

CHAUTAUQUA

NARRATIVE REPORTS

JANUARY - DECEMBER 1962

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NARRATIVE REPORT ROUTING SLIP

REFUGE CHAUTAUQUA

PERIOD September-December 1962

CHIEF'S OFFICE: Mr. Gillett

~~Mr. Ackerman~~ JA

~~Mr. Fermanich~~

Mr. Goldman

WILDLIFE MANAGEMENT: Mr. Banko

Mr. Stiles

WBB

RESOURCE MANAGEMENT: Dr. Morley

Mr. Stollberg

Mr. Lamb

OPERATIONS: Mr. Hickok

Mr. Regan

PUBLIC USE: ~~Mr. DeMont~~

Mr. Monson

ADMINISTRATIVE SERVICES: Miss Baum

NARRATIVE REPORT

September - December, 1962

PERMANENT PERSONNEL

William L. French

Refuge Manager

Charles W. Watts

Refuge Clerk

Lester Wohlwend

Operator General

CHAUTAUQUA NATIONAL WILDLIFE REFUGE

Havana, Illinois

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CHAUTAUQUA NATIONAL WILDLIFE REFUGE

NARRATIVE REPORT

September - December, 1962

I. GENERAL

A. Weather Conditions.

	<u>Snowfall</u>	<u>Precipitation</u>		<u>Max.</u>	<u>Min.</u>
		<u>This Month</u>	<u>Normal</u>	<u>Temp.</u>	<u>Temp.</u>
September	_____	<u>2.25</u>	<u>3.01</u>	<u>93</u>	<u>33</u>
October	_____	<u>7.43</u>	<u>2.32</u>	<u>88</u>	<u>19</u>
November	_____	<u>.93</u>	<u>2.05</u>	<u>65</u>	<u>21</u>
December	<u>2.7</u>	<u>1.24</u>	<u>1.54</u>	<u>64</u>	<u>- 7</u>
Total	<u>2.7</u>	<u>11.85</u>	<u>8.92</u>	Extremes <u>93</u>	<u>- 7</u>
Annual					
Total	<u>26.5</u>	<u>35.67</u>	<u>33.76</u>		

The above precipitation and temperature data were obtained from the U. S. Weather Bureau station in Havana, Illinois.

Temperatures for the month of September were nearly normal, with precipitation .76 inch below the 10-year average.

During October precipitation was 5.11 inches above the 10-year average. Temperatures were about normal for that month. The first killing frost came on October 25th.

November temperatures were nearly normal for that time of year, with precipitation 1.12 inches below the 10-year average.

The month of December produced 1.24 inches of rain, which is only .30 inch below the 10-year average. The temperatures were slightly below the 10-year average. On December 5th, we had our first snow. On December 6th Lake Chautauqua froze over except for the large spring areas. By the end of December, about five inches of ice covered most of the lake, and many of the spring openings became smaller and some closed over with thin ice.

Generally, we had a dry fall and a late onset of freezing cold which delayed waterfowl flights which normally would have left our area by the first week in December.

B. Habitat Conditions.

1. Water.

The Lake Chautauqua water level was near or below 434.0' MSL throughout this entire period. As the level of the lake approached 433.5' MSL in September, an excellent growth of volunteer marsh emergents developed. The radial gates were opened once when the inflow from the large springs along the east shoreline began to exceed evaporation and the lake level raised to 434.3' MSL. Opening the gates lowered the water to 433.6' MSL, still nearly three feet above the Illinois River. Rainfall was fairly light except during October when a few cloudbursts gave us an extra five inches. The soil was so dry that the sudden heavy rains had no noticeable affect on the river level, but did speed up the springs on Lake Chautauqua, which resulted in our opening the radial gates to exhaust the water. Normally we would hold that water at that time of year, but the West Dike reconstruction contract dragline work required the lake level to be kept as near 433.5' MSL as possible.

Quiver Creek never raised enough to flow into Lake Chautauqua without the use of stoplogs. Since it was necessary to keep the lake down to facilitate construction work, no water was diverted from Quiver Creek. The water of Quiver Creek is not polluted with detergents or industrial wastes and could provide an excellent source of water for Lake Chautauqua if a permanent structure was provided. The existing dam is make-shift and subject to serious damage with each high-water period.

The Cameron Unit was dry enough to accomplish some clearing, but each rain would soften the soil enough to keep the heavy equipment out for a week or two.

2. Food and Cover.

Fall migration really started just prior to this period with the blue-winged teal. Food and cover conditions were excellent. The drawn-down condition of Lake Chautauqua at about 433.6' MSL produced an excellent growth of Japanese millet and volunteer Walter's millet, arrowhead, chufa, spike rush and rice cutgrass. Sago pondweed growth was also excellent throughout the lake. We were able to raise the lake up to about 434.4' MSL after the dragline started working from the top of the new dike. This put about six inches of water onto the ripe marsh plants on the shoreline and mud-

flat areas. These areas of growth ended up completely flattened from heavy duck use by mainly mallard, black duck, American widgeon, blue-winged teal and green-winged teal. In mid-October over 18,000 American widgeon, plus nearly 5,000 mallards covered the sago pondweed areas in the open water.

The Japanese millet hand-seeded on the shoreline and mud-flats at the Cameron Unit matured even though planted in August. It was heavily utilized by mainly mallards in October. Grow Creek dried up completely and no water was available for the fields. A plug constructed to raise it washed out during a heavy rain. At least two culverts will be needed and a small bridge with some type control before Grow Creek water can be utilized. We plan to divert the creek, plus construct several sumps out of spring seepage areas now filled with cattail. From these we will be able to pump water onto the fields when needed next summer with a large low-lift pump we obtained recently from Army surplus sources.

II. WILDLIFE

A. Migratory Birds.

1. Waterfowl.

Total waterfowl days use for both the Chautauqua Refuge and Cameron Unit totaled 9.3 million, compared to 2.6 for the same period in 1961. However, this figure seems small when compared to the 24.8 million use days for mallards only in 1954, on Lake Chautauqua alone. This period's 5.1 million days use by mallards of Lake Chautauqua compares most closely to the 4.9 of 1957, and the 4.4 of 1959. We hope it is an upswing, but instead feel the increase was due to a delayed warm fall, two big mallard flights, open water for over an extra month, generally to January 9th, and abundant food on and off the refuge. The short local hunting season reduced the local disturbance and lack of local hunter interest certainly made a major contribution to the waterfowl remaining in the area and using outside fields no doubt normally denied to them.

The first fall migrants were blue-winged teal which arrived just prior to this period. They increased to a peak by September 5th, along with the arrival of the first pintails, American widgeon and green-winged teal. The wood ducks began arriving September 9th, detected from locals by banding trap catches of adult males for the first time. The

peak American widgeon flight arrived October 14th and moved on a week later, though they were slow building up and contributed considerably to the total days use. The mallards peaked November 25th at 128,850 and then dropped to 500, only to peak again December 26th at 150,000. We feel that this was caused by the sudden freeze on December 6th, then reopening of the lake by warming weather in late December, probably affecting mallard flights clear up the flyway. Mallard use of the Cameron Unit did not really begin until November 4th, but it also had two peak flights of 85,000 on December 2nd, dropping to 30 by December 9th, and back up to 90,000 on December 26th.

Coots were another abundant species, peaking at 23,000 on October 22nd. They didn't remain long and only added 618,555 days use to our total waterfowl days use.

Approximately 20,000 blue geese and snow geese remained on Lake Chautauqua for over two weeks, mostly along the east shore from the fire tower southwestward to the Illinois Natural History Survey Laboratory. They were a beautiful and noisy flock, attracting much local interest from birders. We took many telephoto shots of them, but due to camera problems they will be included in the next Narrative Report instead of this one.

