaining grain to be harvested and that which had been harvested gave them ample supply of food. During the zero weather, a large number would seek the open water of Quiver Creek for the night.

b. Other Waterbirds: As usual the Cormorants made up the greatest population of birds in this class, an increase of 233 per cent over last year. The Cormorants fed chiefly on the west and north area of the Refuge where they appeared to be feeding on shad and using the timber area for roosting. Three were observed hanging in trees where they had become lodged in forks and were unable to free themselves. Many of the smaller limbs on the trees were broken off by the weight of the birds. The Egret population increased 3954 per cent this year. The Great Blue Heron increased 41 per cent.

c. Shorebirds: A large amount of Shorebirds are noted passing through the Illinois Valley. Very few are ever noted using the Refuge, due to unsuitable habitat. Only one Wilson Snipe was noted during the period.

2. Food and Cover.

The acreages of aquatic plants were about the same as last year. The sago pond weed appeared more abundant

cent in Baldpate; 900 per cent in Blue-Winged Teal; 588 per cent in Pintail; 770 per cent in Green-Winged Teal; 25 per cent in Shoveller; 200 per cent in Redhead; 300 per cent in Ring-Necked Duck; 288 per cent in American Golden-Eye; 366 per cent in American Merganser; and 10 per cent in Bald Eagle; and the following have decreased: Common Loon, 87 per cent; Pied-Billed Grebe, 87 per cent; Canada Goose, 6 per cent; Snow Goose, 39 per cent; Blue Goose, 38 per cent; Black Duck, 44 per cent; Wood Duck, 85 per cent; Canvas Back, 30 per cent; Lesser Scaup, 70 per cent; Buffle-Head, 40 per cent; Ruddy, 22 per cent; Hooded Merganser, 71 per cent; and Coot, 88 per cent.

The migration was much later this year than last due to the warm weather. The peak concentration last year occurred November 15, and this year on December 2. When the late migration occurred this year, it was noticed that a large number of the ducks did not stop at the Refuge, as in previous years, due to the fact that the Refuge was frozen over except for three places in the south half and two places in the north half, where the water remained open because of the concentration of ducks.

The feeding habit of the Mallard was about the same as last year, only the largest feeding flight was south and east of the Refuge. The largest per cent of the corn was harvested when the ducks arrived.

Many of the ducks remained to the close of the period, although the 6 inch snow in the grain fields did not affect them to any great extent. The remaining grain to be harvested and that which had been harvested gave them ample supply of food. During the zero weather, a large number would seek the open water of Quiver Creek for the night.

b. Other Waterbirds: As usual the Cormorants made up the greatest population of birds in this class, an increase of 233 per cent over last year. The Cormorants fed chiefly on the west and north area of the Refuge where they appeared to be feeding on shad and using the timber area for roosting. Three were observed hanging in trees where they had become lodged in forks and were unable to free themselves. Many of the smaller limbs on [illegible] trees were broken off by the weight of the birds. The Egret population increased 350% per cent this year. The Great Blue Heron increased 41 per cent.

c. Shorebirds: A large amount of Shorebirds are noted passing through the Tillamook Valley. Very few are ever noted using the Refuge, due to unsuitable habitat. Only one Wilson Snipe was noted during the period.

2. Food and Cover.

The acreages of aquatic plants were about the same as last year. The sago pond weed appeared more abundant

