

ROUTING SLIP

DIVISION OF WILDLIFE REFUGES

DATE: May 12 1943☒ MR. SAIYER☐ MRS. WOODIN☒ MR. ELMER *9/12*☐ MRS. GARVIN☐ MR. DUMONT☒ SECTION OF HABITAT IMPROVEMENT:

Mr. Kubichek

Mr. Smith

☒ Mr. Griffith *RG 7/15*

Miss Cook

☒ SECTION OF OPERATIONS:☒ Mr. Krummes *UK 5/21*☒ Mr. Gustafson *7/21*

Miss Baum

Mrs. Kricun

☒ SECTION OF ERA:☒ Mr. Regan *NR 5/12/43*☒ Dr. Bourn *OSB 8/10/43*

Mrs. Fishman

☒ SECTION OF LAND MANAGEMENT:☒ Mr. Farrelhaw☒ Mr. Ackerman *68*

STENOGRAPHERS:

Miss Whorley

☒ SECTION OF STRUCTURES:☒ Mr. Taylor *WV 5/22/43*

REMARKS:

CHAUTAUQUA NATIONAL WILDLIFE REFUGE NARRATIVE REPORT

JANUARY - APRIL 1943

*Summary Fiscal Year 1943*Return to: Miss Cook

CHAUTAUQUA NATIONAL WILDLIFE REFUGE
NARRATIVE REPORT - JANUARY, FEBRUARY, MARCH, AND APRIL 1943

I. GENERAL

A. Weather Conditions.

The following is a summary of the weather data taken from the records of the official Weather Bureau station at Havana, located 10 miles from the Refuge Headquarters:

	<u>Snowfall</u>	<u>Precipitation</u>	<u>Max. Temp.</u>	<u>Min. Temp.</u>
January	9.1	1.26	47	- 16
February	.75	1.80	67	- 3
March	4.5	1.59	83	- 15
April	.3	3.57	79	21
Totals	<u>14.65</u>	<u>8.22</u>	<u>83</u>	<u>- 16</u>

In general, temperatures averaged slightly less than 2 degrees cooler this period than a year ago. Weather conditions for the entire period were very unusual owing to the many sudden changes of temperature which resulted in abnormally cold periods followed by relatively high temperatures. Although approximately 1 inch more snow fell than during 1942, the first three months were very dry. Rainfall averaged 46 percent of normal for January, 47 percent for February, 77 percent for March, and normal for April.

Ice, which formed after the freeze-up December 2, covered the pool during the winter to a depth of not more than one foot. This broke up the last few days of February but froze over again by March 2 during calm weather and the final break-up occurred March 14.

B. Water Conditions.

River levels were at flood stage at the beginning of this period and remained above spillway elevation until the first part of April. The crests occurred on January 5 and 6 with a gauge reading of 11.64 and again on February 17 with the gauge at 11.30.

Water passed over the south levee and portions of the west levee for long periods and, as usual, the grade is worn down a few inches each high water period. Much of the spoil, from dredging operations during the spring of 1942, has been removed from the south levee, in fact, at the lowest spot it has washed down to the old original levee. Fortunately the pool was covered with ice most of the time until March 14, thus preventing erosion by wave action, and the water was receding by that date but rainfall resulted in a sudden raise again at the end of the period with a crest predicted for May 5 of 1 foot above flood stage.

Although the river dropped below spillway and pool elevation by April 12 past experience indicates that the floodgates need not be opened immediately to release water because of the possibilities of sudden river fluctuations at that time of the year.

May 21 20.8

Therefore, the gates were not opened until April 22 and it is now apparent that such action was actually a waste of time as river levels came up rapidly and water started flowing into the pool through the gates by April 27.

Gauge readings have varied greatly again this period, ranging from 6.70 to 11.64 as compared to a range of from 5.22 to 13.88 for 1942.

II. WILDLIFE

A. Migratory Birds.

1. Population and Behavior.

a. Waterfowl: In general, it is estimated that waterfowl have decreased 50 percent on the refuge and also were reduced a like amount the previous year. This condition pertains to the refuge only and it is believed to be brought about by high water levels which have prevailed during the spring migrations both years. All reports indicate that waterfowl have increased on areas outside of the refuge where much food is usually left from the fall season and this becomes available to the birds with higher water levels. In addition, migrations at this point consist almost entirely of shoal-water species which do not find the refuge so attractive with deep and rough water, particularly during the closed season.

