

C.O.(RF)  
UNITED STATES  
DEPARTMENT OF THE INTERIOR  
FISH AND WILDLIFE SERVICE  
BUREAU OF SPORT FISHERIES AND WILDLIFE  
Montezuma National Wildlife Refuge  
R. D. #1, Box 232  
Seneca Falls, New York 13148

Narrative Report  
1971

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NARRATIVE REPORT

MONTEZUMA NATIONAL WILDLIFE REFUGE

Personnel

Martin S. Phillips . . . . . Refuge Manager  
Douglas M. Mullen . . . . . Refuge Manager (Assistant)  
Ottley P. Tschache . . . . . Refuge Manager (Assistant)  
(Converted from Biological Technician 05/14/71)  
Linda D. Kipp . . . . . Refuge Manager (Trainee)  
(EOD 07/25/71 from Boston Regional Office)  
Vernon A. Dewey . . . . . Biological Technician  
Judith A. Didona . . . . . Clerk/Stenographer  
J. Kenneth Magargel . . . . . Maintenance Worker

Temporary

John B. Salerno . . . . . Maintenance Worker  
(06/13 - 10/27/71)  
James A. Mosher . . . . . Biological Technician  
(06/13 - 09/30/71)  
Timothy Scharett . . . . . NYC  
(12/05 - 31/71)

DEPARTMENT OF THE INTERIOR, FISH AND WILDLIFE SERVICE  
Bureau of Sport Fisheries and Wildlife  
Montezuma National Wildlife Refuge  
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NARRATIVE REPORT  
MONTEZUMA NATIONAL WILDLIFE REFUGE  
Calendar Year 1971

I. GENERAL

A. Weather Conditions

Temperature and precipitation readings were obtained from recording instruments operated at the refuge headquarters area. Weather data collection covers 42 consecutive years.

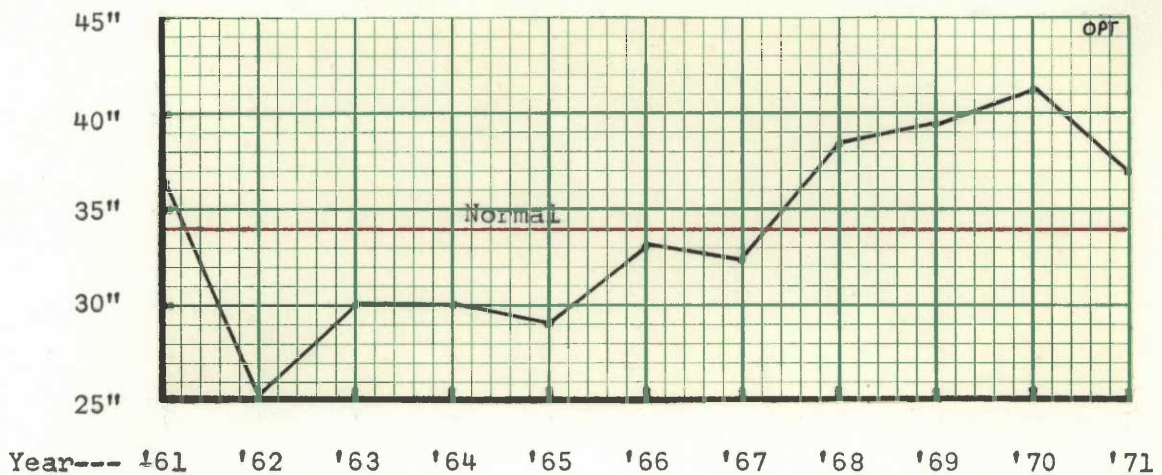
Month	Snowfall		Precipitation		Temperature	
	1971	Normal	1971	Normal	Maximum	Minimum
January	15	17	1.36	1.81	44	- 4
February	30	15	3.60	2.15	51	2
March	28	10	2.86	2.71	53	14
April	1	1	1.69	2.85	75	20
May			2.20	3.26	90	34
June			3.39	3.19	91	39
July			5.18	3.30	91	49
August			4.31	3.13	90	44
September			3.07	2.78	87	43
October		T	1.91	3.06	80	36
November	10	3	4.01	3.02	74	14
December	8	17	3.45	2.54	54	14
TOTAL	92	63	37.03	33.80	91	- 4

The winter of 1970-71 will long be remembered throughout this section of New York State as "the year of the snow". The snow began falling on December 2 and continued nearly unabated until mid-March. Snowfall for the period totaled 120 inches, 63 inches above normal.

Total precipitation decreased from last year's total of 41.30 inches but still remained well above the average.



### 11 Years of Total Precipitation



#### B. Habitat Conditions

##### 1. Water

Precipitation is the main source of water for the three major impoundments. Black Brook contributes significant water to the Storage Pool, especially during the summer months. Above-average rainfall provided a year-round surplus of water for all but the Main Pool this year.

STORAGE POOL: Black Brook and White Brook overflowed their banks in March and April. On March 18 flood waters from the New York State Barge Canal topped the Storage Pool dike causing minor damage. Spring and summer drawdown reduced the availability of surplus Storage Pool water for the Main and May's Point Pools.