2. Other Waterbirds.

Both great blue herons and common egrets were abundant early in the period, but the common egrets all departed by September 28th, leaving about 20 great blue herons behind who will probably remain all winter along Quiver Creek and in the large spring openings along the east shore of Lake Chautauqua. One apparently migrating flock of 47 common egrets was observed at sunset on September 28th against a pink-tinted sky, flying southwestward, which made a long-to-be-remembered sight. The ring-billed gulls returned in force of about 600 on September 16th and we will have them cleaning up dead fish the rest of the winter and spring.

3. Shorebirds.

There were several unusual sightings this period. We saw 20 avocets on October 17th, when out with Messrs. Starrett and Bellrose, of the Illinois Natural History Survey. On September 16th we saw 20 short-billed dowitchers and on September 12th saw six knots. The short-billed dowitcher and knot are listed as occasionals to rare on the refuge bird list. The avocet isn't on the refuge bird list, but

will be added after checking local records. *Noted ju*

4. Doves.

Mourning dove hunting doesn't seem to be particularly important in this area. They were common throughout this hunting season, but no hunters were seen in the vicinity of the refuge. Mourning doves are still present as of the end of this period in scattered small flocks of three to 10 birds.

B. Upland Game Birds.

1. Quail.

Bob-white quail were common this period in the same areas and apparently same numbers as last year. Local hunting for this species is practically non-existent, as all hunters seem to be interested in ~~either~~ mallards, and other sportsmen in fishing. House cats were observed hunting bobwhite quail frequently and once in awhile a cat met its maker while pursuing that sport.

2. Pheasants.

Ring-necked pheasants were noted during September and October, but none have been seen since, though we feel certain they are still in the area. This species is rare in the vicinity of the refuge and isn't found in huntable numbers until you get about 30 miles east and 50 miles north.

C. Big Game Animals.

We saw several white-tailed deer inside the Chautauqua Refuge this period. Frequently we saw a doe and two fawns in the area from the fire tower to the "ring dike", and a nice antlered buck over near the "upper plug" on the West Dike. A doe with two fawns was seen nearly every trip to the Cameron Unit. Dogs have bothered about running the deer at both the Chautauqua Refuge and the Cameron Unit. The deer observed here were very nervous compared to those noted in the more northern habitats such as in Upper Michigan, northern Wisconsin and Minnesota. We feel this is due to constant harassment by dogs and humans in this area, and that deer numbers would increase materially if this disturbance could be reduced or eliminated.

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

1. Fur Animals.

Muskrats and beaver were common along the West Dike, east shore south of the fire tower and Quiver Creek area. Musk-rats did a lot of tunnelling into the new dike work out at the edge of the berm, but no serious damage. Beaver cut a lot of small cottonwoods along the West Borrow Ditch and tunnelled into the bank on the river side of that ditch, so no damage resulted. We recommended harvest of muskrat for the trapping season, but of the two trappers inquiring, neither would accept the 50-50 split with the Government. We did have one agile trespass beaver trapper who may have taken some beaver. We spotted him several times, but each time he was across a borrow ditch, we had no boat, and by the time we drove to a plug and ran back, he was able to escape across the Illinois River. We did keep him out enough that we feel he had to abandon his traps under the ice when the sudden freeze came. We know what he looks like and hope to get him yet. We had several before-dawn and late-evening stake-outs for him, but the three miles of dike he operated in made one or two men spread out rather thin. We saw considerable mink sign along the West Dike where they had travelled across the plugs in the borrow ditch. When they tracking snows come, we hope to get a better census of our mink population.

2. Predators.

Raccoons are still our worst pest, particularly when we are using funnel traps. It didn't seem to matter whether the traps were on the beach or 50 feet out in the water to a depth of 18 inches, the raccoons still would find them within a night or two after the trap was moved in. The raccoons not only killed the wood ducks, but the constant bending in and out of the funnel tips by the animal forcing its way back out, required rebuilding of that portion on nearly all of our modified "Ohio-type" traps after only four month's use. We destroyed 19 raccoons by live-trapping around the duck traps, making a total of 36 this banding season. We still observe lots of raccoon tracks in the mud, and frequently hear them squawling at night. At the Cameron Unit, screening the chimney has pretty well eliminated the raccoon damage inside the house. That area is also heavily populated with them and banding there will require the same control measures. Stray dogs and cats are common on both the Chautauqua Refuge and Cameron Unit, as is to be expected in an area of fairly dense human habitation. Opossums and striped skunks are not common and seldom seen, yet their tracks indicate they move about in small numbers during the milder weather.

3. Rodents.

One new rodent was identified, not previously recorded in the refuge records. A pine vole was found along the upland oak-hickory hardwood area on the east side of Lake Chautauqua, about one mile south of the Headquarters. One woodchuck is undermining our new entrance road near the highway culvert and has produced a genuine "chuck hole". He will no doubt be driven out when we dig up that area to extend the culvert another 30 feet. Fox squirrels are the most common rodent that is readily observed, though we have many white-footed mice and house mice. Southern flying squirrels can be heard making their highpitched squeaking at night, especially following any sudden sound, such as slamming a door. Plains pocket gophers leave their mounds in many of the fallow field areas and along fence rows, and even in our roads along the east boundry.

4. Other Mammals.

Cotton-tail rabbits are common in the Headquarters area and frequently seen along the upland area on the entire east shore area of Lake Chautauqua. None are known to exist elsewhere on the refuge due to fluctuating water levels. Rarely we see one at the Cameron Unit. Lack of suitable cover there, fluctuating water levels and many uncontrolled stray dogs make life for the rabbit difficult at the Cameron Unit. Clean farming in the farm areas surrounding the refuge make life rough for the rabbits leaving the Headquarters area with its cover and green lawn their best local habitat.

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

1. Hawks.

Two osprey hawks along the Illinois River bank for a few days were our most interesting observations. A goshawk was reported one day by a fairly reliable observer, but we were not able to locate the bird for verification and felt it may have been an adult Cooper's hawk from the description. Sparrow hawks, red-tailed hawks and marsh hawks were most common this period. A sharp-shinned hawk was observed frequently in the Headquarters area and another along the North Dike several times.

2. Eagles.

The first bald eagle was noted on October 16th, an immature.

The peak bald eagle population was 17 on December 2nd, consisting of nine adults and eight immatures. These birds remained through the end of this period, feeding mainly on sick and crippled waterfowl. They sat on the thin ice in a circle around the large flock of approximately 150,000 ducks concentrated in a large spring opening about one-half mile wide and one mile long in the south one-third of Lake Chautauqua. We never actually observed them taking a duck, but saw them feeding on ducks many times. These bald eagles roost in the large cottonwood and silver maple trees along the dikes at night and some have become quite tame. We have cooperated with the "Continental Bald Eagle Project", submitting reports to the Audubon Society at Tavernier, Florida, once each winter and spring season.

3. Owls.

Barred owls are most common with great horned owls being next in observations. One short-eared owl was observed adjacent to the east boundry on December 26th.

4. Crows.

Crows are no problem here. A few remain around the Chautauqua Refuge all winter, but all leave the Cameron Unit where apparently there is no attraction for them. At the Chautauqua Refuge, some open water with sick or dead fish provide winter food, plus local corn fields for grain.

F. Other Birds.

No new species observed this period. All migrants were checked against the Refuge Bird List as they passed through and information was supplied to the Audubon Society regarding arrivals and peaks.

G. Fish.

No fish kill from the drawdown of Lake Chautauqua was noticed. The low level of the Illinois River, 430.1' MSL plus pollution from detergents caused some die-off of gizzard shad in the North and West Borrow Ditches adjacent to the refuge, but caused no public relations problem.

Sport fishing this period was not up the way local fishermen would like to have it, as Lake Chautauqua was drawn down to below 434' MSL the entire period. Actually, at 434' MSL, the fishermen are restricted only because they can't operate their outboards

easily through the sago pondweed and stumps. Those that had the ambition to row, found all the fish they could want.