Form NR-1

MIGRATORY BIRDS

Refuge Chautauqua Months of September to December, 1944

1612

(1) Species	(2) First Observed		(3) Became Common	(4) Peak Concentration		(5) Last Observed		(6) Young Produced			(7) Total
Common Name	Number	Date	Date	Number	Date	Number	Date	No. Broods Obsvd.	Avg. Size	Esti-mated Total	Number Using Refuge
Common Loon	1	11-13									1
Pied-Billed Grebe	6	10-24									6
Double-Crested Cormorant	4000	10-16	10-16	4000	10-16	250	11-23				4000
Great Blue Heron	all year		9-1	155	9-3	8	12-28				155
American Egret	3	5-8	July	1500	9-3	4	10-30				1500
Canada Goose	46	10-4	11-23	400	12-21						400
Snow Goose	1	10-13		5	11-23						5
Blue Goose	5	10-13	11-23	90	11-23	1	12-29				82
Mallard	6	9-18	10-1	1500,000	12-2						1500,000
Black Duck	3	9-18	Oct.	5000	10-16						5000
Gadwall	2	10-16	10-24	10	10-24	3	11-10				10
Baldpate	36	9-26	10-1	1200	10-4	8	11-10				1200
Pintail	3	8-22	9-15	11,000	10-16	18	12-28				11,000
Green-Winged Teal	3	10-4	11-10	200	11-16	1	11-23				200
Blue-Winged Teal	8	8-15	8-21	2000	9-17						2000
Shoveller	25	9-26	10-4	25	10-4	25	10-25				25
Wood Duck	400	9-3	9-3	500	11-16	10	12-28				500
Redhead	3	10-13	10-28	120	10-24	70	11-16				120
Ring-Necked Duck	1	10-16	10-24	1100	11-16	750	11-20				1100
Canvas-Back	80	10-24	10-24	80	10-24	9	11-23				80
Lesser Scaup Duck	175	10-24	11-10	750	11-23	700	11-23				750

REMARKS: (Pertinent information not specifically requested)

INSTRUCTIONS

Form NR-1 - MIGRATORY BIRDS (Include species in families Gaviidae through Strigidae; also doves and woodcocks)*

In case a resident form occurs, such as mottled duck on the Gulf Coast, use only the columns that apply.

(1) SPECIES: Use correct common names as found in the A.O.U. Check List, 1931 Edition, and list in A.O.U. order. General terms are to be avoided, such as "scaup", "teal", etc.; use "green-winged teal" or "lesser scaup".

(2) FIRST OBSERVED: The first refuge record for the species during spring migration, fall migration, wintering, or summering, and the number observed. In the case of resident species this column may be disregarded.

(3) BECAME COMMON: The date the species became common on the refuge.

(4) PEAK CONCENTRATION: The greatest number of the species present on any one date or limited interval of time.

(5) LAST OBSERVED: The last refuge record for the species during the spring or fall migration, wintering, or summering, and the numbers observed exclusive of obvious cripples or non-migrants.

(6) YOUNG PRODUCED: Estimated number of young produced based upon 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 are to be omitted.

(7) 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 manner in which birds come through; i.e., in waves or all at once. On refuges representing the terminus of the flight lane, the figures would probably be the same in many cases.

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

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MIGRATORY BIRDS

Refuge Chautauqua Months of September to December, 1944

1612

(1) Species	(2) First Observed		(3) Became Common	(4) Peak Concentration		(5) Last Observed		(6) Young Produced			(7) Total
Common Name	Number	Date	Date	Number	Date	Number	Date	No. Broods Obsvd.	Avg. Size	Esti-mated Total	Number Using Refuge
American Golden-Eye	10	11-16	12-2	250	12-2						250
Buffle-Head	2	10-13	11-26	6	11-26	6	11-26				6
White-Winged Scoter	1	10-30									1
Ruddy Duck	45	10-13	10-13	525	10-25	65	11-23				525
Hooded Merganser	4	10-30	12-21	25	12-23						25
American Merganser	4	11-10	12-21	800	12-28						800
Bald Eagle	2	8-12	11-23	11	12-21						11
Coot	65	9-18	9-26	6000	10-4	1	12-28				6000
Wilson's Snipe	1	10-13									1
Common Tern			9-26	60	9-26						60

REMARKS: (Pertinent information not specifically requested)

INSTRUCTIONS

Form NR-1 - MIGRATORY BIRDS (Include species in families Gaviidae through Strigidae; also doves and woodcocks)*

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(1) SPECIES: Use correct common names as found in the A.O.U. Check List, 1931 Edition, and list in A.O.U. order. General terms are to be avoided, such as "scaup", "teal", etc.; use "green-winged teal" or "lesser scaup".