MAY'S POINT POOL: This pool was drained from February 1 through February 22 for trash fish control. Spring flood waters topped the May's Point Pool dike on March 18, re-introducing large numbers of carp and forcing redrainage of the pool from April 1 through May 1. As an alternate source of water during the drainage of the Storage Pool, excess water was diverted from the North Spring Pool into the May's Point Pool by sandbagging the Storage Pool outlet.

MAIN POOL: During late February and early March the pool was drained for trash fish control without chemical control measures. Flooding of the New York State Barge Canal in March caused a reverse flow of water into the pool through the Seneca Spillway. Surplus water was shunted into the canal during April and May. Water levels were lowered from

June through August to stimulate the growth of emergent vegetation and allow work on muck fields #20 and #21. Light precipitation during September and October delayed attainment of planned water levels until early December.

SOUTH SPRING POOL: Precipitation and constant flow from the big spring provided a year-round surplus of water. From February 15 through April 15 the pool was drained for trash fish control without chemical control measures.

NORTH SPRING POOL: Precipitation, runoff from Esker Brook, and excess water from the South Spring Pool provided a year-round surplus of water. The pool was drained from March 1 through April 30 and again in September for trash fish control without chemical control measures.

EAST POOL--UNIT 17: The water for this unit is supplied from the Barge Canal, via a diesel pump. Pumping started March 10 and stopped March 16 when the pool level reached 384.60. Maintenance pumping was required from June 3 through June 5 and again from June 24 through June 27. The pool was gradually lowered to 382.90 beginning July 1 and drained for trash fish control on December 15.

WEST POOL--UNIT 17: The water for this unit is supplied from the Barge Canal, via a diesel pump. This was the first spring flooding of the unit after four years of a fall flooding regimen. The pool remained drawn down in 1970 to allow a rest period before this changeover to spring flooding. Pumping started on March 10 and stopped March 16 when the pool level reached 384.80. Maintenance pumping was required on May 4 and May 5 and again from June 24 through June 27. The pool was gradually lowered to 382.90 beginning July 1 and drained for trash fish control on December 15.

## 2. Food and Cover

WINTER: Natural food supplies were adequate to meet the requirements for most of the wildlife species present. Some loss was noted on white-tailed deer bedded down in winter cover. Due to the heavy snow cover, long winter, and lack of food these losses were attributed to starvation. Cattail and wooded areas provided cover for deer, rabbits, and game birds.

SPRING: This year's peak population of 60,000 Canada geese rapidly cleaned out our 28 acres of winter wheat and fed extensively in the remaining stands of cattail in the Main Pool. Heavy feeding by geese plus cattail dieoff has



eliminated emergent vegetation from over half of this pool. With no vegetation there is little waterfowl nesting and brood use in these areas.

SUMMER: Heavy carp populations in the Main Pool and North Spring Pool destroyed most beds of submerged vegetation and cut down water clarity. A partial drawdown of the Main Pool resulted in thick stands of spikerush, millet, smartweed, and beggerticks around the perimeter of the pool. During August shorebirds made heavy use of the exposed mudflats.

Summer drawdown of the Storage Pool caused a spectacular growth of cattail, bullrush, smartweed, and beggertick seedlings over nearly 1,000 acres of the pool. By August these valuable emergents covered 100 percent of the pool, with smartweed growth reaching nearly 6 feet in height. New cattail growth spread uniformly over all of the pool and is expected to provide adequate cover for waterfowl broods next season.

FALL: A record of 18,000 Canada geese completely consumed the 58 acres of winter wheat browse of the refuge. This feeding, coupled with daily feeding flights out of the refuge for harvested corn, filled all of their food requirements.

Reflooding of the Main Pool and Storage Pool in October provided abundant food and cover for fall migrants. Up to 40,000 ducks made morning and evening flights into the Storage Pool to feed. An estimated 1,000 sora rails also used the Storage Pool for food and cover during the fall months.

Through the growing season, checks were made of the drawdown areas for Purple Loosestrife encroachment. A moderate encroachment of Loosestrife seedlings was discovered over much of the Storage Pool, but all of these seedlings should be killed by flooding in 1972.

## II. WILDLIFE

### A. Migratory Birds

#### 1. Waterfowl

GEESE: The spring goose population peaked at 60,000 on April 10. Although this was 15,000 below the 1970 peak, large numbers of birds remained at the refuge until May 7, two weeks longer than last year. The increased stay was believed due to persistent ice conditions to the north. Spring goose use days totaled 2,510,000 compared with 1,634,500 in 1970. Canada goose production was 100 goslings, compared with 130 in 1970. This continued the downward trend from our maximum production of 152 in 1964. The decrease in production is believed due to the heavy harvest of our nesting flock by paid hunting areas adjacent to the refuge. The fall Canada goose population peaked at a record 18,000 geese, 8,000 above 1970. Our systems objective calls for 750,000 fall goose use days and a peak of 15,000 geese. Fall goose use days for 1971 totaled 1,098,361. This tremendous increase from last year's fall total of 273,590 was the result of mild late fall and early winter weather which caused birds to remain in the Cayuga Basin until late December. The spring use days for snow and blue geese increased from 18,010 in 1970 to 46,190 in 1971.