Crappie, bullheads and channel catfish comprised most of the catch at Boatyard No. 1, while at Boatyard No. 3, bull-head and carp were taken by a different category of anglers. Boatyard No. 3 never slowed down in the fishing activity, and was used by an average of 30 to 90 bank fishermen daily. Boatyard No. 1 slowed down when the water got down to 433.6' MSL, and was used by only a few, 10 to 20 real fishermen who would row out. There is no practical bank fishing at Boatyard No. 1.

We prevailed upon our Operator of Boatyard No. 1 to consolidate his fishermen and fish-success records for the past seven years he has kept them. He voluntarily keeps excellent records and no fisherman or fish-caught gets by him. It is interesting to note that over this seven year period, the number of fishermen has dropped about 35%, but that the average catch per fisherman is up about 1.8x (180%), making the total catch yearly about the same regardless of the number of fishermen. It appears, therefore, that the drawdowns in recent years have discouraged some of the fishermen, but hasn't hurt the total catch one bit.

The most consistent public pressure at this station is for more fishing privileges by a strong army of fishermen. The duck hunters sit back, say nothing, and we fight the fishing battle practically alone, except for two local newspaper outdoor writers who have taken the side of the waterfowl. Rumors start over practically nothing. For example, a large recognition sign was damaged by a car at Boatyard No. 2 recently. The sign was taken down to be repainted and new posts put in. Within two days, a small committee of fishermen came to the Refuge Headquarters asking about a rumor they had heard. Someone saw the sign come down, and spread the rumor that Boatyard No. 2 was being closed. We informed them correctly of the actual situation, but this was typical. A much more wide-spread rumor started immediately following removal of the West Dike reconstruction equipment after completion of the contract work. That one was that now the lake would be kept "many feet" deeper the year around, and that fishing would be very good in 1963. This required a news release and statement that no changes would be made in water level management.

CHAUTAUQUA REFUGE - BOATYARD NO. 1Fishermen and Creel Census 1956 - 1962

<u>Year:</u>	<u>1956</u>	<u>1957</u>	<u>1958</u>	<u>1959</u>	<u>1960</u>	<u>1961</u>	<u>1962</u>	<u>7-Year Total</u>
Fishermen:	4345	5718	4573	3286	4011	2629	2820	27,382
Largemouth Bass:	688	380	605	775	838	555	318	4,159
Yellow Perch:	20	42	20	28	72	16	7	205
Crappie:	3899	8098	2095	2108	7254	3185	4064	30,703
Bluegill:	9531	11169	11637	7767	11972	3710	10959	66,745
Drum:	1187	1054	992	490	1491	1033	815	7,062
Carp:	94	327	561	135	237	344	205	1,903
Yellow Bass:	323	2092	2625	6570	7590	8130	2406	27,936
Bullhead Catfish:	531	535	984	468	1233	1361	936	6,048
Channel Catfish:	877	971	622	283	766	412	353	4,284
White Bass:	29	35	10	5	131	18	39	267
Buffalo:	10	15	10	1	3	4	14	57
Bowfin:	15	5	11	-	5	7	4	47
Garfish:	2	2	1	1	-	-	1	7
Softshell Turtle:	2	2	3	-	5	2	-	14
Snapping Turtle:	-	-	1	-	1	-	-	2
Herring:	-	2	-	1	-	-	-	3
Eel:	-	-	-	1	-	-	-	1
AVERAGE PER PERSON:	3.9	4.3	4.4	5.6	7.8	7.1	7.0	5.5

H. Reptiles and Amphibians.

1. Reptiles.

No new species noted this period.

2. Amphibians.

A large population of bullfrogs was noted in the West Borrow Ditch, with only scattered stumps and drift logs for cover. Previously, a small population in the east side willow areas was the only one known on the refuge. Since the habitat seems excellent here for bullfrogs, we feel that it is the high raccoon population that is keeping their numbers down. None were known to have been taken by fishermen.

I. Disease.

None this period.

III. REFUGE DEVELOPMENT and MAINTENANCE

A. Physical Development.

1. Activity 0221 (West Dike Reconstruction).

Contract 14-16-0003-4741, for reconstruction of a part of the West Dike, to the Peoria Marine Construction Company, Peoria, Illinois, was completed this period. The main amount of fill was wet fill from Lake Chautauqua, but some dry fill from above Liverpool Lake was trucked into the more congested tree areas. Trucking proved to be too expensive for the contractor and they preferred to use their draglines with wet fill. After one final-check turn-down by our Regional Engineers, they piled on more fill, dressed and cleaned up the dike again, and it finally passed final inspection on December 15th. We can now drive clear around Lake Chautauqua and this has been a big asset in law enforcement and census work.

2. Activity 0141-63 (New Entrance Road).

We were successful in obtaining another 50-foot strip of ground by purchase, making a 100-foot wide strip for the road with adequate space now for sloping, cutting and filling. We negotiated with the Peoria Marine Construction Company, Peoria, Illinois, to do the cut and fill work with their dozer, scraper and operator. However, before they

could get in their heavy equipment, freezing weather prevented completion of the cutting and filling. Their scraper is here and work will resume as soon as the frost is out. Since it is all dune-type sand, we should be able to get an early start on it. In the meantime we have removed the old stumps and logs that were pushed off onto private property during the initial informal contract clearing in 1961. We have also nearly completed the additional timber clearing necessary for the wider cuts and have installed an 80-foot 15-inch culvert between the the first and second hill in a natural drainage. An additional length of culvert will be needed at the beginning of the new road near the blacktop to lengthen one already installed.

3. Operations and Maintenance (0141-63).

New refuge well completed by informal contract. A six inch drilled well, 71 feet deep with submerged pump.

Installed new combination aluminum window and storm sash in Headquarters Building and painted window casings.

Repaired fire scorched area of Headquarters Building and repainted cornice.

Installed four new combination aluminum windows and storm sash in residence and painted window casings. Three of these windows created a picture-window affect in the living room and replaced two rotted frame windows.

Repainted living room and bathroom of residence - donated time.

Replaced all refuge padlocks with a new series with individual and a master key set.

Mowed shoulders of all refuge roads as necessary.

Cleared two miles of boundry at the Cameron Unit, set in brace posts and posted entire boundry, including lake area.

Repaired Quiver Creek Dam with approximately 2,000 yards of sand and clay fill obtained with refuge dragline from borrow area near new entrance road.

Started construction of new boat landing, water gauge site and sump for fire pump near Refuge Headquarters.

Tore down and cleaned up Cottages Nos. 19 and 26, within the refuge boundry.

Cleared new boundry for fencing from old to new entrance road along east side.

Cleared away dead and cull trees around house and buildings at the Cameron Unit.

Installed fire siren on Headquarters Building.

Installed new brake shoes on the IHC pickup.

Replaced exhaust system, lights, mud-flaps and repainted the surplus GMC stake truck.

Repainted the surplus GMC 1951 dump truck.

Graded east side boundry road with dozer and scraper from Headquarters to the South Spillway.

Assisted Regional Office Engineers with cross-sectioning of the West Dike, North Dike and new entrance road, plus marking bench-marks, approximately 22 man-days.

Removed old boat dock pilings and pier at Headquarters which had been damaged beyond repair by ice action.

Replaced master cylinder on IHC pickup.

B. Plantings.

1. Aquatic and Marsh Plants.

None this period.

2. Trees and Shrubs.

None this period.

3. Upland Herbaceous Plants.

None this period.

C. Collections and Receipts.

1. Animal Specimens.

None this period.

2. Refuge Herbarium.

None this period.

D. Control of Vegetation.1. Chemical.

None this period. ✓

2. Mechanical.

Cleared two miles of fence line at Cameron Unit of trees and brush with dozer, ax and brush-hook.

Cleared one-quarter mile of fence line at Chautauqua Refuge of trees and brush with dozer, ax and brush-hook.

E. Planned Burning.

None this period.