The American Golden-eyes were reduced by the greatest percentage with Black ducks, Pintail, and Mallard following in that order. Blue-winged Teal made a good increase as did Ruddy ducks, Canada Geese, Wood duck, Canvas-back, Lesser Scaup, Coot, and Mourning Dove.

Canada Geese made a very good showing and wintering birds have increased annually. It was found that 2 nesting attempts had been made on the refuge for our first record. Two nests were discovered on the west levee April 30, one had contained 5 eggs and the other 2 eggs but all eggs had been destroyed by crows. It is also known that 2 nests are located in the Quiver Creek bottom near the refuge. Water is now backing up into this area and may flood one nest before the crest is reached. Probably all of this nesting was by former captive birds, at least we are fairly sure of the source of the birds nesting in the creek bottom. A total of 12 clipped Canadas were turned over to the Illinois Natural History Survey by Mr. Arthur Holtman, Skokie, Illinois, during 1941 and 1942 and these were kept penned, until last fall, at an artificial pond on the Cimco Farm 4 miles south of the Refuge Headquarters. It was noted that 8 or more of these birds remained together and used the Mill Pond on Quiver Creek during the past winter. The tameness of birds noted along the west levee indicates that at least 2 birds, which attempted to nest in that area, were from the same source.

The first Wood duck nests were discovered on April 1, one with 5 eggs and another with 1. This indicates slightly later nesting than last year and migration was likewise later. A complete check of nesting boxes will not be made until early May.

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ice
figures*

MIGRATORY BIRDS

Refuge ChautauquaMonths of January to April, 1943

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
D. C. Cormorant	3	3/29	4/17	3000	4/28						5,000
Great Blue Heron	1	3/15	3/29	7	4/28						10
American Egret	1	4/21									
Canada Goose				900	2/17						2,000
Mallard				225000	1/12						300,000
Black duck				10000	1/12						15,000
Baldpate	1	3/15		3	4/17						7
Pintail			2/5	800	2/17	1	4/17				1,500
Blue-winged Teal	2	3/29	4/17	450	4/17						1,000
Shoveler	5	4/17	4/28	75	4/28						1000
Wood duck	50	3/29	3/29	100	4/17						300
Redhead	14	2/17				10	2/24				20
Ring-necked duck	25	2/5	3/15	40	3/15	6	3/29				60
Canvas-back				275	2/24						500
Lesser Scaup				6500	4/17						10,000
American Golden-eye				35	2/5	2	3/29				75
Bufflehead	6	3/15	3/15	6	3/15	4	3/29				8
Ruddy duck	45	3/15	3/15	1300	3/29						2,000
Bald Eagle				29	2/17	1	4/21				29
American Merganser				5000	2/17	6	4/17				7,000
Coot	75	3/15	3/29	3500	4/17						5,000
Herring Gull				325	2/5						500

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.

b. Other Waterbirds: Cormorants have made a notable increase this period as compared to other years. Relatively large numbers are common during the fall flights but with high water levels during the spring large numbers are unusual. Great Blue Herons have not been common and no Woodcock have been seen. One early record is that of 1 American Egret noted along Quiver Creek on April 21. Herring Gulls have been common throughout the period but in smaller numbers than last year. With high water practically all of these birds concentrate in certain spots along the south levee where a shallow head of water is flowing in or out of the refuge. Apparently the chances of securing food are much better at these shallow points with turbid water conditions.

c. Shorebirds: Relatively few shorebirds are ever noted on the refuge, even with normal water levels, and with high water there is no suitable habitat whatever. No Wilson's Snipe have been noted but a considerable number of Lesser Yellowlegs have been passing through during the last 2 weeks. A few shorebirds have been noted along Quiver Creek but portions of that area are also flooded with extreme water levels.

2. Food and Cover.

Practically all natural foods are cleaned up on the refuge during the fall season each year owing to the much greater number of birds and semi-stable water conditions. High water during the spring does make a small additional food supply available but it is on unstable water areas where the greatest amount of food may be had at this time of the year.

The south levee and certain spots on the balance of the levee system are in need of additional willow plantings but high water has delayed this project and the planting stock will be too far advanced for use as cuttings unless the water drops immediately and that is unlikely. It is utterly useless to make plantings at high elevations, unless we could be assured of adequate rainfall, as cuttings must be placed near the water line to survive the first year.

