



BRANCH OF WILDLIFE REFUGES NARRATIVE REPORTS

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REFUGE CHAUTAUQUA

PERIOD Sept - Dec 1958

A NARRATIVE REPORT

SEPTEMBER, OCTOBER, NOVEMBER AND DECEMBER, 1958

Personnel

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CHAUTAUQUA NATIONAL WILDLIFE REFUGE

HAVANA, ILLINOIS

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# CHAUTAUQUA NATIONAL WILDLIFE REFUGE

## NARRATIVE REPORT - SEPTEMBER - OCTOBER - NOVEMBER AND DECEMBER

1958

### I. GENERAL

#### A. Weather Conditions

Temperatures and precipitation during September were normal. Precipitation was recorded on 10 days during the month.

October's temperatures were normal but precipitation was well below the 5 year average. The first light frost occurred on the 2nd but the first killing frost did not occur until the 31st, about 10 days later than usual.

Precipitation occurred on 14 days during November and was well above average. Temperatures were normal. All lakes and ponds, including Lake Chautauqua, froze over on the 27th following the first cold weather of the season.

December's temperatures averaged 23 degrees which was about 6 degrees below normal for the month. A cold wave tumbled the mercury to low readings of -7 on the 9th and 10th. Temperatures did not rise above the freezing mark for 10 consecutive days. Recorded precipitation of 0.33 inches was 1.47 inches below the 5 year average.

A summary for the period shows that temperatures averaged about normal for the first three months and well below normal during December. Precipitation for this period was 6.78 inches as compared to the 5 year average of 8.60 inches. 11.41 inches were received during the same period last year.

A table showing temperature and precipitation data obtained from the official weather station in Havana follows.

Month	1958 Temperatures		5 Year Extreme Temp.		1958 Precip. Snow		5 Year Average Precip.
	Max.	Min.	Max.	Min.	Precip.	Snow	Precip.
September	92	40	101	36	1.91		1.91
October	81	29	93	26	1.59		2.99
November	75	5	77	8	2.95	4"	1.90
December	56	-7	65	-3	0.33	4"	1.80
Totals & Extremes	92	-7	101	-3	6.78	8"	8.60



## B. Habitat Conditions

### 1. Water

The water level in Lake Chautauqua was held near the approved level of 435.0 feet during most of the period. Due to the prolonged high water levels in the Illinois River during the summer, we were unable to reach the approved summer elevation of 434.5 feet for the period from May 1 thru September 15. However, we were able to lower the water level to 435.0 feet by September 1.

Since it was not practical to lower the water level to 434.5 feet for the remaining 15 days of the summer period, approval was received to maintain the water near 435.0 feet for the remainder of the year.

Listed below are the gauge readings for Lake Chautauqua for this period and for the past two years showing the high and low levels for each month during this period.

Month	1958		1957		1956		Record High and Year
	High	Low	High	Low	High	Low	
Sept.	435.1	434.9	434.8	434.2	434.7	434.5	441.3 - 1936
Oct.	435.0	435.0	434.7	434.2	434.7	434.4	441.4 - "
Nov.	435.2	435.0	434.9	434.7	435.1	434.7	441.5 - "
Dec.	435.2	435.2	435.0	434.9	435.3	435.1	439.5 - "

### 2. Food and Cover

#### a. Migratory Birds

Waste corn and small grains in the fields near the refuge provided the only supply of food for the migrating and wintering waterfowl. Natural and seeded aquatic vegetation did not exist on the refuge or on any other area along the Illinois River because of the flood conditions during the summer and early fall.

Migrating waterfowl remained on the refuge for only two or three days and then resumed their southward flight. Most of our field-feeding species of waterfowl fed in the corn and grain fields on the west side of the river until these fields were plowed. After that time, they were forced to feed further away from the refuge. Feeding flights of mallards were seen returning to the refuge from fields over twenty miles away.

The Button Bush, Willow and Cottonwood growth along the lake shore provided excellent cover for the dabbling ducks especially during the periods of high winds. After the lake and the small water areas froze over, most of the wintering birds concentrated in Quiver Creek for protective cover.

b. Upland Game Birds

Both food and cover are readily available for the Bobwhite. Osage orange shelterbelts, multiflora rose hedges and the timbered areas provide excellent winter and escape cover. Waste grain in the fields near the refuge and weed seeds provide an ample supply of food.

c. Big Game Animals

The heavy brush and timbered areas in Melz Slough and in Liverpool Lake will provide sufficient cover for the White-tailed Deer. Food conditions for the deer are not good on the refuge; however, sufficient food is available on the nearby forest lands.

## II. WILDLIFE

### A. Migratory Birds

#### 1. Waterfowl

##### a. Geese

Fairly large flights of Canada Geese are seen every fall flying southward over the refuge, but only a few usually stop on the refuge. This year was an exception. A peak of 720 Canadas (including all subspecies) was recorded on October 11, the highest population since 1954 when 2,000 were present. The Canada use days for this period is about six times greater than that recorded for 1957.

The Honkers arrived at the refuge a week earlier than they did last year; some stayed in this area throughout the period. A peak concentration of 640 occurred on October 11, approximately at the same time as the peak occurred last year.

Little Canada Geese arrived at Chautauqua on October 5 and remained until November 1. They reached their peak of 280 on October 16; only one was observed during the fall of 1957.

The Snow and Blue Geese arrived on October 6, about the same time as they did last year. Two peaks were reached this year; one of 430 on October 16 and the other on December 5 when 2,000 were present. Snow and blue goose use days were about the same as last year. They were present on the refuge in smaller numbers, but stayed on the refuge for four weeks longer than they did during 1957.

The snow:blue ratio for the first migrants indicated that there were approximately 1.4 blues for each snow. The second group of migrants which had arrived by December 2 had even a



greater ratio. There were approximately four times as many blues in this group as there were snows.

The adult:immature ratio indicated that there were about 0.3 immature snows for each adult and about 0.2 immature blues for each adult blue.

#### b. Ducks

During September and the first two weeks of October, Mallards were present in relatively small numbers, but during the week of October 12, the population began to increase. The first mallard migration was about one week ahead of last year. Larger migrations however, did not occur until the first week of November; about two weeks later than last year. The mallards peaked at 300,000 on December 2 compared to the 160,000 peak recorded last year. At the close of the period, approximately 40,000 were still present on the refuge.

Mallard use days were approximately a million and a half greater this year than they were for the same period during 1957. This represents an increase of about 30 percent. Other dabbling duck usage increased about 74 percent and divers increased 29 percent.

The use days and peak numbers for each species for this period during 1958 are listed in the following table where they are compared with the 1957 data.