<u>3,781,044</u>	÷	<u>2,015</u>	=	<u>1,876</u>
Goose Use Days		Acres of Goose		Goose Use
Current Year		Use Habitat		Days Per Acre
				of Waterfowl
				Habitat
<u>100</u>	÷	<u>1,972</u>	=	<u>.05</u>
Total Production		Total Acres		Goose Production
(Goose)		of Wetland		Per Wetland Acre

DUCKS: The spring duck population peaked at 5,560 during the April 15 census period. A peak of 14,375 birds was recorded during the April 15 census period in 1970. Lack of suitable food and cover in the Storage Pool and May's Point Pool probably caused the decreased duck use. Brood production was estimated at 3,500 birds raised to flight stage. This increase from last year's production of 2,170 is believed due to an expanded predator control program in the duck nesting areas. Our systems objective is to produce 5,000 ducks to flight stage. By improving food and cover within the pools, and providing better quality nesting cover on upland areas, we should be able to reach this goal.

16-YEAR COMPARISON - PEAK NUMBERS, FALL USE DAYS, PRODUCTION

Year	Ducks		Geese	
	Peak	Use Days	Peak	Use Days
1956	25,630	1,863,204	500	21,665
	Production	1,239	Production	4
1957	10,675	815,399	256	5,677
	Production	1,215	Production	0
1958	21,100	926,986	400	19,530
	Production	482	Production	4
1959	26,450	1,201,837	1,290	56,674
	Production	1,640	Production	7
1960	10,380	516,790	500	23,668
	Production	1,767	Production	6
1961	10,960	577,955	560	38,760
	Production	1,972	Production	50
1962	34,280	1,587,741	1,501	83,087
	Production	2,465	Production	90
1963	16,950	882,385	3,585	120,661
	Production	2,860	Production	95
1964	28,015	1,870,470	7,025	252,335
	Production	3,193	Production	152
1965	45,135	2,483,926	5,000	363,856
	Production	3,806	Production	88
1966	31,870	1,613,675	3,500	170,674
	Production	2,235	Production	140
1967	80,505	2,304,424	6,560	307,750
	Production	2,737	Production	125
1968	31,500	1,488,942	3,310	102,466
	Production	2,663	Production	107
1969	15,600	957,110	10,000	372,540
	Production	2,460	Production	122
1970	33,201	1,782,299	10,000	273,590
	Production	2,170	Production	130
1971	40,345	2,744,735	18,000	1,098,361
	Production	3,500	Production	100



The fall duck population peaked at 40,345 as compared with 33,200 in 1970. Excellent waterfowl food production in the Storage Pool plus mild fall weather caused many ducks to remain on the refuge through December, increasing the use days to more than 1,000,000 over the 1970 total.

<u>3,537,166</u>	÷	<u>2,215</u>	=	<u>1,596</u>
Duck Use Days Current Year (Not Inc. Coot)		Acres of Duck Use Habitat		Duck Use Days Per Acre of Waterfowl Habitat
<u>3,500</u>	÷	<u>1,972</u>	=	<u>1.77</u>
Total Production		Total Acres of Wetland		Duck Production Per Wetland Acre

## 2. Other Water Birds

Common gallinule production made an unexplained drop from the recorded 400 young produced in 1970 to only 50 young produced this year. The expected return to up to 100 nesting pairs did not materialize. Only 50 adult birds were observed during the nesting season. Nearly 90 percent of our nesting flock was lost between the fall and spring migrations. Efforts will be made during the 1972 nesting season to band as many young gallinules as possible to determine the cause (s) of their failure to return.

Pied-billed grebe production matched the 1970 total with 250 young birds raised to flight stage. Reestablishment of cattail and bulrush cover over 1,000 acres of the Storage Pool will double available nesting sites for grebes and gallinules in 1972.

Lack of cattail and drainage of the Storage Pool forced relocation of the black-crowned night heron rookery to the south end of the Main Pool. Fifty young birds were fledged from an estimated 25 nests. Regrowth of cattail in the Storage Pool should provide a suitable rookery area when the Main Pool is drained in 1972.

## 3. Shorebirds, Gulls, and Terns

Thanks to the persistent endeavor of Walter Benning, a local birder, a detailed record of shorebirds was prepared for the refuge again this year. Thirty different species were

observed. Rare or unusual visitors were the golden plover, whimbrel, western sandpiper, Hudsonian godwit, Wilson's and northern phalarope.

Although nesting was delayed for more than two weeks by snow and cold weather, killdeer nesting success was excellent this year. Eight nests were found on 1 mile of the Storage Pool gravel road and all successfully hatched. Nearly all of the birds produced second nests and some nested for a third time.