B. Upland Game Birds.

1. Populations and Behavior.

Bob-white quail and Mourning Doves are the only birds of this class at present. Although a very few pheasants were noted last year, none have been observed this period. The quail population remains almost constant from year to year although most of the birds move onto adjacent farm lands for the summer. Relatively few Mourning Doves make use of the refuge but local observations indicate a small increase this spring.

2. Food and Cover.

An abundance of cover is found on the hillsides and timbered areas along the bluff and that is where the quail are found during cold weather. Much natural food was available during the winter owing to the heavy crop of wild fruits last year and waste grain could be obtained on farm lands adjacent to the refuge boundary.

Refuge ChautauquaMonths of January to April, 1943

(1) Species	(2) Density	(3) Young Produced	(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks	
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'd. Estimated Total	Percentage	Hunting	For Re- stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Bob-white Quail	Upland hardwoods, 200 acres	2.2						90	actual counts made while on patrol during winter months. 5 covies noted.

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.

Only 3 bushel of grain was used for feeding quail and other upland birds during severe weather. Considerable snow fell but this did not lay on the ground long owing to the many unseasonable mild periods throughout the winter.

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

Raccoon: All observations indicate that racoon have not been reduced sufficiently as yet. Trappers were permitted to take these animals for the first time on a share-crop basis but with fewer trappers available practically all trapping time was given to muskrats in view of prices and ease of handling pelts. In addition, some sets made for racoon were flooded suddenly by fluctuating water levels and the traps could not be retrieved until after the end of the trapping season.

Only 5 animals were taken during the trapping season and, in view of the estimated population and predation to Wood duck nests last summer, the take should have ranged from 25 to 50.

Mink: Mink are never plentiful although a few are present at all times and the trappers reported several signs while running trap lines. One adult was noted along the north levee while filling washouts during April.

Red Fox: Fox have been very numerous and are apparently increasing owing to protection, except during the fur trapping season, by state law. It is rumored that Red Fox will be classed as a predator again and may be taken during the entire year after the new game and fish laws become effective July 1, 1943. Two animals were noted on the levee system at one time by Mr. Smith and signs have been common during the winter. On one occasion it was found that one American Golden-eye and a Mallard had been eaten but it was impossible to determine if these birds had been cripples. To our knowledge no animals are making their home on the refuge.

Woodchuck: Although chucks are common on the uplands and increasing on nearby farm lands, they have not been so common on the levee system since the high water of 1942. No control measures have been taken as the high water again this period will assist in controlling the population.

Fox Squirrel: All observations indicate that squirrels came through the winter in good condition and are increasing. Many young were noted in the Wood duck nesting boxes while cleaning the boxes during late February and March.. In view of the predation to Wood duck nests the last few years, these animals should be drastically reduced. However, live-trapping is not economical and there is no other legal method of removal which would meet with public approval.

Muskrat: This has been a difficult period for the muskrats. Water levels came up during the last week of December, during the trapping season, and was more than 5 feet above normal at the start of the period.

N. Reg.

Refuge ChautauquaApril 30, 194 3

(1) Species	(2) Density		(3) Removals					(4) Disposition of Fur						(5) Total Popula- tion	
Common Name	Cover Types & Total Acreage of Habitat	Acres Per Animal	Hunting	Fur Harvest	Predator Control	For Re- stocking	For Research	Share Trapping			Total Refuge Furs Shipped	Refuge Income	Furs Donated	Furs Destroyed	
								Permit Number	Trappers' Share	Refuge Share					
Raccoon	Bottomland and upland hard and soft woods, 500 acres.	7 to 10		5	14*			8354 8356	1 0	0 1	0 1	**	3	***	50 to 75
Mink	" "	50													10
Red Fox	Ice covered pool and upland hard and soft woods, 4200 acres	420													NONE
Woodchuck	Bottomland and upland hard and soft woods, 400 acres.	16													25
Fox Squirrel	" "	4													100
Muskrat	Bottomland hard and soft woods, 325 Ac. Duck potato and smart- weed marsh, 125 acres	.45		591 592				8353 8354 8355 8356 8357 8358	(Did not trap) 47 49 61 135 1	not 51 50 60 135 2	trap) 51 50 60 135 2	** ** ** ** ** **			1000 ?

REMARKS: * Fourteen raccoon removed by Illinois Natural History Survey under Permit No. 42-278.