Peak Number and Use Day Comparisons  
For All Ducks Other Than Mallards For  
The Years of 1957 and 1958

Species	Peak Numbers		Use Days	
	1958	1957	1958	1957
Black	1,600	1,700	77,070	63,388
Gadwall	450	220	7,504	1,540
Widgeon	160	75	3,850	875
Pintail	170	80	5,320	2,814
G.W. Teal	100	250	2,940	6,930
B.W. Teal	4,500	150	36,890	4,277
Shoveler	125	50	1,526	399
Wood Duck	520	300	20,300	8,841
Redhead	70	50	770	525
Ring-necked	2,200	3,290	21,364	47,775
Canvasback	410	950	14,854	33,362
Scaup	12,500	1,425	107,590	30,275
Goldeneye	200	100	2,940	2,345
Ruddy	750	500	9,765	7,210



It can readily be seen in the above table that the use days for most of the species show a considerable increase. However, Green-winged Teal, Ring-necked and Canvasback ducks show a decided decrease. Other species such as the Black, Goldeneye and Ruddy ducks show only a slight increase. The Blue-winged Teal and the Scaup use days were greatly increased by their high populations for a short period of time.

Waterfowl usage of the Chautauqua Refuge during 1958 was strictly for resting purposes. Food for all species of waterfowl was completely absent. The birds rested on the lake only for a few days and then resumed their southward flight.

#### c. Coot

The first coot was seen on September 8. The migration began in earnest on September 16 and by September 20, 3,000 were present. Coots peaked at 4,500 on October 11; about 900 more than last year. Because of the lack of aquatic vegetation, large concentrations of coots remained on the lake for only a few days.

#### 2. Other Waterbirds

Three Common Loons were present on Chautauqua on November 9; they stayed for one week. Only six Horned Grebes were seen this year; Pied-billed Grebes were common.

Double-crested Cormorants were more abundant than during 1957; 300 were present on October 5. Several flocks were seen during early October flying over the refuge, but only a few flocks stopped.

Approximately 300 Great Blue Herons and 500 American Egrets were present during the early part of this period. About 80 herons were still present at the close of the period.

Green Herons, Black-crowned Night Herons and American Bitterns were present in small numbers during the first five weeks of the period.

Ring-billed Gulls began arriving during the last period, but did not reach their peak until December 6 when 40,000 were present. Only a few Herring Gulls were present this fall. Bonaparte's Gulls were fairly abundant during early November; their peak was 600 on November 16.

Sixty Caspian Terns arrived on September 2 and peaked at 800 on November 16. Black Terns were present at the beginning of the period and peaked at 600 on September 13.

### 3. Shorebirds

Killdeer, Common Snipe, Spotted Sandpiper and the Lesser Yellowlegs were the only shorebirds seen on the refuge during this period. Most of these birds were seen along the south dike and in the upper end of Quiver Lake where the mud flats were exposed.

### 4. Doves

The local dove population began to band together during mid-August; nearly all were gone at the beginning of the hunting season on September 1. Small groups of doves were seen in the picnic area and along the west dike during this period; the larger concentrations of doves were found along Quiver Creek. Only eight were seen during the Christmas Bird Count.

### B. Upland Game Birds

Only five coveys of Bobwhite were seen on the refuge during this period, but each covey contained about 30 birds. Although no census was made, this would indicate that the refuge population is fairly stable.

One hen Ring-necked Pheasant was seen south of refuge headquarters on October 4; the first that had been seen in several years on the refuge. Eight pheasants were raised by Mr. Harry Rudolph, who lives near the refuge, and released in a nearby field during October. None have been seen since their release.

### C. Big Game Animals

No White-tailed Deer were seen on the refuge during this period; however, tracks of a few were seen on the Illinois River ridge north of Liverpool Lake during mid-October.

### D. Fur Animals, Predators, Rodents, and Other Mammals

#### 1. Fur Animals

Muskrats are fairly abundant on the refuge as well as in Quiver Creek and in other adjacent areas. Their numbers appear to be nearly stable.

Mink numbers are believed to be at a low level. Only one was seen along the lake shore.

Two colonies of Beaver are presently located on the refuge; one in Quiver Creek and the other in Liverpool Lake.

The Opossum is very abundant on and adjacent to the refuge. Several were seen each night on the roads near the refuge early in this period.



## 2. Predators

A Red Fox was seen entering onto the refuge on December 10. At the present time, there are at least six foxes in the southern portion of the refuge near the waterfowl concentrations.

The Raccoon is very abundant in the timbered areas on and adjacent to the refuge. Control measures should be initiated, but the local trappers are not interested because of the low prices being offered for 'coons.

## 3. Rodents

White-footed Deer Mice and Woodchucks are very common in the wooded areas along the east shore of Lake Chautauqua. Pocket Gophers are abundant especially in the pastures on the adjoining private property.

Fox Squirrels are abundant in all of the timber especially on the east side of the refuge. Squirrel hunters had no trouble in obtaining their limits each day. The Cottontail population is also quite high.

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

Red-tailed Hawks were seen frequently throughout this period. Red-shouldered Hawks became common during December along the west dike.

A few Ospreys and Cooper's Hawks were seen during September. Sparrow and Marsh Hawks were seen flying over the adjoining croplands.

The first Bald Eagle was seen on November 30. A total of 25 were seen on December 20 on the ice around the open water holes of the lake and in the trees in Melz Slough.

Great Horned and Barred Owls are commonly heard during the late evening hours of each day, but are rarely seen during the day. Only one Short-eared Owl was seen this year. Screech Owls were not seen on the refuge, but undoubtedly a few are present.

Crows are very abundant and can readily be found along the river and the west dike.

## F. Other Birds

Listed below are the arrival and departure dates at Chautauqua for all birds other than waterfowl.

Species	Status*	Arrival Date	Departure Date
Caspian Tern	TV	9-2	11-22
Green Heron	SR		9-3
Common Snipe	TV	9-8	9-8
Osprey	TV	9-10	9-20



Species	Status*	Arrival Date	Departure Date
Pied-billed Grebe	TV	9-16	10-1
Coopers Hawk	TV	9-16	9-20
American Bittern	TV	9-29	10-7
Double-crested Cormorant	TV	10-1	10-24
Lesser Yellowlegs	SR		10-3
Spotted Sandpiper	SR		10-3
B.-c. Night Heron	SR		10-7
Black Tern	SR		10-8
Slate-colored Junco	WR	10-18	
Marsh Hawk	WR	10-19	
Eastern Bluebird	SR		10-19
**Clay-colored Sparrow	WV	10-19	10-19
White-throated Sparrow	TV	10-19	11-1
American Egret	SR		11-3
Bonaparte's Gull	TV	11-8	11-22
Common Loon	TV	11-9	11-16
Red-breasted Nuthatch	WV	11-10	11-10
Horned Grebe	TV	11-16	11-18
**Red Crossbill	WV	11-21	11-21
Bald Eagle	WR	11-30	
Herring Gull	SR		12-20
Short-eared Owl	WV	12-20	

\*SR - Summer Resident

WR - Winter Resident

WV - Winter Visitor

TV - Transient Visitor

\*\* - New addition to refuge bird list

#### Christmas Bird Count

On December 20, a Christmas Bird Count was made within a 15 mile diameter circle of the refuge headquarters by Arnold Fritz, William Starrett, both of the Illinois Natural History Survey, and the manager.