#### 4. Doves

The mourning dove population remained at a low ebb, primarily due to a lack of suitable feeding and nesting area on the refuge. Only 25 doves were produced in 1971 compared to more than 300 produced per year in the early 1960's. We expect that the dove population will increase as our ever-green plantings become available for nesting sites and grain crops on and around the refuge increase.

### B. Upland Game Birds

The ring-necked pheasant population increased from 150 in 1970 to 200 during the summer of 1971. Production was excellent with ten broods observed and an estimated 125 young produced. Habitat for this bird continues to improve as grasslands are improved and farming is increased. Pheasant hunting is not permitted on the refuge because of disturbance to resting and feeding waterfowl. Most pheasants on the refuge utilize the interior of the cattail marsh when not nesting.

The ruffed grouse population continues to grow as the habitat improves. Total population increased from ten recorded in 1969 to an estimated 40 this year.

### C. Big Game Animals

White-tailed deer move freely on and off the refuge throughout the year. However, the 1970-71 heavy winter snows severely restricted this movement, forcing most of the deer in the surrounding area to migrate into our swamp timber areas for protection. The wintering herd increased from the 100 counted on December 31 to over 300 recorded by the middle of January.

Considerable damage was done to private corn and red clover crops along the western boundary of the refuge. During February and March counts of over 100 deer in these fields were not uncommon (see photo section). Reports and sightings of dogs chasing and killing deer were common and several dogs were shot by State Conservation Officers and the refuge staff. Spring checks were made to record starvation loss but only two were found. By May 1 all but our resident herd of 100 deer had left the refuge. Normally, road kills (25 in 1971) plus hunting (30 taken in 1971) keep our deer population stable and in balance with available food.

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

1. Fur Animals

A total of 739 muskrats were removed from the dikes and pools by December 31. The muskrat population appears to be below the 1970 level probably due to the summer drawdown of the Storage Pool and the lack of emergent vegetation in the Main Pool. The harvest of muskrats should equal the 2,284 taken during the 1970-71 season.

Two trapping permits were issued for the 1971-72 season to three professional trappers (the third year of a maximum three-year permit). No recreational trappers applied for permits for the fourth year in a row.

2. Predators

The toxic egg program was conducted by refuge personnel from April 28 to July 2. Stations were set on all pools, including Unit 17 this year. An estimated 518 egg-eating predators were removed. Two hundred eight of these animals were actually recovered (31 adult opossum carrying 153 young, 13 raccoon, 8 skunk, 2 cowbirds, and 1 fox).

Two changes were made on Unit 17 in an attempt to decrease predator pressure on surface nesting ducks. First, the area flooded was increased from 300 acres to 600 acres by flooding both pools, assuming that the first year the total number of predators would not increase; secondly, pool water levels were raised 0.2 of 1 foot to make it more difficult for raccoons to forage. These measures along with the toxic

egg program resulted in a 55 percent nesting success on Unit 17 compared with 18 percent success in 1970 when none of the above measures were practiced.

Overall, refuge duck production increased from 2,200 with light predator control in 1970 to 3,500 with moderate predator control in 1971. Waterfowl nesting conditions were comparable in 1970 and 1971, and we believe most of the increase in production in 1971 was attributable to better predator control.

### 3. Rodents

The annual battle to control the woodchuck population and reduce damage to dikes continued this year with some success. Over 85 woodchucks were removed from dike slopes and adjacent fields with the use of the refuge's .222 caliber Remington rifle with a 4X weaver scope. This was accomplished during March and April on most dike slopes, and little burrowing damage was noted for the remainder of the year. The heavy snow cover provided easy mouse access to wild apple trees and rose bushes, and many were girdled by spring.

### 4. Other Mammals

The cottontail rabbit population continued to be low. Little rabbit damage to shrubs was noted.

## E. Hawks, Eagles, Owls

Two immature bald eagles spent the spring and summer months resting and feeding in the Storage Pool. One appeared to be a second-year bird while the other was believed to be in its fourth year. By mid-summer the four-year old bird had gained its characteristic adult plumage. This was the third summer in a row that immature bald eagles have used the refuge. We believe we have located an active eagle nest a few miles east of the refuge.

"Montezuma", the golden eagle found near the refuge on November 12, 1970 and later transported and released on the Shining Rock Wilderness Area in the Pisgah National Forest of Western North Carolina, showed up at the Brigantine National

Wildlife Refuge, Oceanville, New Jersey on November 30, 1971. The eagle had invaded a hen house near the refuge and was captured and brought to Brigantine. "Montezuma" was released at the Brigantine Refuge but refused to leave the area. It was recaptured one month later near the refuge headquarters in a starved condition. The bird, unable to feed for itself in the wild, was taken to Patuxent Wildlife Research Center, Laurel, Maryland where it will be kept for display.

A nestling great horned owl was turned over to the refuge in early July and was released at subheadquarters. The owl remained around subheadquarters until early January (1972), returning to the yard three times a week for road kills and muskrat carcasses provided by the refuge staff. The owl was not seen after the middle of January, and we believe it may have found a mate.