** No record that refuge furs have been sold as yet.

*** Three raccoon pelts confiscated and turned over to Illinois Department of Conservation for illegal method of taking.

Impossible to a reliable estimate of the muskrat population owing to high water levels, prevailing since late December 1942, which destroyed many houses and forced the animals to higher ground and other areas.

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. "List of North American Recent Mammals" by G. S. Miller, Jr., a very good reference, is now out of print, although a revision is scheduled for publication in the near future.)
- (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, 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. Also show any removals not falling under heading 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 and the total income to the refuge by species, including share-trapped furs and 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.



This flooded all houses and many dens and numerous houses were destroyed later when the ice broke up as water levels remained above normal the entire period. The animals were forced to higher ground and other areas. Many were noted on the ice and on floating driftwood in open water near the floodgate during the trapping season and others attempted to make dens along the bluff. No doubt some animals died of exposure owing to the cold weather.

Trapping results were rather disappointing because of these conditions and with continually changing water conditions it was difficult to trap at all. From 8 to 12 inches of ice covered the pool at the start of the trapping season but part of this melted and small areas opened up when the water raised.

It had been estimated that muskrats made a good increase during the previous summer but it has been impossible to make a reliable estimate during this period because of water conditions. However, unless the present flood forces more animals from the refuge it is believed that the breeding stock remaining will be adequate.

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

Bald Eagles are always common during the winter months and a large increase was noted this period. Twelve birds had been observed at one time for the greatest number other years but 29 were counted during the waterfowl census of February 17. These birds feed almost entirely on fish and were noted on the ice around the open water holes where waterfowl were concentrated but no predation was noticed.

Crows are common in this vicinity but no roosting concentrations occur on or near the refuge. The first predation occurred this period when eggs in 2 Canada Goose nests were destroyed on the west levee.

Quite a number of Hawks pass through this area and the Screech, Great Horned, and Barred Owls are present most of the time but no important predation has occurred.

E. Fish.

With high water during much of this period, fish have been able to leave or enter the refuge over the spillways and at times over the levees. Observations this year, and other years with similar water conditions, indicate that "rough fish", such as Carp and Buffalo, move about more than the game species. Carp and Buffalo are noted for leaving areas when the water is falling and returning when it is coming up. However, this does not always hold true on the refuge because after the water remains below spillway elevation for some time these fish will pass out over the spillways at the first opportunity when sufficient water flows into the pool. The only movement of fish noted this period was on April 30 when large numbers were noted leaving the refuge over the west spillway. Of course, this movement may continue for a considerable period but is not noticable when the water becomes deeper.

Carp were in spawning condition at the end of the period and with high water it is possible that much spawn will be destroyed if the water recedes immediately and rapidly. Buffalo are not in spawning condition as yet although farther advanced on the outside of the refuge.

Conditions for game fish, although probably not ideal with fluctuating water levels, have been satisfactory. Heavy ice did not remain on the pool for long periods and many open water holes were always available. Some dead fish, principally Bluegills, were noted along the shorelines during April but with a large population a small annual loss is to be expected.

III. REFUGE DEVELOPMENT

A. Physical Development.

Levee Repair: Owing to high water, adverse weather conditions, and lack of labor, development work has been confined to the north levee. To date all washouts have been filled so that the trail may be used out to the boat drag-over, a distance of $1\frac{1}{2}$ miles. Wooden troughs were placed in several of the worst washouts so that the water may be drained off in the future without serious results if possible.

Cottage Razing: Cottage No. 55 was torn down after failure of the former to remove it from the refuge in accordance with Court Order of September 15, 1942. This structure was an old cabin boat, very old and rotten, so little lumber could be salvaged. Salvaged lumber and personal property, found inside the cottage, was moved to Headquarters for storage. Further instructions for the disposal of the personal property has been requested from the Special Attorney, Department of Justice.

Scrap Metal Collection: Although this may not be considered development it is important in view of the national emergency. Several days were spent with dump truck and boat in collecting scrap from all parts of the refuge. That, together with a small amount already on hand, made a total of the various kinds as follows:

Scrap iron, 7 tons; Aluminum, 16 Lbs.; Brass, 108 Lbs.; Copper, 2 Lbs.; 2 Unservicable radiator cores; 3 Three cell storage batteries; 1 Sixteen cell storage battery; and 230 Lbs. of rubber. All items, except rubber, have been reported to the Regional Property Officer, Treasury Department, for final disposition.