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

CHAUTAUQUA NATIONAL WILDLIFE REFUGE
NARRATIVE REPORT - SEPTEMBER, OCTOBER, NOVEMBER and DECEMBER 1944

I. GENERAL

A. Weather Conditions.

The following is a summary of the weather data taken from the official Weather Bureau in Havana, located ten miles from the Refuge Headquarters:

	Snowfall	Precipitation		Max. Temp.	Min. Temp.
Sept.		4.49		94	45
Oct.		1.43		85	32
Nov.	0.06	1.78		77	19
Dec.	14.7	1.26		44	-7
	14.76	8.96	Extremes	94	-7

In general, temperature has averaged higher than last year. September was 2°, October 3° and November 11° above last year's maximum temperature. December was 14° below last year's maximum temperature. Precipitation was 4.43 inches greater than last year. The first frost occurred October 12 with no killing frost until November 29. The first measurable snow fell on November 28. The Refuge pool froze over December 1.

B. Water Conditions.

Water levels of the pool have been on the up trend during this period. Gauge readings range from 4.42 to 5.00 as compared with last year's 4.90 to 5.28; however, the pool was lowered 0.5 during the growing season. The rise in the pool was greater this year than last due to more precipitation. The Illinois river remained near the same state as the last period.

C. Fires.

No fires have occurred on the Refuge during this period.

II. WILDLIFE

A. Migratory Birds.

1. Population and Behavior

a. Waterfowl: It is estimated that Mallards increased approximately 28 per cent over last year. Although the Mallard peak of migration did not occur until December 2, 1944, the largest per cent moved in on one migration thus mak-

Form NR-1

MIGRATORY BIRDS

Refuge Chautauqua Months of September to December, 1944.

1612

(1) Species	(2) First Observed		(3) Became Common	(4) Peak Concentration		(5) Last Observed		(6) Young Produced			(7) Total
Common Name	Number	Date	Date	Number	Date	Number	Date	No. Broods Obsvd.	Avg. Size	Esti-mated Total	Number Using Refuge
Wilson snipe	1	10-13									1
Ring-neck	1	10-16	10-24	1100	11-16	750	11-20				1100
Gadwell	2	10-16	10-24	10	10-24	8	11-10				
Cormorant	4000	10-16	10-16	4000	10-16	250	11-23				
Canvas-back	80	10-24	10-24	80	10-24	9	11-23				
Grebe	6	10-24									
Scaup	175	10-24	11-10	750	11-23	700	11-23				
Hooded merganser	4	10-30	12-21	25	12-28						25
American merganser	4	11-10	12-21	800	12-28						800
White-wing scooter	1	10-30									
Eagle	2	8 -12	11-23	11	12-21						
Golden-eye	10	11-16	12-2	250	12-2						
Loon	1	11-13									1
Great Blue heron	all year										
American egret	3	5-8	July	1500	9-3	4	10-30				1500
Blue-winged teal	8	8-15	8 -21	2000	9-17						2000
Pintail	3	8-22	9 -15	11000	10-16	18	12-28				11000
Black duck	3	9-18	Oct.	5000	10-16						5000
Mallard	6	9-18	10-1	1500,000	12-2					1	500,000
Coot	65	9-18	9-26	6000	10-4	1	12-28				6000
Shoveler	25	9-26	10-4	25	10-4	25	10-25				25
Tern			9-26	60	9-26						60

REMARKS: (Pertinent information not specifically requested)

INSTRUCTIONS

Form NR-1 - MIGRATORY BIRDS (Include species in families Gaviidae through Strigidae; also doves and woodcocks)*

In case a resident form occurs, such as mottled duck on the Gulf Coast, use only the columns that apply.