A total of 34 species comprising about 98,555 individuals were seen. A tabulation of the species and numbers seen is listed below.

Species	No. Seen	Species	No. Seen
Great Blue Heron	86	Red-bellied Woodpecker	6
Mallard	95,000	Hairy Woodpecker	3
Black Duck	1,600	Downy Woodpecker	16
Wood Duck	3	Blue Jay	27
Hooded Merganser	2	Common Crow	44
Common Merganser	40	Black-capped Chickadee	26
Red-tailed Hawk	1	Tufted Titmouse	8
Red-shouldered Hawk	1	White-breasted Nuthatch	7
Bald Eagle	25	Brown Creeper	1

Species	No. Seen	Species	No. Seen
Marsh Hawk	4	Carolina Wren	5
Herring Gull	1	Mockingbird	1
Ring-billed Gull	322	Starling	227
Mourning Dove	8	House Sparrow	505
Screech Owl	1	Cardinal	209
Short-eared Owl	1	Slate-colored Junco	300
Belted Kingfisher	1	Tree Sparrow	67
Yellow-shafted Flicker	3	Song Sparrow	4

#### G. Fish

All species of fish common in the refuge waters appear to be in excellent condition. Reproduction during 1958 was only fair because of the prolonged period of extreme high water. Suitable spawning sites were not available for most species of sport fish.

The sport fishing pressure continued to be fairly heavy during the early part of September, but decreased rapidly during the latter part of the month. High winds and cool weather were probably the greatest factors in reducing the fishing pressure.

After the closing of the fishing season on the major portion of Lake Chautauqua on September 30, only a few fishermen fished at the brush piles near the boatyards. The borrow ditch outside of the main dike at Goofy Ridge continued to receive a high degree of use. At the close of this period, a few hardy ice fishermen could be found trying their luck at the brushpiles at boatyards one and two and were rewarded with good catches of Bluegill.

The following table shows the creel census for the year at boatyard #1 and compares it with the past two years.

Creel Census at Boatyard One at  
Chautauqua Refuge for 1956 - 1958

Species	1958	1957	1956
Bass	605	380	688
Bluegill	11,726	11,169	9,531
Crappie	2,089	8,098	3,899
Yellow Bass	2,625	2,098	322
White Bass	10	36	29
Ring Perch	15	47	20
Bullhead	984	634	531
Channel Catfish	622	976	877
Drum	992	1,054	1,188
Carp	561	327	94
Buffalo	7	9	10
Totals	20,236	24,828	17,189
Number of Fishermen	4,571	5,718	4,345
Catch Per Day	4.4	4.5	3.9



As in past years, the bluegill comprised the largest percent of the fish caught on the refuge. Yellow Bass, Crappie, Drum and Bullheads were the next most abundant fishes caught.

The average catch per day for 1958 continued to be very good even though less fishermen were present. Fluctuating higher water levels during 1957 and 1958 probably influenced a greater catch per day more than any other factor.

The Illinois Department of Conservation continued to fish the most southern portion of the refuge with hoop nets to catch fish for restocking purposes until September 30. The fish removed from the refuge have been placed in small lakes throughout the state near 33 cities for children's fishing rodeos.

A tabulation of the fish removed from the refuge by the State during 1958 is listed below.

#### State Fish Removals From Chautauqua During 1958

<u>Species</u>	<u>Number Removed</u>	<u>Species</u>	<u>Number Removed</u>
Bass	147	Black Bullhead	146
Bluegill	2,584	Channel Catfish	37
Crappie	3,869	Drum	157
Yellow Bass	614	Carp	81
White Bass	492	Buffalo	12
		Total	8,139

#### H. Reptiles

Only a few species of reptiles have been noted on the Chautauqua Refuge. Of the turtles represented on the refuge, the Western Painted Turtle is the most abundant. They can be readily be found resting on nearly every log in the more protected areas along the lake shore and in Quiver Creek. The Soft-shelled and the Snapping Turtle are fairly abundant and are commonly taken on trotlines each year.

A few Bull, Garter and Spreading Adder Snakes are seen every year. The bull snake was the only species seen during this period.

#### I. Disease

Only a few lead poisoned ducks were observed during this period. Less than 50 birds were seen that exhibited symptoms of lead poisoning.

The permanent freezing over of the shallow water areas on the hunting areas during the latter part of the period made the lead shot unavailable. The lack of vegetation probably also tended to reduce the concentrations of waterfowl on the hunting areas.

Losses from other causes, excluding crippling losses, were not apparent.



### III. REFUGE DEVELOPMENT AND MAINTENANCE

#### A. Physical Development

##### 1. Dike Work

Approximately 500 feet of the dike between the south and west spillways were cleared of trees during this period. This section of the dike has eroded badly due to flood waters and wave action. Trees will be cleared from the slope and fill hauled to build this section up to a 12 foot crown with a 3:1 slope. Sub-zero temperatures in early December halted work until spring.

##### 2. Maintenance and Operations

Cleared and brushed refuge telephone line.

Reposted Liverpool Lake public hunting area and refuge boundary.

Replaced boundary fence at boatyard #2.

Wired 6-stall garage (building #5).

Cleared and brushed recreational area.

Relocated one-fourth mile of refuge telephone line.

Put up 20 new metal wood duck boxes.

Repaired wash at boatyard #1.

Graded refuge roads, trails and dikes as needed.

Repaired and rip-rapped south and west spillways.

Constructed fence on north dike at radial control gates.

Repaired universal joint and front shocks on IHC pickup.

Installed flares and mud flaps and repaired signal lights on Dodge dump truck.

#### B. Plantings

##### 1. Aquatics and Marsh Plants

None this period. The mud flats in Liverpool Lake were not exposed early enough during this year to permit the seeding of moist soil plants.

##### 2. Trees and Shrubs

None this period.

3. Upland Herbaceous Plants

None this period.

4. Cultivated Crops

The bromegrass, lespedeza and bluegrass seeding on the fifteen acres of retired cropland failed to become well established this year even though the initial growth was good. We are planning to seed this area again during this spring with a bromegrass, alfalfa and sweet clover mixture.

C. Collections and Receipts1. Seed and Other Propagules

None this period.

2. Specimens

None this period.

*M. B. B.*

D. Control of Vegetation

Approximately 14.5 acres of dikes and trails were sprayed with ground equipment on August 27 using a mixture of 2,4-D and 2,4,5-T with water as a carrier. Results were good. A complete breakdown on the spraying operations follows.

E. Planned Burning

None this period. Approval has been received to burn approximately 150 acres of dead willows in the Liverpool Lake unit. These willows, killed by aerial spraying, will be burned next period to make this area suitable for the seeding of moist soil plants.

F. Fires

No fires were reported during this period. Precipitation was adequate early in the period to alleviate any fire danger.

## IV. RESOURCE MANAGEMENT

A. Grazing

None.

B. Haying

None.

C. Fur Harvest

None this period.

D. Timber Removal

None this year.

M.B.S.