Thirteen short-eared owls spent late April and early May roosting in the evergreen windbreak behind subheadquarters.

Red-tailed hawks continue to increase on the refuge, with a peak of 50 during the fall migration and 62 counted on and around the refuge during the January 1 Christmas Bird Count. The refuge contributed seven successful nests raising 14 young this year.

#### F. Other Birds

The annual Audubon Christmas Bird Count for 1971 was held January 1, 1972. Thirteen persons in seven parties tallied 61 species (55 species last year) and approximately 9,700 individuals (4,600 last year).

#### G. Fish

Control of carp and bullhead populations was not completely successful by winter drawdown of the pools. High water levels in the Barge Canal prevented a complete drainage of the Main Pool, leaving thousands of carp in the deeper ponds and ditches. Flood waters in March forced re-drainage of the May's Point Pool in April.

Heavy spring runoff into the Storage Pool equalized the water levels between this and the North Spring Pool Spillway allowing thousands of adult carp to move into the North Spring Pool.



As it is impossible to drain this pool dry, most of the fish remained in the pool all summer, clouding the water and destroying most submerged beds of aquatic vegetation.

A complete drainage of all refuge pools in February and March, 1972 plus a normal spring runoff should allow us to control trash fish. No chemical control will be undertaken.

#### H. Reptiles

One dozen female snapping turtles were picked up on the dike during egg-laying and turned over to the Upstate Medical Center, Syracuse, New York for embryo studies.

#### I. Disease

None this year.

#### J. Display Pool Animals

One pair of wild Canada geese nested in the Display Pool this year raising six young. The pair arrived early in March and immediately took possession of the entire pool, driving out or killing several of our pinioned birds. All of the remaining pinioned geese were immediately removed from the pen. After the adult birds moulted, they were captured and checked for bands. Both birds were banded and both had been raised four years earlier in the Display Pool by our pinioned flock.

On March 11, 1971 three dogs attacked our blind doe and her 2-year old fawn in the Display Pool. The fawn was able to escape with only minor injuries. The blind doe, because of her handicap, was trapped in the slush of the spillway where her hindquarters were badly chewed. Refuge personnel came to her rescue and two of the dogs were shot. Unfortunately, the doe developed gangrene and died three days later. An autopsy revealed she was carrying triplets.

Early in June a fawn was brought to the refuge by the New York State Police. The mother had been killed by a car earlier in the day. The fawn was raised by the Refuge Manager's wife; and when old enough, the fawn was released in the Display Pool.

We estimated that one-third of the refuge visitors came to the refuge only to see the geese, ducks, and deer in the Display Pool area. This amounted to over 40,000 people this year.

### III. REFUGE DEVELOPMENT AND MAINTENANCE

#### A. Physical Development

##### 1. Habitat Management

###### a. Crops

- 1A. Cleared Field No. 7 of brush and trees.
- 2B. Planted 8 acres of oats in Field No. 7.
- 3C. Planted 53 acres of winter wheat in Fields No. 6, 8, and 12.
- 4D. Planted 25 acres of buckwheat in Fields No. 20 and 21.

###### b. Grasslands

- 1A. Mowed 7 miles of refuge dikes for weed control.

###### c. Marsh and Water

- 1A. Erected 33 wood duck boxes in the Main, May's Point, and Storage Pools.
- 2B. Erected 25 bluebird houses.
- 3C. Stained White Brook Spillway catwalk.
- 4D. Cleared 3 acres of brush and trees from Main Pool marsh and dike slopes.
- 5E. Constructed and installed new stoplogs in Display Pool Spillway.
- 6F. Cleared and plugged drainage ditch below Field No. 7 of trees and brush to provide goose broods easy access to green browse.

##### 2. Wildlife Populations Management

###### a. Banding

- 1A. Reconditioned refuge "Aircat" airboat. Replaced bottom of hull, replaced electrical wiring, replaced 125 h.p. engine with new 150 h.p. engine.

b. Management Investigations

- 1A. Captured 62 gadwalls for release on Iroquois National Wildlife Refuge as part of their transplant study.

3. Public Use Management

a. Interpretation

- 1A. Mounted 41 waterfowl specimens for the conservation education room display cases.
- 2B. Continued conversion of office three-stall garage into conservation education room: Installed four heating units, wired safety lights, installed paneling, installed Torginol floor, and constructed two closets. The room was completed April 16.
- 3C. Replaced Display Pool fence.

b. Visitor Protection

- 1A. Posted 22 miles of exterior boundary.

c. Visitor Services

- 1A. Sanded and stained eight picnic tables.
- 2B. Erected new information signs at headquarters and the Storage, May's Point, North Spring, and South Spring Pools.
- 3C. Constructed and installed 22 waterfowl hunting blinds.
- 4D. Graded Main Pool dike.

d. Miscellaneous Projects

- 1A. Installed new snowplow on 4-wheel drive pickup truck.
- 2B. Insulated attic, plus floor and heating ducts in the east addition of Quarters #4.
- 3C. Installed electric heat in office.