(1) SPECIES: Use correct common names as found in the A.O.U. Check List, 1931 Edition, and list in A.O.U. order. General terms are to be avoided, such as "scaup", "teal", etc.; use "green-winged teal" or "lesser scaup".

(2) FIRST OBSERVED: The first refuge record for the species during spring migration, fall migration, wintering, or summering, and the number observed. In the case of resident species this column may be disregarded.

(3) BECAME COMMON: The date the species became common on the refuge.

(4) PEAK CONCENTRATION: The greatest number of the species present on any one date or limited interval of time.

(5) LAST OBSERVED: The last refuge record for the species during the spring or fall migration, wintering, or summering, and the numbers observed exclusive of obvious cripples or non-migrants.

(6) YOUNG PRODUCED: Estimated number of young produced based upon 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 are to be omitted.

(7) 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 manner in which birds come through; i.e., in waves or all at once. On refuges representing the terminus of the flight lane, the figures would probably be the same in many cases.

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

Form NR-1

MIGRATORY BIRDS

Refuge Chautauqua Months of September to December, 1944.

1612

(1) Species	(2) First Observed		(3) Became Common	(4) Peak Concentration		(5) Last Observed		(6) Young Produced			(7) Total
Common Name	Number	Date	Date	Number	Date	Number	Date	No. Broods Obsvd.	Avg. Size	Esti-mated Total	Number Using Refuge
Green-winged teal	3	10-4	11-10	200	11-16	1	11-23				200
Widgeon	36	9-26	10-1	1200	10-4	8	11-10				1200
Canada geese	46	10-4	11-23	400	12-21						400
Blue geese	5	10-13	11-23	90	11-23	1	12-29				82
Snow geese	1	10-13		5	11-23						5
Ruddy	45	10-13	10-13	525	10-25	65	11-23				525
Redhead	3	10-13	10-28	120	10-24	70	11-16				
Bufflehead	2	10-13	11-26	6	11-26	6	11-26				6

REMARKS: (Pertinent information not specifically requested)

INSTRUCTIONS

Form NR-1 - MIGRATORY BIRDS (Include species in families Gaviidae through Strigidae; also doves and woodcocks)*

In case a resident form occurs, such as mottled duck on the Gulf Coast, use only the columns that apply.

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(3) BECAME COMMON: The date the species became common on the refuge.

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(7) 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 manner in which birds come through; i.e., in waves or all at once. On refuges representing the terminus of the flight lane, the figures would probably be the same in many cases.

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

ing it difficult to estimate this year's population in comparison with previous years, as migrations would occur several times during the fall in previous years. There were increases of 81 per cent in Pintails; 5 per cent-Shovelers; 88 per cent Green-winged Teal; 27 per cent-Wigeons; 25 per cent-Canada geese; 12 per cent-Ruddy; 75 per cent-Ring-necks; 74 per cent Golden-eyes, and the following have decreased: Black duck, 16 per cent; Coots, 60 per cent; Blue geese, 94 per cent; Snow geese, 99 per cent; Buffle-head, 33 per cent and Canvas-backs, 84 per cent.

The migration was much later this year than last due to the warm weather. The peak concentration last year occured November 15, and this year on December 2. When the late migration occurred this year, it was noticed that a large number of the ducks did not stop at the Refuge, as in previous years, due to the fact that the Refuge was frozen over except for three places in the south half and two places in the north half, where the water remained open because of the concentration of ducks.

The feeding habit of the Mallard was about the same as last year, only the largest feeding flight was south and east of the Refuge. The largest per cent of the corn was harvested when the ducks arrived.