PEST PLANT CONTROL REPORT

Chautauqua Refuge, Calendar year 1958  
(To be inserted in the September-December Narrative Report)

Species	Date	Growth Stage	Chem.	Dilut.	Rate	Method	Water Depth	COST				P/Acre	% Kill		Remarks
								Mat'l.	Labor	Equip.	Total		Fall	Spring	
Black Willow & Am. Elm	8-27	Mature	2,4-D	Water	2.3	Ground spray		60.09	13.32		\$73.41	\$5.06			
			2,4,5-T	Water	1.1										

INSTRUCTIONS ON REVERSE SIDE

Attach this side in Narrative Report - Cut out and fold in the End





## INSTRUCTIONS

List all treatments made on one species, i.e., Canada thistle, before listing treatments on other species; then give a sub-total cost of treating each species and average cost per acre. Following the final entry on this form give grand total figures showing total cost for all treatments on all species and average cost per acre for treating all species during the calendar year covered by this report.

Make a separate entry for each set of completed "Application Data" and "Observations of Results" forms. The data can be transferred directly to this form; hence the importance of recording the information immediately on "Application" and "Results" forms when spraying is done or observations on results are made.

1. Species: Use common and scientific name.
2. Date: List dates applications were made, using separate line for each area treated. If two separate treatments were made on an area during the summer you should record two entries on this form.
3. Growth Stage: i.e., half leaf, full leaf, early bud, full flower, etc.
4. Chem.: Show type of herbicide used, i.e., 2, 4-D ester, etc.
5. Dilut.: Show diluent or carrier used plus stickers and spreaders added, if any.
6. Rate: Give lbs. acid equivalent per acre - not pounds of herbicide or lbs. of total mix. Check % acid equivalent on label.
7. Method: i.e., boom spray, cluster spray, hand spray, aerial spray, etc.
8. Water Depth: Would apply only when phragmites, etc., were sprayed.
9. Cost, material: Cost of herbicide, diluent (carrier), stickers, spreaders and other materials - take from "Application Data" form.
10. Cost, labor: Take from "Application Data" form.
11. Cost, equipment: Equipment operation costs taken from "Application Data" form.
12. Cost, total: Show total cost for each separate application as taken from "Application Data" form.
13. Cost, per acre: Show cost per acre separately for each application on a given area - take from "Application Data" form.
14. % Kill, fall: Per cent of plants killed by application of herbicide during the preceding summer and spring.
15. % Kill, spring: Per cent of plants showing no regrowth in the spring following treatments made the preceding year or years. Do not record data on spraying done during previous years. Explain briefly in space for remarks the spraying done during previous years if you give % kill for spring.
16. Remarks: Include factors such as weather, etc., not shown elsewhere. Explain briefly the spraying done on this area in previous years if you make an entry in the column "% Kill, spring."



### E. Commercial Fishing

On August 15, a meeting was held for the commercial fishermen interested in our September seining program. The refuge and State regulations and the program were discussed and five contracts were signed.

Seining began on September 2 with five crews participating. One crew quit after making two hauls; two more crews quit during the following week. High winds, cold weather and low fish prices probably caused all but two of the crews to discontinue fishing.

Also during September, sixteen hoop net permits were still in force, but only six fishermen fished.

Fish prices averaged near \$0.04 per pound for Carp, \$0.08 per pound for Buffalo, \$0.25 per pound for Channel Catfish and \$0.07 per pound for Drum.

The following tabulation lists the pounds of commercial fish caught by each permittee during 1958.

Commercial Hoop Net and Seine Catch in Pounds  
For March Thru September - 1958  
Chautauqua Refuge

Permittee	Type Gear	Carp	Buffalo	Drum	Channel Catfish	Bullhead	Total
R. Clark	S	12,466	5,789	3,507	458	2	22,222
F. Davis	S	1,115	2,775	1,200	362		5,452
M. Foster	S	14,978	24,950	16,768	1,239	11	57,946
C. High	HN	400	1,750	0	4	0	2,154
R. High & R. Howell	HN	8,826	24,584	566	616	0	34,592
E. Kelly	HN	6,210	5,061	330	572	67	12,240
O. Kenny	HN	Did not fish					
W. Lange	HN		45				45
G. Lannery	HN	815	1,368	91	59	53	2,386
J. O'Grady	S	17,894	3,826	2,851	861		25,432
C. Rhodes	HN	Did not fish					

Permittee	Type Gear	Carp	Buffalo	Drum	Channel Catfish	Bullhead	Total
D. Richardson	HN	887	20,908		21		21,816
C. Riley	HN	2,650	9,300	1,480			13,430
	S	220	1,917	1,688	52		3,877
Wm. Riley	HN	Did not fish					
F. Rudolph	HN	3,396	7,471	43	185		11,095
G. Shafter	HN	1,815	2,185	70			4,070
O. Stockman	HN	Did not fish					
O. Warren	HN	400	225	10		35	670
C. A. Watts	HN	806	3,790				4,596
Total Hoop Net		26,205	76,687	2,590	1,457	155	107,085
Total Seine		46,673	39,257	26,014	2,972	13	114,929
Grand Total		72,878	115,944	28,604	4,429	168	222,023

#### F. Other Uses

##### 1. Boatyards

Three permits for the operation of three boatyards on the refuge continued in effect. A total of 105 rental boats were permitted for use on refuge waters during 1958. Each boatyard operator paid \$1.00 for each of his boats and rented them to the public for \$1.25 to \$1.50 per day.

Boatyard operations were less profitable for the operator this year than in the past probably because of the adverse weather conditions and the trend toward private ownership of the boats.

##### 2. Cottages

Thirty-three privately owned cottages still remain on the refuge on a lifetime free use basis. None of the cottages was removed from the refuge this year because of death, non-use or for other reasons.

The cottage which is owned by Mrs. Nellie Weaver of Peoria is still for sale, but to date no one has desired to pay the \$500.00 purchase price.



## V. FIELD INVESTIGATION OR APPLIED RESEARCH

A. Waterfowl Banding

The fall wood duck banding program got under way on September 29 when the ducks began concentrating in specific areas.

Three walk-in type traps were placed in the shoreline vegetation south of the tower. Since the trapping operation was successful in trapping only mallards in this area, the traps were removed. Two were relocated in Melz Slough and the other near refuge headquarters.

We had hoped that we could trap at least two male and four female woodies for shipment to the National Zoological Park, Washington, D.C., but we were successful in trapping only two pair. We continued to operate the traps even after the majority of the wood ducks had left in an effort to trap any other species, but the raccoon predation forced us to discontinue our efforts on November 24.

The ducks banded during this period are listed below.

Species	Male		Female		Total
	Adult	Imm.	Adult	Imm.	
Mallard	13		12	1	26
Black Duck			1		1
Wood Duck	1	1	2		4
Total	14	1	15	1	31

B. Migration Study

During this period we began a migration study in cooperation with Mr. Frank Bellrose of the Illinois Natural History Survey.