F. Fires.

None this period.

IV. RESOURCE MANAGEMENT

A. Grazing.

None.

B. Haying.

None.

C. Fur Harvest.

One permit was issued to trap an unlimited number of raccoon, opossum, striped skunk and weasel on the South Dike and south portion of the West Dike below the West Spillway. This was an area of good wood duck trapping and raccoon problems. The trapper took 11 raccoons during November and December.

D. Timber Removal.

None this period.

PEST PLANT CONTROL REPORT

Chautauqua

Refuge, Calendar Year 1962

(To be inserted in the September-December Narrative Report.)

Plot No.	Acres	Species Treated	Growth Stage	Date of Treat.	Chem. or Method Used	Dilut. or Carrier	Rate Per Acre	Water Depth	Material	Cost	Labor	Equipment	Total	Per Acre	% Kill last Observ.	Date last Observ.
	None this year.															

INSTRUCTIONS ON REVERSE SIDE

Additional forms will be supplied by Regional Office upon request.

Remarks: Include any important information not given in above columns, including No. of years an area has been treated where repeated treatments have been made.

The black willow, cottonwood, silver maple and American Elm areas treated in 1961 still show better than 95% kill on the black willows, but only about 40% on cottonwood, silver maple and elm at the Cameron Unit. The fence-row areas treated at Chautauqua still show at least 70% on the black willow, American elm, silver maple and cottonwood.

R3-WC1 - April 20, 1962

INSTRUCTIONS

1. Plot No: Number used to identify the area of infestation in the field and on maps.
2. Acres: Use decimals, not fractions.
3. Species Treated: Use common and scientific names. LIST ONE SPECIES - THE PRIMARY ONE.
4. Growth Stage: i.e., Bud, half leaf, full leaf, early flower, full flower, etc.
5. Date of Treatment: Dates applications were made, using a separate line for each area treated. If more than one treatment is made on the same area during the summer, a separate line is used for each application.
6. Chemical or Method Used: Show type of herbicide; i.e., 2,4-D ester, etc., also mechanical methods (mowing, plowing, burning etc.)
7. Diluent or Carrier: Show diluent or carrier used plus stickers, spreaders, etc.
8. Rate Per Acre: Give lbs. acid equivalent per acre - not lbs. of herbicide or total mix. Check the label for % of acid equivalent.
9. Water Depth: Give depth in inches.
10. Cost, Material: Include herbicide and carrier.
11. Cost, Labor: Take from Application form.
12. Cost, Equipment: Take from Application form.
13. Total Cost: Take from Application form.
14. Cost per Acre: Take from Application form.
15. % Kill: Show percent dead plants with no regrowth showing at last observation.
16. Date Last Observation: Last date plants were checked following mechanical treatment or application of herbicide. If the same area is treated more than once during the same season, a new entry should be made on a separate line for each separate treatment. If the same area has been treated for several years, this should be shown in the space for remarks, giving the number of years the area has been treated.

E. Commercial Fishing.

September was the only month this period open to commercial fishing on Chautauqua Refuge. The commercial fish catch during September was about average for that month. A total of 16,668 pounds of fish were caught in Lake Chautauqua, and 3,370 pounds caught in Liverpool Lake by permittee commercial fishermen.

During the nine months commercial fishing occurred on the refuge, a total of 219,248 pounds of fish were removed. Lake Chautauqua produced 156,866 pounds, an increase of 19,385 pounds from the 1961 catch. Liverpool Lake produced 62,382 pounds of fish, a decrease of 8,765 pounds. This switch was apparently due to extremely low levels of the Illinois River, and its lowering of Liverpool Lake below practical fishing as they are connected. The main fishing effort went over to Lake Chautauqua after the river level dropped below the lake level.

A tabulation of the commercial fish catch in pounds for the Chautauqua Refuge is listed in the table. The first figure after each permittee's name is his catch by species from Lake Chautauqua. The second, or middle, figure is his catch from Liverpool Lake. The third, or bottom, figure represents his total catch in 1962 for each species of fish, all in pounds. Turtles are also represented in pounds and include both snap-ping turtles and softshell turtles. The extreme right-hand column represents all species of fish and turtles in pounds removed by each commercial fisherman.

Lake Chautauqua is a very fertile lake and the activities of the commercial fishermen tap a resource that would probably otherwise be lost to human use. We did note from the records that the spring-migration use by waterfowl of Liverpool Lake has dropped to practically nothing since commercial fishermen have been permitted in that area in March. We feel that if they were not permitted in the Liverpool Lake area prior to April 1st, that waterfowl use of that area would increase to a great degree.

Another problem we found this year was that the activities of commercial fishermen interfered a lot with banding of wood ducks since the best areas for trapping wood ducks seemed to be at the same time the favorite spots of the commercial fishermen. Still another thing was that commercial fishermen activities practically made brood counts impossible. The fishermen would be out on the lake in the gray of dawn and their noise and other activities would drive all broods into the brush before we could see them.

PERMITTEE	CARP	BUFFALO	DRUM	BULLHEAD	CATFISH	BOWFIN	CRAPPIE	TURTLE	TOTAL
John Callear	9185	5550	600	-	671	90	-	123	16219
	<u>3945</u>	<u>7710</u>	<u>832</u>	<u>260</u>	<u>307</u>	<u>50</u>	<u>485</u>	<u>-</u>	<u>13589</u>
	13130	13260	1432	260	978	140	485	123	29808
Charles A. High	4050	3095	80	-	139	-	-	-	7364
	<u>200</u>	<u>200</u>	<u>-</u>	<u>-</u>	<u>20</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>7420</u>
	4250	3295	80	0	159	0	0	0	7784
Edward Kelly	20746	16405	718	-	929	800	-	-	39598
	<u>10208</u>	<u>15899</u>	<u>125</u>	<u>157</u>	<u>1222</u>	<u>-</u>	<u>-</u>	<u>159</u>	<u>27770</u>
	30954	32304	843	157	2151	800	0	159	67368
Samuel Kelly	9376	16522	110	-	417	-	-	-	26425
	<u>5454</u>	<u>15483</u>	<u>-</u>	<u>34</u>	<u>140</u>	<u>-</u>	<u>63</u>	<u>-</u>	<u>21174</u>
	14830	32005	110	34	557	0	63	0	47599
Gene Lannery	300	50	-	-	-	-	-	-	350
	<u>590</u>	<u>655</u>	<u>70</u>	<u>295</u>	<u>380</u>	<u>-</u>	<u>116</u>	<u>-</u>	<u>2106</u>
	890	705	70	295	380	0	116	0	2456
Frank Pace	2592	4129	-	-	-	-	-	-	6721
	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
	2592	4129	0	0	0	0	0	0	6721
Dean Richardson	6432	14383	286	-	804	-	-	-	21905
	<u>2802</u>	<u>4491</u>	<u>-</u>	<u>-</u>	<u>22</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>7315</u>
	9334	18874	286	0	826	0	0	0	29220
Gene Shafer	1080	2516	-	-	29	-	-	-	3625
	<u>3865</u>	<u>2721</u>	<u>42</u>	<u>-</u>	<u>53</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>6681</u>
	4945	5237	42	0	82	0	0	0	10309
Oral Stockman	2647	10838	14	0	80	0	0	0	13579
	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
	2647	10838	14	0	80	0	0	0	13579
Oscar Warren	-	-	-	-	-	-	-	-	-
	<u>1550</u>	<u>445</u>	<u>375</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>100</u>	<u>-</u>	<u>2470</u>
	1550	445	375	0	0	0	100	0	2470
C.A. Watts	-	-	-	-	-	-	-	-	-
	<u>1008</u>	<u>786</u>	<u>27</u>	<u>-</u>	<u>116</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>1937</u>
	1008	786	27	0	116	0	0	0	1937
Lake Chautauqua	56408	73488	1808	-	3069	890	-	123	135786
Liverpool Lake	<u>29622</u>	<u>48390</u>	<u>1471</u>	<u>746</u>	<u>2260</u>	<u>50</u>	<u>764</u>	<u>159</u>	<u>83462</u>
GRAND TOTAL	86030	121878	3279	746	5329	940	764	282	219248

F. Other Uses.1. Boatyards.

The three boatyard operators completed their first year of a three year "Concession Agreement Contract" with the Government, which originated with our Regional Office, for operation of boatyards upon the Chautauqua Refuge. Everything went well and no modifications of the contract were deemed necessary to go into 1963. Only a few boats were rented by Boatyards Nos. 1 and 3 during this period, as most of Lake Chautauqua was closed to fishing. Fishing was permitted only within the established boatyard areas, which are a one-eighth mile radius circle into the lake from each boatyard. Boatyard No. 2 closed for the season about July 1st, as it has done the past few years due to low water levels. This boatyard is not heavily patronized and may very likely not be continued after termination of the present contract, ending December 31, 1964.