IV. ECONOMIC USE OF REFUGE

A. Fur Harvest.

A total of 6 permits were issued for share-crop trapping of racoon and muskrats for the period December 16, 1942 to January 15, 1943. One permittee did not report for trapping and another discontinued operations before the start of this period.

Ice and high water conditions made trapping difficult and drove many animals from the refuge. Traps were flooded or frozen down within a few hours some days and many traps were never retrieved. A total of 592 muskrat and 5 racoon were taken. The 293 muskrats reverting to the permittees averaged \$1.87 each and one racoon at \$4.00. The Government share, 299 muskrat and 1 racoon, were shipped to the New York Auction Co., Inc. but had not been sold at the end of the period. The remaining 3 racoon pelts were confiscated and turned over to the State Department of Conservation because of illegal methods of taking.

B. Other Uses.

1. Boatyards: Permit No. 8674 was issued to Harry Rudolph, Sr. for the operation of a public boatyard and parking area at the Rudolph location .65 mile northeast of the Headquarters. The permittee owns 25 boats and a fee of \$1.00 per boat per year was charged making a total of \$25.00 revenue.

Permit No. 8709 was issued to John Lane for the operation of a public boatyard and parking area at the Myers Ditch location in the extreme northeast corner of the refuge. A total of \$10.00 was derived from this permit covering 10 boats.

2. Commercial Fishing: A total of 12 permits were issued, at no cost, for commercial fishing from February 1 to April 20 but only 7 permittees actually participated. No fishing gear was placed in the refuge until late February and then only leads and 4 nets for fear of losing tackle by ice. The pool froze over again after that on March 2 during calm weather and the lead and net poles were cut off by the ice as neatly as if a saw had been used.

Fishermen were permitted 25 nets each but only two persons used the full amount. The first fish were taken March 15, one day after the final breakup of ice, and results since have been below expectations. Apparently "rough fish" do not move during colder weather because very few were taken some days and good catches were made during milder periods. The weather has remained unseasonably cool and the Buffalo were just starting to run good at the close of the period. Ordinarily the season, permitted by State law, closes April 20 and re-opens June 1. However, this year the State Legislature extended the season to June 15, in view of the scarcity of protein foods, and will re-open July 15. This extension was not passed until the end of the normal season, therefore, all except 2 permittees had removed their nets from the refuge prior to the legislative action. Now that authority has been received from the Regional Office for an extension of the permits for a temporary period, these persons have placed some nets in the pool again.

A total of 30,246 Lbs. of Carp, averaging 5 Lbs. each, and 19,431 Lbs. of Buffalo, averaging 6 Lbs. each, have been taken to date. All fish revert to the permittees.

Local prevailing prices for Carp and Buffalo, in the rough, were 5¢ and 7¢ per Lb. respectively when commercial fishing started at the refuge. However, as soon as any number of fish were taken the prices were dropped to 4¢ and 5¢ per Lb. and Dogfish could not be sold at any price. These same fish are selling locally for .18¢ per Lb. dressed and in markets within 50 miles as high as .29¢ per Lb. The spread between the commercial fisherman and the consumer is far too great and the "rough fish" for food program can never expand or attain its due proportion under these conditions. Adjustment of prices, from the fisherman to the consumer, is the most important factor to be considered by Fisheries Coordinators in this area.

The following fish were removed by the Havana Re-claim Station, State Department of Conservation, under Permit No. 42-274, during the period for restocking other waters of the state;

Largemouth Bass, 76; Crappie, 7165; Bluegill, 2465; Pumpkinseed, 72; Yellow Bass, 11,375; Yellow Perch, 1685; Channel Catfish, 44; Bullhead, 172; Carp, 82; and Buffalo, 22, making a total of 22,838 game fish and 320 rough fish removed.

VI. PUBLIC RELATIONS

A. Recreational Uses.

Public fishing is practically the only recreational use made of the refuge at this time of the year. Although fishing is permitted along the east shore during the period, the major portion of the pool does not open until April 15. Curtailed travel, particularly for recreational purposes, and adverse weather conditions have reduced the number of fishermen for this period to a great extent. It is estimated that not over 150 persons have fished on the refuge during the entire period.