This study involved the use of a parabolic reflector, a microphone and a tape recorder. In the past, a very high percent of the migrating waterfowl that were arriving or departing from the refuge were moving during the night or during the early morning hours when we were unable to observe their activities. In order to pin-point the arrival and departure time of both migrating and field-feeding waterfowl, Mr. Bellrose obtained this equipment.

The parabolic reflector is an aluminum reflector five feet in diameter and is mounted in an aluminum frame (see photo section).

At the center of this reflector, a sensitive microphone was mounted in such a manner that it only picked all of the sounds within a one degree field.

The wires from the microphone were run through a timing device which would energize the microphone for only  $1\frac{1}{2}$  minutes during every ten minutes. The wires from the timing device ran to a tape recorder which was in continuous operation, but recorded only when the microphone was operating. Since recordings were being made during only a  $1\frac{1}{2}$  minute period during each ten minutes, a 200 foot tape would last for approximately twelve hours.

This device was first put into operation at the Illinois Natural History Survey Laboratory. The reflector was placed on the ground so that only sounds from overhead would be picked up. The device was successful in recording field-feeding birds, but it also recorded the calls made by the birds in the holding pens. Therefore, the calls from the captive birds blanked out or made it impossible to distinguish between the calls.

In order to eliminate this difficulty, the device was moved to refuge headquarters where the reflector was mounted on the observation tower so that sounds from over the lake to the north would be picked up; the other equipment was installed in the tower cab.

This operation was also unsuccessful. By the time that the equipment was put into operation, the night temperatures dropped low enough to prevent the recorder from operating correctly. The reels on the recorder were sluggish and failed to revolve at the required speed causing no recording.

This study was then discontinued, but will be resumed again this spring.

## VI. PUBLIC RELATIONS

### A. Recreational Uses

Sport fishing use of the refuge was light during the period except for the borrow ditch at Goofy Ridge. After the lake froze, a few ice fishermen could be found fishing in the brush piles at the boatyards. Some of the best catches of the season were recorded at this time and one individual took over 200 bluegills in a day's fishing.

The recreational area received good use during the early part of the period. This area was closed prior to the opening of the waterfowl season.



The usual number of tower climbers, bird watchers and unsuccessful hunters visited the headquarters area.

Refuge cottage owners visited their property frequently during the first two months of the period but this use dropped with the advent of colder weather.

#### B. Refuge Visitors

<u>Date</u>	<u>Name</u>	<u>Address</u>	<u>Purpose of Visit</u>
Frequent	Marshall Stinnett	FWS - Game Agent	Law Enforcement
Frequent	Victor Blazevic	FWS - Game Agent	Law Enforcement
Frequent	Ross Dixon	Peoria, Illinois	Seining Program
9/12	Norman Kleig	Wheaton, Ill.	News story
9/21-22	H. Nelson H. Huenecke	Regional Office " "	Inspection "
9/22	Dr. Wm. Green	FWS-Winona, Minn.	Inspect Weis Lake
9/24	John Kropke	Ill. Dept. of Consv.	Test net program
9/27	Biology Class	W.I.S.U. - Macomb	Field Trip
9/29	V. C. Connors	State Agent	Law Enforcement
10/7	Joseph Frescolnn	Springfield, Ohio	Source of pulpwood
11/1	Ray Wright	Regional Office	Engineering inspection
11/8	Ornithology Class	Univ. of Illinois	Field Trip
11/13	F. A. Carpenter J. D. Umburger	Regional Office " "	Refuge Visit " "
11/16	Audubon Club	Champaign, Ill.	Field Trip
11/27	Louis Plattner	State Agent	Law Enforcement
12/3	Arthur Hawkins Al Geis Larry Jahn	Regional Office Patuxent Refuge Wisc. Consv. Dept.	Courtesy Visit " " " "
12/5	Kenneth Johnson	W.I.S.U. - Macomb	Wood Duck Study

Date	Name	Address	Purpose of Visit
12/13	Dr. Geo. Hendrickson	Iowa State College	Courtesy Visit
	Dr. Milton Willer	" " "	" "
	Dr. K. D. Carlander	" " "	" "
	James Schmulback	" " "	" "
	Marvin Buckholz	" " "	" "
	David Hoopes	" " "	" "

#### C. Refuge Participation

- Sept. 4-5 - Norman and Nichols participated in law enforcement activities involving the arrest of alleged waterfowl market hunters in the Beardstown and Browning areas.
- Oct. 21 - Norman conducted 50 biology students from Western Illinois University, Macomb, on a tour of the refuge.
- Nov. 8 - Norman conducted 40 Ornithology and Wildlife students from the University of Illinois on a tour of the refuge.
- Nov. 16 - Norman conducted Champaign Audubon Club on a tour of the refuge.
- Dec. 17 - Norman attended weekly meeting of the Havana Optimist Club.
- Dec. 20 - Norman, Dr. Starrett and Mr. Fritz made Christmas Bird Count on and adjacent to the refuge.

Several news releases concerning refuge fishing and hunting regulations were distributed to Peoria, Pekin, Canton, Springfield and Havana papers during this period.

#### D. Hunting

Waterfowl hunting in the vicinity of the refuge was very poor; some hunters stated it was the poorest season since the early 1930's. The lack of natural vegetation combined with mild weather during the first half of the season and the almost complete freeze-up after Thanksgiving contributed greatly to the poor hunting. About 1,500 hunter use days, half of last year's total, were recorded on the Liverpool Lake public hunting area. The kill in this area was estimated at about 150-200 birds. The duck kill in the other areas adjacent to the refuge was about half of the 1957 kill. Most of the hunters contacted during the season appeared to accept the poor hunting as "part of the game" and very few complaints were heard.



### E. Violations

The five cases that were still pending at the close of the last period were disposed of as follows:

<u>Name</u>	<u>Address</u>	<u>Violation</u>	<u>Fine</u>
Thomas Burgett	Peoria, Ill.	Fishing w/o a license	\$25 & \$4 costs
Robert Burgett	Peoria, Ill.	Same as above	\$25 & \$4 costs
Martha Tillman	Pekin, Ill.	Same as above	\$25 & \$4 costs
Bessie Kennedy	Pekin, Ill.	Same as above	\$25 & \$4 costs
Alex Kennedy	Pekin, Ill.	Same as above	\$25 & \$4 costs

These violators were apprehended by Mr. Vince Connors, State Warden, and were tried by Mr. Fred Close, the Justice of the Peace in Havana.

The following violators were apprehended by the refuge staff; the first three were tried by Mr. Earl Coleman, the Justice of the Peace in Lewistown, Illinois. The last case was tried by Mr. Close in Havana.

<u>Name</u>	<u>Address</u>	<u>Violation</u>	<u>Fine</u>
Wm. Hendrickson	Havana, Ill.	Carrying an uncased gun in a vehicle	\$25 & \$4 costs
Donald Baker	Havana, Ill.	Same as above	\$25 & \$4 costs
Ray Miller	Havana, Ill.	Same as above	\$25 & \$4 costs
Garnett Pedigo	Peoria, Ill.	Fishing in a closed area	\$25 & \$4 costs

## VII. OTHER ITEMS

### A. Items of Interest

Regularly scheduled monthly safety meeting as well as on-the-job safety discussions were held during the period. No accidents occurred during this period.