2. Cottages.

There are still 26 privately-owned cottages within the Chautauqua Refuge as of the end of this period. Cottages Nos. 19 and 26 were disposed of this period.

V. FIELD INVESTIGATIONS or APPLIED RESEARCH

A. Progress Report.1. Migration Study.

Mr. Frank Bellrose, Waterfowl Biologist, Illinois Natural History Survey, reports that he is way behind in analysis of data and is not yet able to furnish a summary of this study for inclusion with this Narrative Report.

We have not been able to corner him yet to furnish and install a new metal roof on the refuge fire tower. His crew accidentally destroyed the original roof when they were installing Mr. Bellrose's radar equipment, and put on a temporary wooden roof. He has promised to get this done and we also have a letter written by him prior to the start of his program that he would leave it in the same or better condition after he had completed his use of the fire tower. We will keep after this, with tact, until it is completed.

2. Raccoon-Wood Duck Study.

Mr. Bellrose has been supervising this study, with field work being done by biology students employed part-time by the Illinois Natural History Survey. Briefly, they are making a check over several years of the use of natural nesting cavities by wood ducks and raccoons. He is not yet able to furnish a summary report for inclusion with this report.

3. Waterfowl Banding.

The main banding effort on this refuge was for local wood ducks. Banding for wood ducks was terminated this year with the arrival of the first migrants about September 12th. The final total was 489 wood ducks, of which 94.9% were local immatures. The sex-ratio among locals remained the same as reported last period, 1.1:1.0 male to female.

VI. PUBLIC RELATIONS

A. Recreational Uses.

Sport fishing use of the refuge was light this period except within the borrow ditch at Boatyard No. 3. Starting October 1st, sport fishing was limited to the areas of the established boatyards only. After December 9th, through the end of this period, ice on Lake Chautauqua was usually thick enough for ice fishing. The catch was above average for this period in spite of the relatively light use. Approximately 98% of the catch was yellow bass, with a few black crappie, white crappie and bluegills, all taken with live bait, mostly minnows, but also some insect larva.

A table showing public use in visitor days for this period follows:

1. Fishing:

a. <u>Sport Fishing:</u>	8,380
b. <u>Commercial Fishing:</u>	400

2. Hunting: 3203. Miscellaneous: (cabin owners, guests, field trips, business, tourists, bird watchers, school groups and tower climbers) 1,1804. Total Visitor-Use Days: 10,280

Both hunter and fisherman use was down this period due to the short waterfowl season and low water level of Lake Chautauqua. Total use for 1962 was only 4% below 1961, however. Fishing was up 7%, but miscellaneous use dropped 50%, probably due to closure of the fire tower for radar use. Opening of a stretch of shoreline about 600 feet long would no doubt increase use of the picnic area many times. Hunter use was down 77%, due to lack of local hunter interest, probably due in turn to the short season, small bag limit and late peak migration.

B. Refuge Visitors.

<u>Name</u>	<u>Affiliation</u>	<u>Purpose</u>	<u>Date</u>
C. Swanson	RO, M&E	property	Sep. 3
J. Schad	Contractor	West Dike	8
N. Finch	"	"	8
J. Wright	RO, Engr.	inspection	12
J. McHarry	Landowner	visit	12
W. Hatfield	Contractor	refuge well	16
J. McHarry	Landowner	visit	17
G. Meadows	Contractor	D-7 repair	17
"	"	"	18
"	"	"	19
R. Johnston	RO, Engr.	inspection	Oct. 7
"	"	"	8
"	"	"	9
"	"	"	10
L. Peterson	RO, RBS	water	10
W. Zarbock	"	"	10
M. Cook	U.S.P.H.S.	"	10
D. Baldwin	RO, RBS	"	25

D. Baldwin	RO, RBS	water	Oct. 29
M. Bridgeman	Concessionaire	boatyard	Nov. 6
J. Wright	RO, Engr.	inspection	7
"	"	"	8
J. Schad	Contractor	West Dike	8
M. Stinnett	U.S.G.M.A.	enforcement	11
J. Hopkins	"	"	11
J. Schad	Contractor	West Dike	12
"	"	"	20
D. Baldwin	RO, RBS	water	28
C. Hermanson	RO, Engr.	inspection	Dec. 3
"	"	"	4
W. Hatfield	Contractor	refuge well	4
"	"	"	5
C. Hermanson	RO, Engr.	inspection	5
"	"	"	6
J. Schad	Contractor	West Dike	6
W. Hatfield	"	refuge well	22

C. Refuge Participation.

1. Tours.

Nov. 3: French around Lake Chautauqua with Boy Scouts and leaders from Peoria, Illinois.

10: French around Lake Chautauqua with Wildlife Ecology Class from University of Illinois.

10: French around Lake Chautauqua with Fisheries Class, University of Illinois.

Nov. 28: French around Lake Chautauqua with handicapped students and their teacher from Havana, Illinois.

2. Publications.

None this period.

3. Meetings.

Oct. 3-5: French at net-trap work-shop, Swan Lake Refuge.

4. Radio and TV.

None this period.

5. Talks.

Sep. 26: French at Optimist Club, Havana, Illinois.

28: French at Rockwell School, Havana, Illinois.

Oct. 12: French at Jaycee's, Havana, Illinois.

17: French at Optimist Club, Havana, Illinois.

17: French at Ducks Unlimited Meeting, Peoria, Illinois.

6. News Releases.

Sep. 25: End of fishing season on Lake Chautauqua.

Oct. 2: "Know Your Ducks" film offered for showing.

25: Local waterfowl hunting on open area of refuge.

Dec. 22: Opening of refuge to fishing on January 1, 1963, and information on water level management for 1963.

D. Hunting.

The four-week-long local waterfowl season during October and November was very quiet this year compared to 1961. The blinds along the east boundary occupied daily in the 1961 season by from 15 to 50 hunters, this year rarely contained more than four to six hunters. Total duck kill in the area of the refuge was estimated at 175 as against 700 in 1961 and 351 in 1960. The greatest number of hunters to use the refuge open

area was 27 on the first weekend. After that, the average was only three hunters per day. The refuge is open for the waterfowl season only, in the Liverpool Lake area, land and water comprising about 600 acres. Access is by boat only. If an access road were provided for the hunters, use would no doubt increase considerably. However, lack of hunter interest this year was mainly due to the short season, small bag limit and late peak migration.