Many of the ducks remained to the close of the period, although the 6 inch snow in the grain fields did not affect them to any great extent. The remaining grain to be harvested and that which had been harvested gave them ample supply of food. During the zero weather, a large number would seek the open water of Quiver Creek for the night.

b. Other Waterbirds: As usual the Cormorants made up the greatest population of birds in this class, an increase of 27 per cent over last year. The Cormorants fed chiefly on the west and north area of the Refuge where they appeared to be feeding on shad and using the timber area for roosting. Three were observed hanging in trees where they had become lodged in forks and were unable to free themselves. Many of the smaller limbs on the trees were broken off by the weight of the birds. The Egret population increased 975 per cent this year. The Great Blue Heron increased 41 per cent.

c. Shorebirds: A large amount of Shorebirds are noted passing through the Illinois Valley. Very few are ever noted using the Refuge, due to unsuitable habitat. Only one Wilson Snipe was noted during the period.

2. Food and Cover.

The acreages of aquatic plants were about the same as last year. The sago pond weed appeared more abundant

Form NR-2 UPLAND GAME BIRDS 1613

Refuge Chautauqua Months of September to December, 1944.

(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	Upland hardwoods 200 acres	3.2							62	4 covies given grain on Refuge.

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.

in early summer but disappeared later, due to wave action. The Refuge pool did not recede until July 3 and with the new silt deposit and wave action, the water was never clear the entire growing season. The only plant not seriously affected by the flood was lotus and marsh smart weeds. The lotus appeared much weaker where the cutting has been practiced than in the area where it has not been cut. The operation of the weed cutter on lotus control was stopped September 21 as the lotus seeds were ripe and foliage was dying. The cutting in the north and east area of the Refuge was accomplished in less time than last year as the lotus was not as thick and did not interfere or obstruct the movement of the weed cutter as they did in the past. When the lotus are thin they do not interfere by collecting in front of the barge. The higher winds favored the cutting by drifting the lotus cuttings from the path of the cutter on the return route. It is estimated that 274 acres were cut. Thirty acres in the northwest area of the Refuge were cut for the first time and sixty-six acres remain uncut. The marsh smart weed made a more favorable gain this year, bearing more seed than in previous years. The smart weed growing on the higher land of the Refuge, such as levees and shore line were bearing seeds also.

Nota single duck potato was observed this growing season. Walter's millet, which started growing on the ridges after the water receded, supplied some of the food for ducks where duck potato was lacking. When the waterfowl census was taken, the largest concentration was in the millet area. The willows in the northeast part of the Refuge continue to die more each year.

B. Upland Game Birds.

1. Population and Behavior

Bob-white quail are the only game birds found using the Refuge, with the exception of ten Pheasants which were released at Headquarters by the Illinois Conservation Department on September 15. Only one has been seen since they were released. Four covey of quail have been feeding on the Refuge during the period making a total of 62 quail.

2. Food and Cover.

The food and cover conditions for upland game birds are adequate except during the heavy snowfall and zero weather. The mechanical corn pickers being used more commonly in the sandy soil adjacent to the south side of the Refuge supplies more food, but does not afford much cover. Two bushels of mixed grain were put out for quail and songbirds, although the squirrels take a large per cent of the grain.

C. Fur Animals, Predators, Rodents and Other Mammals.

1. Raccoon: Raccoon appear to be more plentiful than last year. It is estimated that 300 Raccoon are using the Refuge. This does not mean they all stay on the Refuge, but come to the Refuge from the timber area nearby for water and food, which is

chiefly dead fish, wounded and dead ducks. Raccoon also prey on Wood duck nests in the summer months. Sixteen were removed by live traps during the duck banding program by the Illinois Natural History Survey under permit in connection with the duck banding. Last year six traps were operated and nine Coons were removed. This year only four traps were operated.

Two permits were issued for share trapping. Due to the cold weather and snow the first part of December, the Raccoon have been in hibernation. Only one track has been noticed on the Refuge to date.

2. Muskrats: The Muskrats have suffered heavy losses due to the floods of 1943-44. Although the annual census of the dens or houses has not been taken, there appears to be sufficient breeding stock for the coming season.

3. Mink: The Mink are not plentiful and average nearly the same each year. By the tracks in the snow it is estimated that nine animals are using the Refuge. Although the young are raised on the Refuge each summer, it is believed they migrate into Quiver Creek during the winter months as there is more cover and open water available.