Mr. Ed Nichols is credited for his preparation of Sections I-A, III, VI-A thru D, and N.R. forms 1, 6 and 8a. He is also commended for his excellent job of typing this report.

Mr. Les Wohlwend, Maintenceman, is also commended for his work performance.

### B. Photographs

The photos included with this report were taken by the clerk and the manager.

Date: January 16, 1959

K Duane Norman  
K. Duane Norman  
Refuge Manager

Approved: Regional Office

1/20/58  
(Date)

(Signature)

A.E. Jorgensen  
(Name)

Chief Division of Wildlife  
(Title)





Ed Nichols is shown weighing an adult female raccoon for the raccoon-wood duck relationship study. This 'coon weighed 9 pounds 14 ounces. 6-5-58



This photo shows the position of the attachment of an ear-tag on the 'coon. One tag was placed in each ear in hopes that at least one tag would remain attached. 6-5-58



Three masked bandits - the young of the 'coon shown on the preceeding page. 6-5-58



This photo shows a female woodie leaving a natural cavity. Twenty-two percent of the natural cavities found on the refuge were used by wood ducks, but only 33 percent of the nests were successful. 6-5-58



JAN • 59



11-4-58

R-106-4

Les Wohlwend is shown clearing the brush from under the refuge phone line.

JAN • 59



11-4-58

R-106-3

This is a view of another section along the phone line that had been cleared.

JAN • 59



11-20-58

R-106-9

This photo shows the parabolic reflector being readied for mounting on the observation tower.

JAN • 59



11-20-58

R-106-10

The reflector is being hauled to the top of the tower in this photo. The reflector is made of aluminum and is about five feet in diameter (see Section V, Migration Study for details)



JAN • 59



9-58

R-106-1

Most of the fish caught during the September seining program were purchased by Mr. Ross Dixon of Peoria, Illinois, for commercial sale and for stocking in pay fishing areas. This photo shows a portion of the crowd that gathered around the truck each day to watch the loading process.

• JAN • 59



9-58

B-106-2

Bert Sperry, operator of boatyard #1, is shown holding a 16 pound buffalo which was caught early in September. A few of the buffalo weighed 20 pounds each.



JAN • 59

12-27-58

R-107-1

This photo shows a portion of the west dike between the spillways that has been badly eroded. During this period, the trees along the lake shore for 500 feet were cleared in preparation for the dike repair work which will be accomplished during next spring.



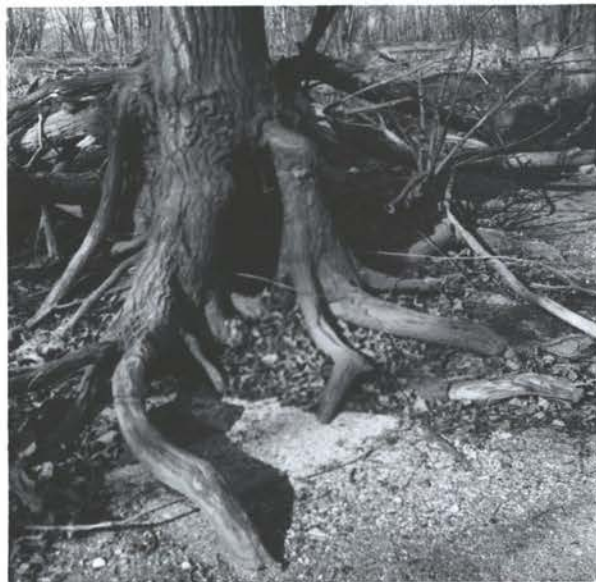
JAN • 59

12-27-58

R-107-2

This photo shows the portion of the dike that has been cleared. Freezing temperatures soon halted this operation.





JAN • 59 •

12-27-58

R-107-3

This photo shows the results of water erosion around a typical tree on the lake side of the west dike.

• JAN • 59



12-27-58

R-107-4

During the latter part of December, ice fishing in the brushpiles near the boatyards became popular. One fisherman caught 200 bluegills during one day.

WATERFOWL

REFUGE CHAUTAUQUA

MONTHS OF SEPTEMBER TO DECEMBER, 1958

(1) Species	(2) Weeks of reporting period									
	8/31-9/6 1	9/7-13 2	9/14-20 3	9/21-27 4	9/28-10/4 5	10/5-11 6	10/12-18 7	10/19-25 8	10/26-11/1 9	11/2-8 10
Swans:										
Whistling Trumpeter										
Geese:										
Canada			13	1	80	720	470	233	78	70
Cackling										
Brant										
White-fronted										
Snow						6	200	200	60	40
Blue						8	230	220	90	60
Other										
Ducks:										
Mallard	80	120	120	80	170	600	7,500	2,000	6,000	40,000
Black	10	20	40	50	60	80	150	200	250	650
Gadwall								200	170	450
Baldpate			80	40	20		10	100	60	160
Pintail		20	160	170	40	70	60	160	40	40
Green-winged teal			100	40	20	50	50	100	20	40
Blue-winged teal	250	250	4,500	80	40	60	60	20	10	
Cinnamon teal										
Shoveler			3	30	40	125	20			
Wood	150	375	375	400	520	400	200	120	250	40
Redhead						70			20	
Ring-necked							2	150	500	2,200
Canvasback					2	280	380	350	410	75
Scaup							20	50	1,100	12,500
Goldeneye										
Bufflehead										
Ruddy				40	450	80	5	50	750	20
Other										
Coot:			3,000	90	420	4,500	2,300	1,600	800	3,500

Int. Dup. Sec.,

Wash. D. C.



3 -1750a

Cont. NR-1

(Rev. March 1953)

# WATERFOWL

(Continuation Sheet)

REFUGE CHAUTAUQUAMONTHS OF SEPTEMBER TO DECEMBER, 1958

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production : Broods: Estimated : seen : total
	11/9-15 11	11/16-22 12	11/23-29 13	11/30-12/6 14	12/7-13 15	12/14-20 16	12/21-27 17	12/28-1/3 18		
<b>Swans:</b>										
Whistling										
Trumpeter										
<b>Geese:</b>										
Canada	25		2	32		36	40	25	12,775	
Cackling										
Brant										
White-fronted										
Snow			2	500	300	40			9,436	
Blue			19	1,500	1,200	160			24,409	
Other										
<b>Ducks:</b>										
Mallard	115,000	105,000	82,000	300,000	35,000	95,000	90,000	40,000	6,430,690	
Black	800	900	1,500	1,500	900	1,600	1,500	800	77,070	
Gadwall	250			2					7,504	
Baldpate	80								3,850	
Pintail									5,320	
Green-winged teal									2,940	
Blue-winged teal									36,890	
Cinnamon teal										
Shoveler									1,526	
Wood	20	30	20						20,300	
Redhead		20							770	
Ring-necked	200								21,364	
Canvasback		150	400	75					14,854	
Scaup	700	800	200						107,590	
Goldeneye			30	200	40		150		2,940	
Bufflehead										
Ruddy									9,765	
Other										
Am. Merganser	140			500	200	140	400	100	10,360	
Hooded Merganser				20	4		8		224	
<b>Coot:</b>	800	500	300						124,670	

(over)



	(5)	(6)	(7)
	Total Days Use	Peak Number	Total Production
Swans			
Geese	46,620	2,032	
Ducks	6,753,997	302,297	
Coots	124,670	4,500	

# SUMMARY

Principal feeding areas Corn fields within a

25 mile radius of refuge.