E. Violations.

Violators apprehended and prosecuted this period were as follows:

<u>Name</u>	<u>Address</u>	<u>Violation</u>	<u>Disposition</u>
Eldon L. Maguire	Havana, Ill.	Trespass	\$15.00 & \$5.00
F. E. Grosier	Canton, Ill.	Trespass	\$25.00 & \$5.00
Edgar Bennett	Peoria, Ill.	Trespass	\$25.00 & \$5.00
Donald Bennett	Chillecothe, Ill.	Trespass	\$25.00 & \$5.00
Arthur McIntyre	Chillecothe, Ill.	Trespass	\$25.00 & \$5.00
George Puskarick	Canton, Ill.	Trespass	\$25.00 & \$5.00
William Adams	Canton, Ill.	Trespass	\$25.00 & \$5.00
Donald Bearden	Pekin, Ill.	Trespass	\$25.00 & \$5.00
C. W. Lounsberry	Pekin, Ill.	Trespass	\$25.00 & \$5.00
G. R. Alexander	Delevan, Ill.	Trespass	\$25.00 & \$5.00
Earl Carlton	Pekin, Ill.	Trespass	\$25.00 & \$5.00
Edward Alexander	Delevan, Ill.	Trespass	\$25.00 & \$5.00
Gerald Kammerer	Peoria, Ill.	Trespass	\$25.00 & \$5.00
Mike Bearden	Pekin, Ill.	Trespass	\$25.00 & \$5.00
Robert Alexander	Pekin, Ill.	Trespass	\$25.00 & \$5.00
Ben Rahl	Pekin, Ill.	Trespass	\$25.00 & \$5.00

<u>Name</u>	<u>Address</u>	<u>Violation</u>	<u>Disposition</u>
Jack Eyman	Canton, Ill.	Hunting	\$25.00 & \$5.00
Ron George	Canton, Ill.	Hunting	\$25.00 & \$5.00

All the above 18 violators were taken to the Justice Court in Havana, Illinois, all entered pleas of guilty and paid fines as indicated.

F. Safety.

Four scheduled safety meetings were held this period, generally the first hour of the first Tuesday each month. Items discussed were taken from the current safety bulletins and "near misses" on the job. Safety precautions were discussed prior to undertaking each new type of project where new tools, machinery or equipment would be used. No lost-time accidents occurred and this station has 3,714 lost-time accident-free days as of the end of this period. The average number of personnel are three with five during the June-September period.

VII. OTHER ITEMS

A. Trips.

- Sep. 17: Watts and Wohlwend to Crab Orchard Refuge to pick up loan dump truck.
- 20: French and Wohlwend to Granite City, Illinois, to screen surplus property.
- 25: Wohlwend to Argonne, Illinois, to inspect surplus arc welder.
- Oct. 1: French to Granite City, Illinois, to screen and pick up surplus property.
- 16: French and Wohlwend to Scott Field, Illinois, to pick up surplus dump truck.
- 18: Wohlwend to Peru, Indiana, Port Clinton, Ohio, and Detroit, Michigan, to inspect surplus property.
- Nov. 1: French to Granite City, Illinois, to inspect and pick up surplus property.
- 5: Wohlwend to Granite City, Illinois, to pick up surplus property.

- Nov. 23: Watts to Topeka, Kansas, to pick up surplus farm tractor.
- 26: French and Wohlwend to Rantoul, Illinois, to inspect surplus property.
- Dec. 3: French and Wohlwend to Granite City, Illinois, to inspect and pick up surplus property.
- 7: Wohlwend to Chicago, Illinois, and Milwaukee, Wisconsin, to inspect surplus property.

B. Items of Interest.

Mr. Charles W. Watts, Refuge Clerk, became the father of a baby girl on January 15, 1963. This is his second child, both girls.

Mr. Watts is credited with preparation of Section IA, IIG, and most of Section VI. The balance prepared and typed by the Refuge Manager.

C. Photographs.

Due to a breakdown of both the 35mm and 4 x 5 cameras belonging to the Refuge Manager in the middle of this period, all photos taken were found to be unsatisfactory. Both cameras are still in the hands of the manufacturers for repair. The photos attached were salvaged and additional photos for many items that should have been shown for this period will be included in the next Narrative Report.

SIGNATURE PAGE

Submitted by:

William L. French

(Signature)

William L. French
Refuge Manager

Date: January 18, 1963

Title

Approved, Regional Office:

Date:

1-22-63

(Signature)

Regional Refuge Supervisor

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

WATERFOWL

REFUGE Chautauqua

MONTHS OF September TO December, 19 62

(1) Species	(2) Weeks of reporting period									
	(1-day) 9/1 ₁	9/2-8 2	9/9-15 3	9/16-22 4	9/23-29 5	9/30-10/6 6	10/7-13 7	10/14-20 8	10/21-27 9	10/28-11/3 10
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada				40	4	175	55	3,195	60	200
Cackling										
Brant										
White-fronted										
Snow						5	100	2,400	1,750	2,500
Blue						5	100	2,400	1,750	2,500
Other										
Ducks:										
Mallard	30	150	120	330	150	110	960	4,875	4,500	4,700
Black	10	20	30	10	20	40	80	130	500	150
Gadwall								250	150	150
Baldpate		30	400	3,580	4,700	1,100	6,700	18,600	2,300	1,600
Pintail		600	700	740	3,510	220	1,200	1,210	1,100	250
Green-winged teal		20	100	1,400	1,850	1,700	1,775	2,810	200	150
Blue-winged teal	800	5,250	3,500	1,200	1,400	510	500	60		
Cinnamon teal										
Shoveler			30	60	40	40	40	30	20	30
Wood	850	850	1,000	1,000	875	175	250	200	200	150
Redhead										
Ring-necked								150	200	250
Canvasback								25	50	90
Scaup								200	900	300
Goldeneye										
Bufflehead										
Ruddy								350	250	115
Other Hooded Merg.										10
Coot			500	2,280	4,185	2,300	9,600	25,200	23,000	16,000

3 -1750a

Cont. NR-1

(Rev. March 1953)

WATERFOWL
(Continuation Sheet)REFUGE ChautauqueMONTHS OF September TO December, 19 62

(1) Species	(2) Weeks of reporting period (8-days)								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen: total
	11/4-10	11/11-17	11/18-24	11/25-12/1	12/2-8	12/9-15	12/16-22	12/23-31		
Swans:										
Whistling										
Trumpeter										
Geese:	300	110	200	260	300	350	400	250	41,543	
Canada										
Cackling										
Brant										
White-fronted	3,500	750	600	8,000	10,000	300	10		209,405	
Snow	3,500	750	500	8,000	10,000	300	10		208,705	
Blue										
Other										
Ducks:	35,000	65,000	85,000	128,850	85,000	500	140,000	150,000	5,086,745	
Mallard	850	1,800	1,900	2,150	2,000	50	2,000	1,500	94,120	
Black	120	100	40	500					9,170	
Gadwall	50								273,420	
Baldpate	50								67,060	
Pintail	200	150	500	1,700					701,885	
Green-winged teal									87,740	
Blue-winged teal										
Cinnamon teal	50	50	30	30					3,150	
Shoveler	150	150	150	100	50	10	10	10	38,170	
Wood	20								140	
Redhead	200	180	1,200						17,360	
Ring-necked	130	140	200	1,900					17,745	
Canvasback	150	300	8,000	30					69,360	
Scaup			25	25	100	175			2,275	
Goldeneye			130	10					980	
Bufflehead	100	50	50	15					6,510	
Ruddy									70	
Hooded Merg.										
Other	100	200	500	1,000					12,600	
Common Merganser										
Coot:	4,500	100	500	200					618,555	

(over)

	(5)	(6)	(7)	
	Total Days Use	Peak Number	Total Production	SUMMARY
Swans	-	-		Principal feeding areas <u>Flooded shoreline and mud flat areas</u>
Geese	459,653	20,300		<u>seeded to Japanese millet and volunteer millet, arrowweed and</u>
Ducks	5,888,300	151,510		<u>chufa, sage beds throughout lake and adjacent corn fields</u>
Coots	618,555	25,200		<u>within a 20-mile radius.</u>
TOTAL:	6,966,508			Principal nesting areas _____
				Reported by <u>William L. French</u>