4. Opossum: Opossum do not appear to be on the increase, as only two tracks have been noticed in the snow this period.

5. Woodchuck: The Woodchucks are plentiful along the bluff area, but very rare on the levees as the floods destroy the largest amount. Two were taken by steel traps at Headquarters where dens had been built under the surplus post pile.

6. Red Fox: Indications from reports and observation are that Red Fox are on the increase. Numerous signs were found on the ice and in the snow. They travel the entire Refuge searching for food, chiefly dead fish and crippled ducks. While on a patrol trip along the south and west levees, 56 dead ducks were observed which had been partially eaten by foxes. It is quite common to hear them barking on the ice at night. One fox was found wounded on the Refuge by Mr. Borgelt, game agent, and was given to the Illinois Natural History Survey for study. Two dens, occupied by young, were found on the Refuge this summer. Not many hunters are hunting foxes this season as the price for the pelts is far below last year.

7. Fox Squirrel: From the observation and information during the hunting season, more squirrels were killed this season than last, however, there is a large supply left. During the open season, they appeared to seek the Refuge for protection, which means they used the Wood duck nesting boxes for dens.

8. Gray Squirrel: One Gray squirrel has been seen twice at Headquarters site, which is the first report of any in

Form NR-6 FISH 1617

Refuge Chautauqua Year 1944.

Species	Relative Abundance	Sport Fishing		Commercial Fishing		Restocking		Number removed for Restocking
		Man days Fishing	Number Taken	No. of Permits	Pounds Taken	Number Stocked	Area Stocked	
Large mouthed B. Bass		Total of 1,403 man-days fishing in taking total of 26,195 fish under fishing sport.	291					
Bluegill			1352					
Sunfish			695					
Yellow Perch			1911					
Bullheads			204					
Yellow Bass			256					
Crappie			4574					
*								
Large mouthed B. Bass								28
Bluegill								417
Pumpkin seed								0
Crappie								3025
Yellow Bass								32
Yellow Perch								400
Channel Cat								29
Bullhead								394
Carp								97
Buffalo								50

REMARKS: *Illinois State Conservation Department removed these fish for restocking permit No. 42-274.

this vicinity.

9. Rabbits: Rabbits are very scarce on or adjacent to the Refuge. Only two have been observed at Headquarters and only five have been seen during the entire period on the Refuge. Large kills are reported from the southern part of the State.

10. Deer: Two white tail deer were seen along the Refuge boundary fence November 30.

D. Predaceous Birds, Including Crows, Ravens and Magpies.

Few birds of this class were noted during the period, although they were never abundant. Crows were more numerous this year as they have a roosting concentration five miles south and east of the Refuge. The Bald Eagle has not appeared in large numbers as last period, the largest concentration being eleven. Two juveniles were noticed in August.

Very few Barred, Great Horned and Screech Owls are present. The latter species is more frequently observed in the Wood duck nesting boxes. Sparrows, Coopers and Marsh Hawks are also present in small numbers.

E. Fish.

Conditions for fish life have been favorable. Water levels have varried but little. Due to the lack of aquatic vegetation, the water was more turbid than last year. Following the freeze of December 1, large water holes have remained open by the use of waterfowl which is very beneficial to fish life.

III. REFUGE DEVELOPMENT AND MAINTENANCE

A. Physical Development.

1. Repair of the South Spillway: The truck trail on the levee to the south spillway was rebuilt in order that material could be trucked to the spillway for repair work. Thirty tons of rock and five tons of gravel were required to make the necessary repair as some of the rip-rap was feathered during the floods. Thirty tons of rock was placed on the North Levee at the east end of the control gates to stop erosion which was caused by last spring's flood. Approximately 800 tons of the 2400 tons of rock which was placed on the levee by the U. S. Engineer derrick boat has been moved to the top of the levee by the Caterpillar tractor and dozer. Due to the size of the rock, it is very difficult to make the grade uniform as the rock rolls away from the dozer. The sand fill was excavated from around the boat house at Headquarters and a road was built to the boat house so that material could be trucked to the boats for maintenance work on the levees and water area.