Principal nesting areas \_\_\_\_\_

Reported by

*K. Duane Norman*  
K. Duane Norman

## 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 CHAUTAUQUAMonths of SEPTEMBER to DECEMBER 1958

(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>										
Common Loon	3	11/9	3	11/16	3	11/16				
Horned Grebe	6	11/16	6	11/18	6	11/18				
Pied-billed Grebe	2	9/16	90	9/17	20	10/1				
D.C. Cormorant	200	10/1	300	10/3	60	10/24				
Great Blue Heron	Summer Resident		300	10/4	Winter Resident					
American Egret	"	"	500	8/25	10	11/3				
Green Heron	"	"	2	9/3						
Black-crowned Night Heron	1	10/7	1	10/7	1	10/7				
American Bittern	1	9/29	10	9/30	10	10/7				
II. <u>Shorebirds, Gulls and Terns:</u>										
Killdeer	Summer Resident		60	8/25	1	12/20				
Wilson's Snipe	1	9/8	1	9/8	1	9/8				
Spotted Sandpiper	Summer Resident		200	9/3	1	10/3				
Lesser Yellowlegs	"	"	30	9/3	1	10/3				
Herring Gull	Summer Resident		10	10/30	1	12/20				
Ring-billed Gull	50	8/26	40,000	12/6	Winter Resident					
Bonaparte's Gull	30	11/8	600	11/16	6	11/22				
Caspian Tern	60	9/2	800	11/16	40	11/22				
Black Tern	Summer Resident		600	9/13	15	10/8				

(over)



(1)	(2)	(3)	(4)	(5)	(6)
III. <u>Doves and Pigeons:</u> Mourning dove White-winged dove	Summer Resident	300	8/23	Winter Resident	
IV. <u>Predaceous Birds:</u> Golden eagle Duck hawk Horned owl Magpie Raven Crow	Permanent Resident				
Coopers Hawk	Permanent Resident	Abundant			
1	9/16	2	9/20		
Red-tailed Hawk	Permanent Resident				
1	12/20	1	12/20	Winter Resident	
Red-shouldered Hawk	1	25	12/20	"	"
Bald Eagle	1	4	12/20	"	"
Marsh Hawk	1	1	9/20		
Osprey	Permanent Resident	6	11/3		
Sparrow Hawk	1	12/20			
Short eared Owl					
Reported by				K. Duane Norman	

#### INSTRUCTIONS

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



3-1752  
Form NR-2  
(April 1946)

UPLAND GAME BIRDS

1613

Refuge CHAUTAUQUA

Months of SEPTEMBER to DECEMBER, 1948

(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.
Bobwhite	Hardwood timber and adjacent upland - 300 acres	2							150	

## 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.



3-1753  
Form NR-3  
(June 1945)

BIG GAME

Refuge

**CHAUTAUQUA**

Calendar Year **1958**

(1) Species	(2) Density	(3) Young Produced	(4) Removals				(5) Losses			(6) Introductions		(7) Estimated Total Refuge Population		(8) Sex Ratio
			Hunting	For Re- stocking	Sold	For Research	Predation	Disease	Winter Loss	Number	Source	At period of Greatest use	As of Dec. 31	
Common Name	Cover types, total Acreage of Habitat	Number												
<b>White-tailed Deer</b>	<b>Bottomland hardwoods</b>											<b>2</b>	<b>2</b>	<b>1:1</b>

Remarks:

Reported by \_\_\_\_\_

### INSTRUCTIONS

#### Form NR-3 - BIG GAME

- (1) SPECIES: Use correct common name; i.e., Mule deer, black-tailed deer, white-tailed deer. It is unnecessary to indicate sub-species such as northern or Louisiana white-tailed deer.
- (2) DENSITY: 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 total number of young produced on refuge.
- (4) REMOVALS: Indicate total number in each category removed during the year.
- (5) LOSSES: On the basis of known records or reliable estimates indicate total losses in each category during the year.
- (6) INTRODUCTIONS: Indicate the number and refuge or agency from which stock was secured.
- (7) TOTAL REFUGE POPULATION: Give the estimated population of each species on the refuge at period of its greatest abundance and also as of Dec. 31.
- (8) SEX RATIO: Indicate the percentage of males and females of each species as determined from field observations or through removals.



DISEASE

Refuge CHAUTAUQUA

Year 1958

Botulism NONE

Lead Poisoning or other Disease

Period of outbreak \_\_\_\_\_

Period of heaviest losses \_\_\_\_\_

Losses:

	Actual Count	Estimated
(a) Waterfowl	_____	_____
(b) Shorebirds	_____	_____
(c) Other	_____	_____

Number Hospitalized	No. Recovered	% Recovered
(a) Waterfowl	_____	_____
(b) Shorebirds	_____	_____
(c) Other	_____	_____

Areas affected (location and approximate acreage) \_\_\_\_\_

Water conditions (average depth of water in sickness areas, reflooding of exposed flats, etc.) \_\_\_\_\_

Condition of vegetation and invertebrate life \_\_\_\_\_

Remarks \_\_\_\_\_

Kind of disease Lead poisoning

Species affected Mallard

Number Affected Species	Actual Count	Estimated
<u>30-50</u>	<u>12</u>	<u>40</u>
_____	_____	_____
_____	_____	_____

Number Recovered \_\_\_\_\_

Number lost \_\_\_\_\_

Source of infection Ingested lead shot from feeding in shallow water hunting areas.

Water conditions Water levels normal

Food conditions No natural food available

Remarks Lowest loss for several years

## PUBLIC USE

Refuge CHAUTAUQUACalendar Year 1958

Total Use Visitor-Days	Hunting Use	Fishing Use	Miscellaneous Use
<b>45,560</b>	<b>1,500</b>	<b>37,860</b>	<b>6,200</b>

Where practical, by means of occasional spot checks, or other methods, show by percent and visitor-days the breakdown of the above figures and other related information:

Hunting (on refuge lands):	Percent	Visitor-Days	Acres	Miscellaneous:	Percent	Visitor-Days
Waterfowl	<u>100</u>	<u>1,500</u>	<u>800</u>	Recreation *		<u>5,200</u>
Upland Game				Official		
Big Game				Economic Use		
Supervised by refuge _____ by State _____			No. of blinds _____	Other **		<u>1,000</u>

Hunting (off  
refuge lands): Estimated man-days of hunting on lands  
adjacent to the refuge 1,800 (These figures  
should not be included in hunting-use totals above).