B. Refuge Visitors.

<u>Name and address</u>	<u>Date</u>	<u>Time spent</u>
Leo H. Borgelt, Dep. Game Agent, Havana, Illinois	1/14	6 Hrs.
	1/15	3 "
	1/16	$\frac{1}{2}$ "
	1/18	$1\frac{1}{2}$ "
	1/19	$\frac{1}{2}$ "
	1/28	2 "
	2/1	$1\frac{1}{2}$ "
	2/6	1 "
	2/16	2 "
	3/17	$3\frac{1}{4}$ "
	4/27	1 "
Zeb Kost, Investigator, Dept. of Con., Rushville, Ill.	1/19	$\frac{1}{2}$ "
John M. Martin, Game Agent, Peoria, Illinois	1/28	2 "
	2/6	1 "
John Sarff, Inspector, Dept. of Con., Chandlerville,	1/29	$\frac{1}{2}$ "
Roy Phelps, asst. Chief Inspector, Springfield, Ill.	1/29	$\frac{1}{2}$ "
F. C. Gillett, Reg. Refuge Sup., Minneapolis, Minn.	3/1	1 day
	3/2	$2\frac{1}{2}$ Hr.
M. D. Hunt, Fish Culturist, Springfield, Ill.	3/18	$1\frac{1}{2}$ "

Name and address	Date	Time spent
C. F. Culler, Area Coordinator, Minneapolis, Minn.	3/18	1½ Hrs.
Jesse Thompson, Regional Game Management Supervisor, Minneapolis, Minn.	4/27	1 "

C. Refuge Participation.

Refuge personnel did not participate in any public meetings and no requests were received for such appearances.

D. Fishing.

Fishing conditions have not been good this period because of cold weather, ice, and water conditions, particularly for hook and line fishing. High water has prevailed and the water is always very turbid at such times. With normal water levels the area along the bluff, in the northeast part of the refuge, becomes very clear owing to the large springs and some fine catches of Bass, Bluegill, Yellow Perch, and Crappie are made on occasional days throughout the winter.

E. Violations.

Two violators were apprehended during the period by Mr. Leo H. Borgelt, Deputy Game Agent, Havana, Illinois, and turned over to this office for action. Apparently 3 wild racoon had been taken, during the last days of the trapping season, illegally by chopping into den trees. These cases were settled in State Court, no prosecution was recommended for one case and the other defendant plead guilty.

Another case, pending from October 1942 and secured in cooperation with the local Investigator, State Department of Conservation, was also settled in State Court during this period. The defendant was convicted for trespassing and shooting migratory birds on the Chautauqua National Wildlife Refuge.

A total of \$50. in fines and \$26.70 in costs were assessed in the above cases during this period.

May 5, 1943
(date)

Homer L. Bradley.
(signature)

Approved: Burnie Mawch

Jr. Refuge Manager
(title)

ANNUAL SUMMARY
FISCAL YEAR 1943

I. WILDLIFE

No additional species of birds or mammals have been identified on the refuge this fiscal year.

II. OBSERVATIONS AND TRENDS OF POPULATIONS

A. Waterfowl.

It is estimated that the fall migration averaged about the same as last year with a peak of approximately 1,000,000 birds. Increases were made by Mallards, Black ducks, Baldpate, Blue-winged Teal, and Canvas-back but this was offset by reductions of Green-winged Teal, Ring-necked duck, Scaups, Bufflehead, and Ruddy duck.

The spring migration indicated a 50 percent reduction, in general, and a reduction of the same amount occurred the previous year. No doubt, high water was the major factor responsible for this loss of migrants. American Golden-eyes, Black ducks, Pintail, and Mallard were reduced considerably while gains were made by Blue-winged Teal, Ruddy ducks, Canada Geese, Wood Duck, Canvas-back, Lesser Scaup, Coot, and Mourning Doves.

Two nesting attempts were made on the refuge, for the first time, by Canada Geese, however, all eggs from both nests were destroyed by crows. Two other nests are known to be located in the Quiver Creek bottoms. The Wood duck nesting boxes have not been checked to determine the percent of occupancy, as yet, and it is too early to determine the nesting success. Two nests, of 1 and 5 eggs respectively, were found on April 1 and young should appear before May 10.