B. Planting.

Twenty-five pounds of lespedeza seed was sowed on the lawn at Headquarters this period.

C. Collection.

No seed was collected during this period.

1. Specimens: No live birds or animals were collected during this period. One Albino Mallard was given to the service by Mr. Arthur Mahlenbeck, Peoria, Illinois, which had been shot on Quiver Creek. The Albino was sent to the Central Office.

D. Receipts of Seed and Nursery Stock.

No seed or nursery stock was received this period.

IV. ECONOMIC USE OF REFUGE

A. Fur Harvest.

No Muskrat trapping was permitted this season due to the floods of the last two previous springs. Two permits were issued for share trapping of Raccoon, but due to the cold weather and snow, the trapping is very unfavorable at present.

V. FIELD INVESTIGATION OR APPLIED RESEARCH

A. Bird Banding.

The following ducks were banded on the Refuge during this period by members of the Illinois Natural History Survey: Black duck, 253; Coot, 80; Mallard, 2915; Pintail, 3 and 7 Mallard and Black duck hybrid, making a total of 3257.

The four banding traps were located on the south side of the Refuge near Headquarters. Baiting was started October 8 and continued until December 1, when the traps were frozen. During the month of December, the traps were baited on the ice for a period of ten days, but did not prove satisfactory. A total of 402 bushels of mixed grain was used. Baiting was carried on for 63 days, which averaged 1.51 bushels per trap per day.

More grain was required for bait than last year as 75 per cent of the grain was soy beans, which the ducks do not like. The mixed grain could not be separated to any advantage as the soy beans are crushed during the testing process at Peoria Food Administration office.

VI. PUBLIC RELATIONS

A. Recreational Uses.

The number of people using the Refuge for hook and line fishing averaged about the same as last year. Meyer's Ditch showed an increase due to the late warm fall, as the rest of the Refuge was closed to fishing during the waterfowl hunting season.

B. Refuge Visitors.

Name and Address	Date	Time Spent
F. C. Gillett, Reg. Ref. Supv., Minneapolis, Minn.	9-16	5 hrs.
	9-17	3 hrs.
Leo Borgelt, Game Agent, Havana, Ill.	9-28	1½hrs.
John Martin, Game Agent, Peoria, Ill.	9-28	1½hrs.
Leo Borgelt, Game Agent, Havana, Ill.	10-16	3/4hr.
W. C. Hall, Reg. Engineer, Minneapolis, Minn.	10-27	4½hrs.
Leo Borgelt, Game Agent, Havana, Ill.	11-29	2 hrs.

C. Hunting.

In general, hunting pressure on public hunting areas ~~were~~ was near that of last year. The month of December provided better weather for hunting than that of October and November. More hunting occurred along the south and east boundaries of the Refuge than in previous years, as the ducks were feeding in the corn fields in that direction from the Refuge. More wounded ducks were noted during this year's hunting season which was due to the out of range shooting into large flocks. One hundred twenty-seven wounded ducks were fed grain in the boat house channel at Headquarters during the cold weather of which 87 per cent recovered. It is doubtful whether any would have recovered had it not been for the grain.

E. Violations.

Three violators were contacted by Refuge personnel during this period. Two were taken to State court and entered pleas of guilty. Both were fined $50.00 and costs of $14.00 for shooting migratory waterfowl after sunset. The other violation is pending action in Federal court.

Also three violations were contacted jointly with the U. S. Game agent Mr. Leo Borgelt. Two were found with over a day limit of migratory waterfowl, both entered pleas of guilty, were fined $50.00 and costs of $14.00. The other violation is pending.

February 2, 1945
(Date)

Milfred J. Smith
(Signature)
Milfred J. Smith

F C Gillett Approved
Acting Regional Director

Acting in Charge
(Title)