Fishing:

Acres of ponds or lakes 3,600 and miles of streams  
9 open to fishing.

Comments:

\*\* Includes tower climbing, public use information, etc.

\*(including picnicking, swimming, boating,  
camping, viewing wildlife, and photographing)



3-1757

Form NR-7

(April 1946)

## PLANTINGS

(Marsh - Aquatic - Upland)

Refuge CHAUTAUQUA Year 1958

Species	Location of Area Planted	Rate of Seeding or Planting	Amount Planted (Acres or Yards of Shoreline)	Amount & Nature of Propagules	Date of Plant- ing	Survival	Cause of Loss	Remarks
NONE								

## TOTAL ACREAGE PLANTED:

Marsh and aquatic.....  
Hedgerows, cover patches.....  
Food strips, food patches.....  
Forest plantings.....

3-1758  
Form NR-8  
(Rev. Jan. 1956)

Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge CHAUTAUQUA County MASON State ILLINOIS

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure, Cover and Water- fowl Browsing Crops Type and Kind	Total Acreage
	Acres	Bu./Tons	Harvested		Unharvested				
			Acres	Bu./Tons	Acres	Bu./Tons			
								<u>Cover Plantings</u>	
								Balboa Rye - Smooth Bromegrass - Lespedeza	4
								Smooth Bromegrass - Bluegrass - Lespedeza	8
								Bluegrass - clover	3
									<u>15</u>
								Fallow Ag. Land	

No. of Permittees: Agricultural Operations \_\_\_\_\_ Haying Operations \_\_\_\_\_ Grazing Operations \_\_\_\_\_

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING	Number Animals	AUM'S	Cash Revenue	ACREAGE
				1. Cattle				
				2. Other				
				1. Total Refuge Acreage Under Cultivation				
Hay - Wild				2. Acreage Cultivated as Service Operation				



DIRECTIONS FOR PREPARING FORM NR-8  
CULTIVATED CROPS - HAYING - GRAZING

Report Form NR-8 should be prepared on a calendar-year basis for all crops which were planted during the calendar year and for haying and grazing operations carried on during the same period.

Separate reports shall be furnished for Refuge lands in each county when a refuge is located in more than one county or State.

Cultivated Crops Grown - List all crops planted, grown and harvested on the refuge during the reporting period regardless of purpose. Crops in kind which have been planted by more than one permittee or this Service shall be combined for reporting purposes.

Permittee's Share - Only the number of acres utilized by the permittee for his own benefit should be shown under the Acres column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the Bushels Harvested column. Report all crops harvested in bushels or fractions thereof except such crops as silage, watermelons, cotton, tobacco, and hay, which should be reported in tons or fractions thereof.

Government's Share or Return - Harvested - Show the acreage and number of bushels harvested for the Government of crops produced by permittees or refuge personnel. Unharvested - Show the exact acreage and the estimated number of bushels of grain available for wildlife. If grazing is made available to waterfowl through the planting of grain, cover, green manure, grazing or hay crops, estimate the tonnage of green food produced or utilized and report under Bushels Unharvested column.

Total Acreage Planted - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops - Specify the acreage, kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

Hay - Improved - List separately the kinds of improved hay grown. Annual plantings should also be reported under Cultivated Crops, and perennial hay should be listed in the same manner at time of planting.

Total Refuge Acreage Under Cultivation - Report total land area devoted to agricultural purposes during the year.



## REFUGE GRAIN REPORT

Refuge CHAUTAUQUAMonths of SEPTEMBER through DECEMBER, 1958

(1) VARIETY*	(2) ON HAND BEGINNING OF PERIOD	(3) RECEIVED DURING PERIOD	(4) TOTAL	(5) GRAIN DISPOSED OF				(6) ON HAND END OF PERIOD	(7) PROPOSED OR SUITABLE USE*		
				Transferred	Seeded	Fed	Total		Seed	Feed	Surplus
Early Fortune Millet	100 lbs.		100 lbs.					100 lbs.			
Browntop Millet		500 lbs.	500 lbs.					500 lbs.			
Japanese Millet		400 lbs.	400 lbs.					400 lbs.			
Bromegrass	200 lbs.		200 lbs.		200 lbs.						
Bluegrass	200 lbs.		200 lbs.		200 lbs.						
Alfalfa	200 lbs.		200 lbs.					200 lbs.			
Rye	115 lbs.		115 lbs.					115 lbs.			

(8) Indicate shipping or collection points \_\_\_\_\_

(9) Grain is stored at Refuge headquarters

(10) Remarks \_\_\_\_\_

\*See instructions on back.



## REFUGE GRAIN REPORT

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

**Report all grain in bushels.** For the purpose of this report the following approximate weights of grain shall be considered equivalent to a bushel: Corn (shelled)—55 lb., corn (ear)—70 lb., wheat—60 lb., barley—50 lb., rye—55 lb., oats—30 lb., soy beans—60 lb., millet—50 lb., cowpeas—60 lb., and mixed—50 lb. In computing volume of granaries, multiply the cubic contents (cu. ft.) by 0.8 bushels.

- (1) List each type of grain separately and specifically, as flint corn, yellow dent corn, square deal hybrid corn, garnet wheat, red May wheat, durum wheat, spring wheat, proso millet, combine milo, new era cowpeas, mikado soy beans, etc. Mere listing as corn, wheat, and soybeans will not suffice, as specific details are necessary in considering transfer of seed supplies to other refuges. Include only domestic grains; aquatic and other seeds will be listed on NR-9.
- (3) Report all grain received during period from all sources, such as transfer, share cropping, or harvest from food patches.
- (4) A total of columns 2 and 3.
- (6) Column 4 less column 5.
- (7) This is a proposed break-down by varieties of grain listed in column 6. Indicate if grain is suitable for seeding new crops.
- (8) Nearest railroad station for shipping and receiving.
- (9) Where stored on refuge: "Headquarters granary," etc.
- (10) Indicate here the source of grain shipped in, destination of grain transferred, data on condition of grain, unusual uses proposed.

3-1759  
Form NR-9  
(April 1946)

COLLECTIONS AND RECEIPTS OF PLANTING STOCK  
(Seeds, rootstocks, trees, shrubs)

Refuge CHAUTAUQUA Year 1958

Species	Collections				Receipts		Total Amounts on Hand	Amount Surplus
	Amount	Date or Period of Collection	Method	Unit Cost	Amount	Source		
NONE								

Interior Duplicating Section,  
Washington 25, D.C. 84267



TIMBER REMOVAL

Refuge CHAUTAUQUA Year 1958

Permittee	Permit No.	Unit or Location	Acreage	No. of Units Expressed in B. F., ties, etc.	Rate of Charge	Total Income	Reservations and/or Diameter Limits	Species Cut
NONE								

Total acreage cut over.....

Total income.....

No. of units removed B. F. ....

Method of slash disposal.....

Cords.....

Ties.....