- 4D. Replaced hot water heaters in office and Quarters #4.
- 5E. Converted office water system from galvanized to copper pipe.
- 6F. Installed sink and drinking water in shop.
- 7G. Painted exterior of office, Information Booth, shop, pump house, fur house, grainery, oil house, Quarters #4, and Quarters #4 garage.
- 8H. Constructed new restroom facility in shop.
- 9I. Installed new ceiling and painted the interior of the waterfowl check station.
- 10J. Installed three new jalousie windows in attic of office and fur house.
- 11K. Relocated and installed office furnace at fur house, and relocated and installed fur house furnace at waterfowl check station.
- 12L. Installed new underground fuel oil tanks at the shop, fur house, and waterfowl check station.
- 13M. Converted office cellar into storage room and photo lab.
- 14N. Installed bathroom sink in Quarters #4.

B. Plantings

Cooperative farmer Anthony Salerno directed his entire farming effort to growing corn on his own land this year, so no cooperative planting was done. Refuge personnel planted 53 acres of winter wheat in Fields No. 6, 8, and 12; 8 acres of oats in Field No. 7; and 25 acres of buckwheat in Fields No. 20 and 21.

Auburn Community College students and YCC members planted 6,000 trees and 600 wildlife shrubs on the refuge.

C. Collection and Receipts

Nothing to report this year.

D. Control of Vegetation

YCC students cleared 3 acres of brush and trees from the Main Pool marsh edges and dike slopes.

E. Planned Burning

Nothing to report this year.

F. Fires




No fires in 1971.