B. Bird Banding.

The following birds were banded during the fiscal year:

SPECIES	TOTAL PREVIOUSLY BANDIED	TOTAL 1943 FISCAL YEAR	TOTALS
Mallard	14,540	6,841	21,381
Black duck	890	511	1,401
Black X Mallard	37	--	37
Gadwall	1	2	3
Baldpate	4	--	4
Pintail	274	309	583
G. W. Teal	1	--	1
B. W. Teal	87	6	93
Shoveler	1	--	1
Wood duck	155	63	191
Ring-necked duck	114	--	114
Canvas-back	--	1	1
Lesser Scaup	16	2	18
A. Merganser	2	--	2
Red-shouldered Hawk	1	--	1
Coot	189	12	201
Screech Owl	17	--	17
Grand Totals	16,329	7,747	24,076

C. Mammals.

Raccoon: A total of 14 racoon were live-trapped and removed by the Illinois Natural History Survey under Permit No. 42-278. Five additional animals were taken during the fur harvesting season by share-crop trappers to make a total equal to the estimated annual increase. Predation to Wood ducks nests demands continued removal to reduce the population.

Muskrat: Six permits were issued for share-crop trapping but only 5 permittees participated and one of these trappers operated only for a few days. A total of 592 animals were taken. The permittees share of 293 skins sold for an average of \$1.87 on the local market. The Government share of 299 skins were shipped to the New York Auction Co., Inc. but have not been sold as yet.

High water during the winter destroyed many houses and forced some animals from the refuge. Although the population increased last summer water levels since the beginning of the winter season have made it impossible to make a reliable estimate since that time.

D. Rough Fish.

Twelve permits were issued to local commercial fishermen, at no fee, for the removal of Carp, Buffalo, and Dogfish. Only 7 permittees actually operated and only 2 of that number used the limit of 25 hoop nets each. A total of 30,246 Lbs. of Carp, averaging 5 Lbs. each, and 19,431 Lbs. of Buffalo, averaging 6 Lbs. each, were removed from March 15 to April 30, 1943 making a total of 49,677 Lbs. which were worth \$2200. to the fishermen.

III. WATER CONDITIONS

Relatively normal water stages prevailed from July to the latter part of November when water flowed slowly into the pool from the river to raise the pool approximately 1 inch. Then run-off from melting snows brought the levels up rapidly in late December with a crest of 11.64 on January 5 and 6, another crest of 11.30 on February 17, and the level was near flood stage and coming up on April 30 again, with a crest predicted for May 5. The water has remained above spillway elevation most of the time since late December and at no time since that date has it fallen below 1.7 above normal for the pool.

Gauge readings varied greatly with a range of 4.76 to 11.64 this year, a deviation of 6.88, as compared to a range of 4.26 to 13.88, a deviation of 9.62, for the 1942 fiscal year.

A few inches of soil is washed from low spots on the west levee during each high water period and a large amount of the spoil, deposited on the south levee when dredging during 1942, has been removed by ice and wave action. Other parts of the levee system and the water control structures have suffered little damage but the entire 9 mile levee system is urgently in need of reinforcing by hydraulic dredging.

IV. IMPROVEMENTS

The following work was accomplished entirely by refuge personnel and occasional extra day laborers:

1. Boat Channel, Quiver Creek: This job, which started April 1942, was completed July 21 by the Government-owned dragline, thus providing a 20 x 6 boat channel from Smith's Landing to the west levee, a distance of $1\frac{1}{2}$ miles.

2. Boat Channel, Boathouse No. 1: The dragline and D-6 Bulldozer were used to excavate a boat channel from the boathouse out to the pool, a distance of approximately 300 feet so that boats could enter that boathouse for the first time although constructed 4 years ago.

3. Repair of Dragline: After construction was terminated at this station this machine was torn down for repairs. The engine was completely overhauled and certain repairs made on the machine. Delay in the delivery of repair parts did not permit a complete overhaul of the machine before it was shipped to Ridgely, Tennessee for use at the Reelfoot Refuge.

4. Levee Repair: Excessive rainfall during July 1942 resulted in many large washouts along the trail on the north levee. These were filled so that the trail may be used out to the boat drag-over, a distance of $1\frac{1}{2}$ miles, and wooden troughs were placed in several of the largest washouts so that surplus water may be drained off in the future.

5. Cottage Razing: Cottage No. 55 was torn down after failure of the former owner to remove it from the refuge in accordance with Federal Court Order. Salvaged material was moved to the Headquarters for storage.

6. Scrap Metal Collection: The following scrap was collected on the refuge and all, except rubber, has been reported to the Treasury Department for disposal:

Scrap iron, 7 tons; aluminum, 16 Lbs.; Brass, 108 Lbs.; Copper, 2 Lbs.; 2 Unservicable radiator cores; 3-3 cell storage batteries; 1-16 cell storage battery; and rubber, 230 Lbs.