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

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

W A T E R F O W L

REFUGE Chautauque - Cameron Unit

MONTHS OF September TO December, 19 62

(1) Species	(2) Weeks of reporting period									
	(1-day) 9/1 1	9/2-8 2	9/9-15 3	9/16-22 4	9/23-29 5	9/30-10/6 6	10/7-13 7	10/14-20 8	10/21-27 9	10/28-11/3 10
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada								175	60	100
Cackling										
Brant										
White-fronted										
Snow								5	10	10
Blue								5	10	10
Other										
Ducks:										
Mallard	15	30	75	50	50	25	20	200	250	200
Black	5	10				5	10	20	80	100
Gadwall										15
Baldpate									15	20
Pintail		50	100				40	30	10	
Green-winged teal			150	300	125	970	200	450	300	100
Blue-winged teal		800	50	15	10	290	200			
Cinnamon teal										
Shoveler					5					
Wood	10	15	15	50	30	10				
Redhead										
Ring-necked								70		
Canvasback										
Scaup										
Goldeneye										
Bufflehead										
Ruddy										
Hooded Merg.										
Other										
Coot								230	15	100

3 -1750a

Cont. NR-1

(Rev. March 1953)

WATERFOWL
(Continuation Sheet)REFUGE Chautauque - Cameron UnitMONTHS OF September TO December, 19 62

(1) Species	(2) Weeks of reporting period (8-days)								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen : total
	11/4-10	11/11-17	11/18-24	11/25-12/1	12/2-8	12/9-15	12/16-22	12/23-31		
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada	120	150	60						4,655	
Cackling										
Brant										
White-fronted										
Snow	15		15	20					525	
Blue	15		15	20					525	
Other										
Ducks:										
Mallard	8,000	2,800	5,000	29,250	85,000	30	85,000	90,000	2,231,875	
Black	400	300	150	650	3,800		1,300	1,000	55,780	
Gadwall									105	
Baldpate	30	40							735	
Pintail									1,610	
Green-winged teal	50	50	60						19,285	
Blue-winged teal									9,555	
Cinnamon teal										
Shoveler									35	
Wood									850	
Redhead										
Ring-necked									480	
Canvasback										
Scaup										
Goldeneye										
Bufflehead										
Ruddy			25							
Hooded Merg.									175	
Other										
Coot:	300	50	50						5,215	
				(over)						

	(5)	(6)	(7)	SUMMARY
	Total Days Use	Peak Number	Total Production	
Swans	-	-		Principal feeding areas <u>Lake shore and mud flat areas</u>
Geese	5,705	185		<u>seeded to Japanese millet and adjacent farm fields within</u>
				<u>a 20-mile radius.</u>
Ducks	2,320,495	91,000		Principal nesting areas _____
Coots	5,215	300		
TOTAL:	2,331,415			Reported by <u>William L. French</u>

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

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

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

MIGRATORY BIRDS
(other than waterfowl)

Refuge Chautauque

Months of September to December 1962

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. <u>Water and Marsh Birds:</u>										
Great Blue Heron	Permanent Res.		300	9/16						300
Common Egret	Summer Visitor		300	9/16	30	9/28				50
Green Heron	"	"	50	9/1	1	9/15				50
Black-crowned Night Heron	"	"	20	9/1	10	9/1				20
American Bittern	"	"	10	9/1	1	9/18				10
Pied-billed Grebe	"	"	100	10/13	6	12/2				100
Double-crested Cormorant	"	"	5	10/13	5	10/13				5
Least Bittern	"	"	1	9/16	1	9/16				1
Little Blue Heron	"	"	1	9/16	1	9/25				1
II. <u>Shorebirds, Gulls and Terns:</u>										
Ring-billed Gull	Permanent Res.		600	9/16						600
Avocet	Summer Visitor		20	10/17	20	10/17				20
Killdeer	"	"	200	9/16	2	12/2				200
Greater Yellowlegs	"	"	80	10/13	3	12/2				80
Lesser Yellowlegs	"	"	200	9/16	10	9/25				200
Solitary Sandpiper	"	"	15	9/16	1	9/20				15
Dowitcher	"	"	20	9/16	15	9/18				20
Knot	"	"	6	9/12	6	9/12				6
Spotted Sandpiper	"	"	50	9/15	2	9/28				50

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. <u>Doves and Pigeons:</u>					
Mourning dove	Permanent Res.	800	9/1		800
White-winged dove					
IV. <u>Predaceous Birds:</u>					
Golden eagle					
Duck hawk					
Horned owl	Permanent Res.	10	9/1		10
Magpie					
Raven					
Crow	"	800	9/13		800
Bald Eagle	"	17	12/21	(9 Ad & 8 Imm)	17
Barred Owl	"	40	9/1		40
Sparrow Hawk	"	5	9/1		5
Marsh Hawk	"	2	9/1		2
Sharp-shinned Hawk	"	2	9/1		2
Coprey Hawk	2	10/13	2	10/20	2
				Reported by	William L. French

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.

3-1751

Form NR-1A

(Nov. 1945)

MIGRATORY BIRDS

(other than waterfowl)

Refuge Chautauqua - Cameron UnitMonths of September to December 1962

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. <u>Water and Marsh Birds:</u>										
Great Blue Heron	Summer Resident		50	9/1	1	12/2				50
Common Egret	"	"	50	9/1	47	9/28				50
Pied-billed Grebe	"	"	30	10/13	3	11/16				30
II. <u>Shorebirds, Gulls and Terns:</u>										
Ring-billed Gull	Permanent Res.		250	9/16						250
Killdeer	Summer Resident		30	9/1	2	11/16				30

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. <u>Doves and Pigeons:</u> Mourning dove White-winged dove	Permanent Res.	100	9/1		100
IV. <u>Predaceous Birds:</u> Golden eagle Duck hawk Horned owl Magpie Raven Crow Barred Owl Red-tailed Hawk	Permanent Res. Summer Resident Permanent Res. " "	3 40 10 2	9/1 9/13 9/1 9/13	5 12/2	3 40 10 2
Reported by <u>William L. French</u>					

INSTRUCTIONS

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

(Proposed NR Form)

REFUGE WATERFOWL HUNTING BAG AND SPECIES CHECK

Refuge: Chautauqua

Period: September-December, 1962.

(1) Weeks of Hunting	(2) No. Hunters Checked	(3) Hunter Hours	(4) Waterfowl Species and Nos. of Each	(4a) Total Bagged	(5) Crippling Loss	(6) Total Kill	(7) Est. No. of Hunters	(8) Total Est. Kill
4	81	324	Mallard: 15 Baldpate: 3 Blue-winged Teal: 3	21	8	29	490	175

(Proposed NR Form)

REFUGE WATERFOWL HUNTING BAG AND SPECIES CHECK

Refuge: **Chautauque - Cameron Unit**

Period: **September-December, 1962**

(1) Weeks of Hunting	(2) No. Hunters Checked	(3) Hunter Hours	(4) Waterfowl Species and Nos. of Each Bagged	(5) Crippling Loss	(6) Total Kill	(7) Est. No. of Hunters	(8) Total Est. Kill
			No hunting on this unit.				

UPLAND GAME BIRDS

Refuge Chautauque

Months of September

to December

, 19 62

(1) Species	(2) Density	Acres per Bird	(3) Young Produced	(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat		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 Quail	Hardwood timber, edge, fallow and farm fields: 300 acres	1.7						180	Information from roadside counts, calls, tracks, droppings and information from local hunters adjacent to the refuge.
Ring-necked Pheasant	Open hardwood timber, edge, fallow and farm fields: 40 acres	6.7						6	Same as above.

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.

UPLAND GAME BIRDS

Refuge Chautauque - Cameron Unit Months of September to December, 19 62

(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 Quail	Hardwood timber, edge, fallow and farm fields: 245 acres	12.3							20	Information obtained from sightings, calls, tracks and droppings.