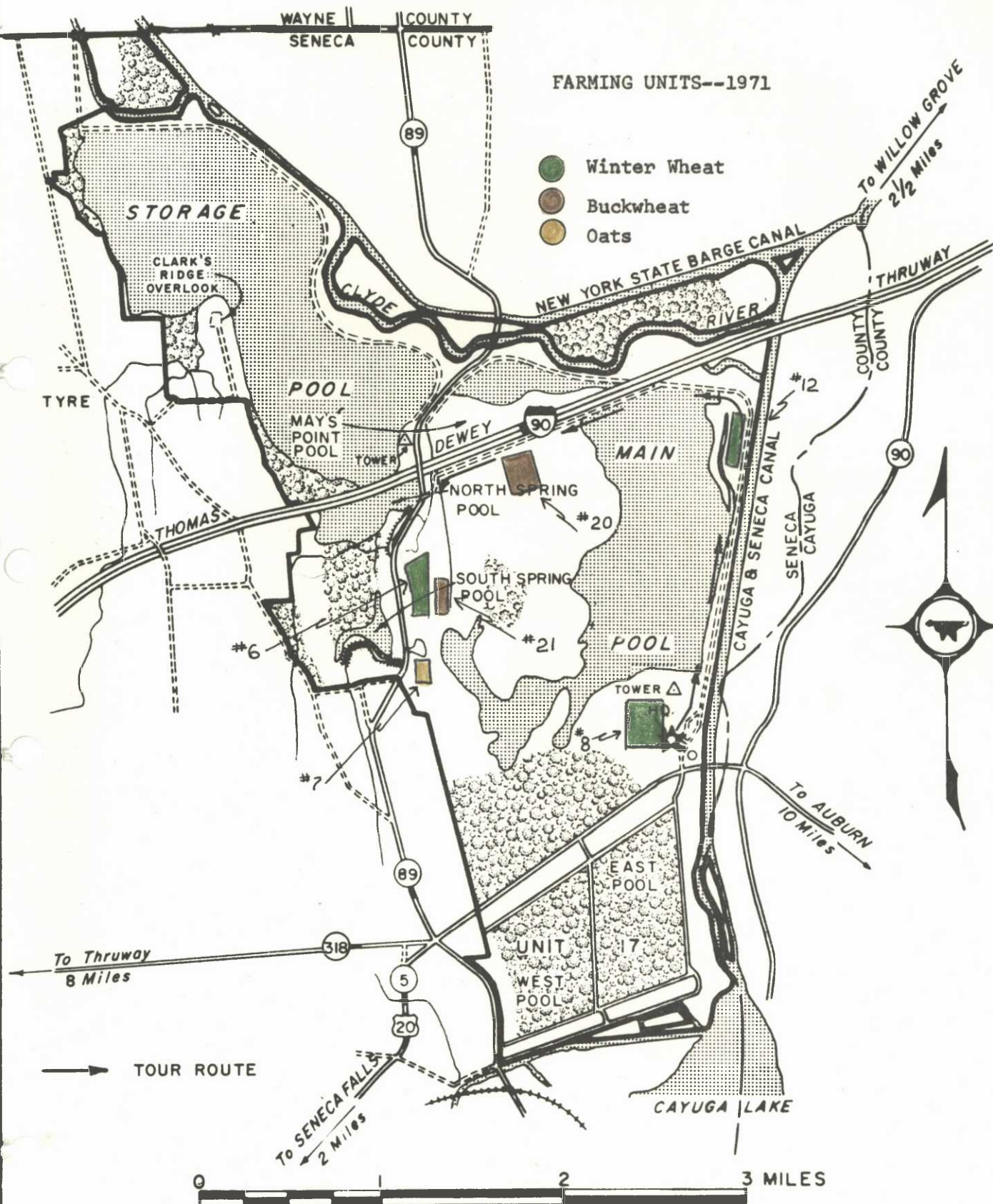


# MONTEZUMA NATIONAL WILDLIFE REFUGE

SENECA COUNTY, NEW YORK

FARMING UNITS--1971

-  Winter Wheat
-  Buckwheat
-  Oats



#### IV. RESOURCE MANAGEMENT

##### A. Grazing

Two grazing permits were issued during the year--one to Edward Lawson (#71-1) and one to Chester Bennett (#71-4) for grazing a maximum of 15 and 25 head of cattle respectively. The price per AUM remained at \$2. Total revenue for grazing was \$630 (\$400 from #71-1 and \$230 from #71-4).

##### B. Haying

There is no demand for hay in the area.

##### C. Fur Harvest

Two permits were issued during the 1970-71 trapping season. This was the last year of a three-year permit issued to the Helmer brothers, Foster and Harold, and Foster's son Robert.

The trapping season started December 1, 1970 and terminated March 22, 1971. A total of 2,284 muskrats were removed from the Main, May's Point, and Storage Pools. The refuge share of 564 pelts (25 percent of the harvest) minus 7 (kept for the refuge for taxidermy purposes) was sold by bid for \$860.75 (averaging \$1.52 per pelt). The sale of 4,066 pounds of muskrat carcasses to a local fur rancher at \$.02 per pound netted \$81.32 in revenue.

##### D. Timber Removal

None.

##### E. Commercial Fishing

None.

##### F. Other Uses

Flag cutting: Special use permits were issued to Ward Russell and Chester Helmer to cut cattail to be used in furniture and barrel construction. Ward Russell took 1,000 bundles, and Chester Helmer cut 1,000 bundles. Payment for the flag was at the rate of \$.025 per bundle, or \$50 for both permits.

V. MANAGEMENT INVESTIGATIONS AND APPLIED RESEARCH,  
RESEARCH NATURAL AREA

- A. Wildlife Management Studies 1 through 8, 12, and 13 have been completed and finalized; Wildlife Management Studies 9 through 11, 14, and 15 are still in progress:

- No. 9 - WATERFOWL UTILIZATION OF FLOODED GREEN TIMBER AT THE MONTEZUMA NATIONAL WILDLIFE REFUGE, by Eino Kivisalu

All field work has been completed. The investigator continued data analysis and writing thesis. Co-author Dr. Daniel Thompson continued the investigation of cavity nesting ducks in 1971. He estimated 100 wood duck nesting attempts on 600 acres (report appended).

- No. 10 - BANDING LOCAL AND FLIGHTLESS CANADA GEESE TO DETERMINE MIGRATIONAL PATTERNS AND HARVEST RATES OF MONTEZUMA REARED GEESE; by Clayton Hardy, Martin Phillips, and Thomas Sanford

This is a continuing study. With the help of Youth Conservation Corps students 48 goslings and 7 adult birds were banded in 1971. This was considerably better than the 5 goslings banded in 1970 and nearly 50 percent of the production for the year. With this increased banding success, some analyzing of return data will be attempted next year.

- No. 11 - PURPLE LOOSESTRIPE SURVEILLANCE AND CONTROL; by Clayton Hardy, Martin Phillips, Thomas Sanford, and summer students: Thomas Mitchell, Roger Sleeper, Lester Denison, Peter McCarten Jr., and Edward Beary.

The study consists of biological observation of the growth and reproduction of Purple Loosestrife, mechanical and selective chemical controls, and collection of data to discover or develop a successful method for control of this plant. All field work has been completed since 1970; evaluation of data by Cornell University statisticians still in progress.

No. 14 - EFFECTS OF SEASONAL FLOODING ON SMALL MAMMALS, by  
Dr. Daniel Thompson and Dr. Milo Richmond

This study consists of investigations on the effects of flooding on reproductive success and food habits on the small mammals inhabiting the muckland forest. The investigators spent most of 1971 collecting and analysing data on population densities, movements, and stress. A partial report is appended.

No. 15 - GROWTH AND SURVIVAL OF SWAMP WHITE OAK AND OTHER  
TREE SPECIES IN A GREEN TIMBER WATERFOWL IMPOUNDMENT,  
by Frank Golet and Dr. Daniel Thompson

Investigations by Frank Golet were completed and the final report was submitted in 1969. Continued studies of radial growth of swamp tree species are being conducted by Doctor Thompson and Cornell University personnel. A partial report is appended.

B. Waterfowl Banding

Fifty-five Canada geese were banded by refuge personnel during July and is discussed under Wildlife Management Study No. 10. Only five ducks were banded during the year due to the breakdown of the refuge airboat.