7. Landscaping, State Laboratory: The State provided materials and funds to complete the landscaping at the Laboratory site except for sodding the lawn. The slopes were covered with black soil, rail fences were erected on each side of the site, and 200 feet of underground telephone cable was installed to remove overhead wires which would soon be touched by trees.

8. Footbridge Construction: The State provided all materials and funds for the erection of a 150 foot suspension footbridge across Quiver Creek at the Laboratory site. This structure clears all high water and will permit passage of the Laboratory Boat "ANAX" with normal water levels.

V. REFUGE VIOLATIONS

A total of 13 violators were apprehended during the year. Convictions were obtained in State Courts covering 12 cases and no prosecution was recommended for the remaining case. Two cases were secured in cooperation with the local Investigator, State Department of Conservation and 2 other cases in cooperation with Mr. Leo H. Borgelt, Deputy Game Management Agent. The remaining cases were secured by refuge personnel.

The following offenses were committed by the above violators:

Offense	No. of Cases
Trespassing and shooting migratory birds on the Chautauqua National Wildlife Refuge	2
Shooting from public road	3
Shooting from public road and no duck stamp	1
Shotgun not properly plugged	2
No duck stamp	1
Shooting before sunrise	2
Damaging racoon den trees	2*

* One case not prosecuted.

A total of \$300. in fines and \$108.60 in costs were assessed in the above cases.

VI. RECREATIONAL USES

A. Fishing.

The results of hook and line fishing, estimated from a sampling with Record Cards furnished by the State Natural History Survey, are indicated below.

A total of 4710 boats were used by 8295 fishermen in taking the following fish:

Largemouth Bass, 2920; Bluegill, 23835; Sunfish, 4085; Yellow Perch, 9035; Bullhead, 750; Yellow Bass, 8615; Crappie, 4720; Sheephead, 2145; Channel Catfish, 10; Eel, 5; and Dogfish, 5. This makes a total of 69,130 for an average daily catch of 8.3 fish which is a decrease of 13.6 percent in the number of fish taken but an increase of .1 percent for the average daily catch as compared to the 1941 season.

The following fish were also taken by the Havana Re-claim Station, State Department of Conservation, with hoop nets under Permit No. 42-274 for restocking other waters of the state:

Largemouth Bass, 93; Crappie, 20460; Bluegill, 4870; Sunfish, 72; Yellow Bass, 14020; Yellow Perch, 1799; Channel Catfish, 64; Bullhead, 312; Carp, 264; and Buffalo, 47, making a total of 41,314 game fish and 687 rough fish removed.

May 6, 1943

(date)

Homer L. Bradley
(signature)

Approved

Bernie Maurek

Jr. Refuge Manager

(title)

V. REFUGE VIOLATIONS

A total of 13 violators were apprehended during the year. Convictions were obtained in State Courts covering 13 cases and no prosecution was recommended for the remaining case. Two cases were secured in cooperation with the local investigator, State Department of Conservation and 2 other cases in cooperation with Mr. Leo H. Borgett, Deputy Game Management Agent. The remaining cases were secured by refuge personnel.

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* One case not prosecuted.	

A total of \$300. in fines and \$108.60 in costs were assessed in the above cases.

VI. RECREATIONAL USES

A. Fishing.

The results of hook and line fishing, estimated from a sampling with record cards furnished by the State Natural History Survey, are indicated below.

A total of 4710 boats were used by 8235 fishermen in taking the following fish:

Largemouth Bass, 2920; Bluegill, 2383; Sunfish, 4085; Yellow Perch, 8035; Bullhead, 750; Yellow Bass, 8815; Crappie, 4720; Sheepshead, 2145; Channel Catfish, 10; Red, 5; and Dogfish, 5. This makes a total of 62,130 for an average daily catch of 8.3 fish which is a decrease of 13.6 percent in the number of fish taken but an increase of 1 percent for the average daily catch as compared to the 1941 season.

The following fish were also taken by the Havana Re-claim Station, State Department of Conservation, with hoop nets under Permit No. 43-374 for restocking other waters of the state:

Largemouth Bass, 93; Crappie, 20460; Bluegill, 4870; Sunfish, 28475; Yellow Perch, 14020; Yellow Bass, 1722; Channel Catfish, 47; making a total of 41,315. Game fish and 687 rough fish removed.

May 6, 1943

(Date)

Approved

Jr. Game Manager

(Title)