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 No. 3
(June 1945)

BIG GAME

Refuge Chautauque

Calendar Year 1962

(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	
White-tailed Deer	Upland and mixed bottom- land timber, outcrops, areas, brush, edge, fallow and farm fields: 300 acres	2										6	6	1:1

Remarks:

Reported by William L. French

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.

3-1753
Form No. 3
(June 1945)

BIG GAME

Refuge Chautauqua - Cameron Unit

Calendar Year 1962

(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	
White-tailed Deer	Upland and mixed bottom- land hardwoods, cutover areas, brush, pine plant- ings, edge, fallow and farm fields: 400 acres	2										12	12	1:1

Remarks:

An adjacent area of about 15-year old Red Pine planting, consisting of about 10 acres was probably used the most by these deer for daytime bedding down. We also saw evidence of bucks rubbing their antlers in these pines, droppings and beds.

Reported by William L. French

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 ChautauqueYear 19 62

Botulism

Lead Poisoning or other Disease

Period of outbreak None

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 None

Species affected _____

Number Affected Species	Actual Count	Estimated
_____	_____	_____
_____	_____	_____
_____	_____	_____

Number Recovered _____

Number lost _____

Source of infection _____

Water conditions _____

Food conditions _____

Remarks _____

DISEASE

Refuge Chautauque - Cameron UnitYear 1962

Botulism

Lead Poisoning or other Disease

Period of outbreak None

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 None

Species affected _____

Number Affected Species	Actual Count	Estimated
_____	_____	_____
_____	_____	_____
_____	_____	_____

Number Recovered _____

Number lost _____

Source of infection _____

Water conditions _____

Food conditions _____

Remarks _____

3-1757

Form NR-7

(April 1946)

PLANTINGS

(Marsh - Aquatic - Upland)

Refuge Chautauque Year 19462

Species	Location of Area Planted	Rate of Seeding or Planting	Amount Planted (Acres or Yards of Shoreline)	Amount & Nature of Propagules	Date of Planting	Survival	Cause of Loss	Remarks
Japanese millet	Cameron Unit, shoreline of Weis Lake	15% acre	5-acres	Excellent growth	8/1	95%	muskrat cutting	
Rye	Refuge Hq. area	55% acre	1-acre	Good growth	8/31	90%	failure to germinate, birds and mice utilization of the seed.	

TOTAL ACREAGE PLANTED:

Marsh and aquatic 5
Hedgerows, cover patches
Food strips, food patches 1
Forest plantings

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

Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge Charlevoix 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			
None									
								Fallow Ag. Land	20

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				20
Hay - Wild				2. Acreage Cultivated as Service Operation				20

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.

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

Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge Chautauque - Cameron Unit County Marshall 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	Acres	Bu./Tons			
None							5	Japanese millet	5
								Fallow Ag. Land	30

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				35
Hay - Wild				2. Acreage Cultivated as Service Operation				35

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 ChautauqueMonths of January through December, 1962

(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
Japanese millet	23bu		23bu		1 bu		1 bu	27bu	27bu		
Rye	84bu		84bu		1 bu		1 bu	83bu	83bu		
Mixed grains (corn, soy, wheat & oats)	90bu	340bu	430bu	60bu*		235bu	295bu	135bu		135bu	

(8) Indicate shipping or collection points Peoria, Illinois. Mixed grains obtained as surplus from USDA.(9) Grain is stored at Refuge Headquarters storage bins.(10) Remarks *Illinois Natural History Survey.

*See instructions on back.

REFUGEE 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 Chautauque

Year 1942

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

Refuge Chautauque Year 1962

None

Total income.....

Method of slash disposal.....

Ties.....

PUBLIC USE

Refuge ChautauqueCalendar Year 1962

Total Use Visitor-Days	Hunting Use	Fishing Use	Miscellaneous Use
<u>15,012</u>	<u>320**</u>	<u>11,632</u>	<u>4,110</u>

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> </u>	<u>600</u>	Recreation*	<u>78.7</u>	<u>3,224</u>
Upland Game	<u> </u>	<u> </u>	<u> </u>	Official	<u>1.3</u>	<u>50</u>
Big Game	<u> </u>	<u> </u>	<u> </u>	Economic Use	<u>0.5</u>	<u>26</u>
Supervised by Refuge	<u> </u>	By State	<u> </u>	No. of Blinds	<u>19.0</u>	<u>780#</u>

Hunting (off
refuge Lands: Estimated man-days of hunting on lands

Adjacent to the refuge 660** (These figures
should not be included in hunting-use totals above).

Fishing:

Acres of ponds or lakes 3,600 and miles of streams

nine open to fishing.

Comments:

****Decrease due to short season and late peak
migration flights.**

**# Includes sightseeing in Headquarters area,
tower climbing and information requests.**

* including picnicking, swimming, boating, camping,
viewing wildlife, and photographing.

PUBLIC USE

Refuge Chautauqua - Cameron UnitCalendar Year 1962Total Use
Visitor-Days
NoneHunting
UseFishing
UseMiscellaneous
Use

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):	<u>Percent</u>	<u>Visitor-Days</u>	<u>Acres</u>	<u>Miscellaneous</u>	<u>Percent</u>	<u>Visitor-Days</u>
Waterfowl	_____	_____	_____	<u>Recreation*</u>	_____	_____
Upland Game	_____	_____	_____	<u>Official</u>	_____	_____
Big Game	_____	_____	_____	<u>Economic Use</u>	_____	_____
Supervised by Refuge	_____	By State	_____	No. of Blinds	_____	Other
					_____	_____

Hunting (off
refuge Lands: Estimated man-days of hunting on lands

Comments:

Adjacent to the refuge 150 (These figures

should not be included in hunting-use totals above).

Fishing:

Acres of ponds or lakes _____ and miles of streams

_____ open to fishing.

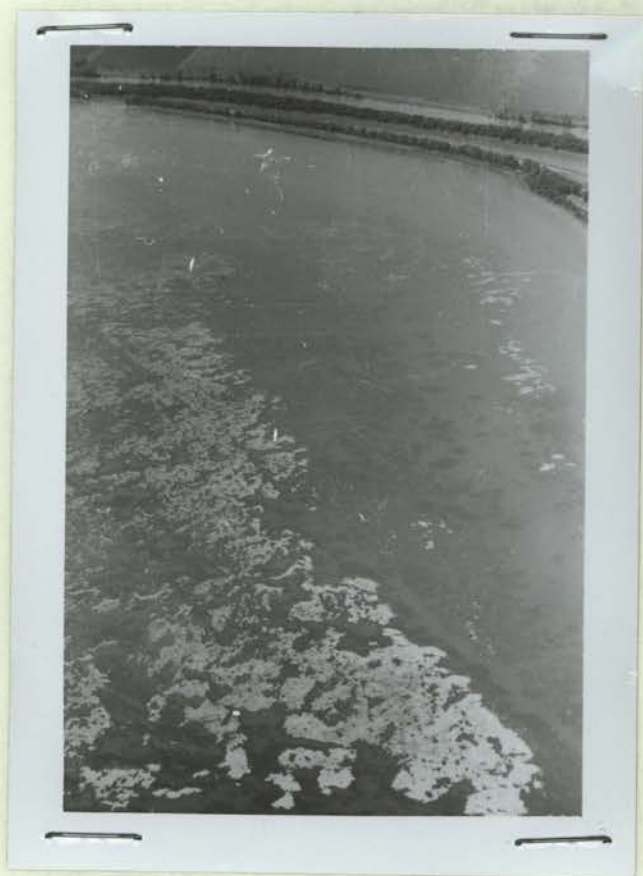
* including picnicking, swimming, boating, camping,
viewing wildlife, and photographing.



9/28/62

(French) R-4-18

Looking southwest across the central portion of Lake Chautauqua at the residual beds of Sago pondweed.



9/28/62 (French) R-4-21
Looking south down Lake Chautauqua at the residual
beds of Sago pondweed.