C. Natural Areas

1. Beech-maple knoll--an 8-acre tract located in the southwest corner of the Storage Pool (Primary Type SAF60; beech-sugar maple).
2. Swamp woods--a 100-acre tract located in the south portion of the Main Pool (Primary Type SAF39; black ash, American elm, red maple).

Both areas were visited several times during the year. No disturbance was noted.

D. Cooperative Programs

During August, 62 gadwalls were captured by members of the Montezuma and Iroquois Refuge staffs and transported to Iroquois Refuge as part of their gadwall transplant study. Of the 21 birds transplanted in 1969 and 1970, one pair successfully nested in 1971, the first recorded breeding record for the entire Niagara Frontier Region.

## VI. PUBLIC RELATIONS

### A. Recreational Uses

Approximately 124,000 visitors to the refuge were recorded for the year. This is more than twice the greatest number ever previously recorded that occurred in 1969 when there were 61,716 visitors. The 1971 total is inclusive of all uses. This included people driving in the entrance road to observe deer, ducks, geese, and pheasants in the Display Pool but who turned around and left without paying the entrance fee. Total visitor use recorded in past years did not include the latter visitation, but it would not have been responsible for the more than 200 percent increase over 1969, and 300 percent increase over 1970 (40,000 visitors). This increase in use was not reflected by an equal increase in the amount of entrance fees collected:

	<u>1970</u>	<u>1971</u>
Golden Eagle Passports	\$ 158	\$ 480
Blind Fees (Waterfowl Hunting)	946	802
Daily Admissions	<u>5,186</u>	<u>7,512</u>
TOTAL	\$6,290	\$8,866

The peak visitor months were April (20,250), July (14,500), August (18,500), and October (22,000). This unusually high amount of public use required resident staff to control traffic problems and keep people from harrassing waterfowl on weekends and holidays. Staggered tours of duty and overtime will be necessary to properly and fairly handle these peak load situations.

More Golden Eagle Passports were sold this year than last, only because last year's Congressional indecision caused confusion for the public. The passports were increased to \$10 this year and only 48 were sold compared with 58, 88, and 30 sold in 1968, 1969, and 1970 respectively.

During the peak of goose migration in April 1970 Staff Specialist Norman Kerr from Eastman Kodak in Rochester, NY visited the refuge to take some photographs. He was assisted by our staff and came up with an outstanding photograph of flying geese. This photograph was blown up to a sectional print measuring 18' high by 60' long that was displayed by Kodak in Grand Central Station, New York from September 13 to October 4, 1971.

The conservation education room, formerly the three-stall garage left on the headquarters office building, was completed by mid-April. Work to convert it began in the summer of 1970. This



room is now used as a lecture, meeting, and briefing room for the Division of Wildlife Refuges in this part of Region 5, Division of Management and Enforcement, the refuge staff, and for groups visiting the refuge.

The second Formal Sanctioned Field Trial of the Finger Lakes Retriever Club was held on the refuge on August 14 and 15. Fifty-six dogs were entered in the competition. Upland trials were conducted in the fields around subheadquarters, and the water trials were held in the South Spring Pool and the Black Brook area of the Storage Pool. More than 300 people took part in or viewed the events. Everyone present gave their high praise for the refuge facilities and the retriever club hopes to conduct a licensed trial on the refuge next year.

In an era when the news is filled with reports of young people involved in vandalism, copping out on drugs, and generally dropping out of society, we were refreshed to learn that many youths do care. This year three organizations approached the refuge to volunteer their time and work. A Cub Scout pack, a Sea Explorer Scout post, and a college conservation class were thanked for their involvement through local papers. The Cub Scouts completed a Johnny Horizon Cleanup Campaign, the Sea Explorers camped out for two nights and set out wood duck boxes, and the college conservation class planted trees and shrubs for wildlife food and cover--all on the refuge.

A group of twelve Girl Scouts from Rochester spent four days camping on the Storage Pool west parking area and canoeing in the Clyde River and New York State Barge Canal system. The girls were given two lectures by the refuge staff. Despite the mosquitoes, the girls picked up several litter bags full of trash on their canoe trips through the refuge.

The Conservation Education Department graduate students from Cornell University prepared a self-guiding auto tour route leaflet. The guide included sketches as well as text. Although major rewriting was necessary to explain refuge objectives better, the students did a good job. The refuge plans to have the leaflet printed in time for the many people who visit the refuge in the spring of 1972. 53,000 people now use the auto tour route annually. Hopefully, this tour route guide will make their visit more meaningful and enjoyable.

#### B. Refuge Visitors

Donald Boyd of the Washington Office visited the refuge and talked with Refuge Manager Phillips concerning the YCC Program.

All Region 5 Game Management Agents and 15 New York State Conservation Officers attended a week-long law enforcement training session held in the refuge conservation education room. Refuge personnel from Moosehorn, Parker River, Great Meadows, Bombay Hook, Brigantine, Prime Hook, Erie, Iroquois, and Montezuma also participated. Regional Office visitors included Rex Tice and Gene Hester, both from Management and Enforcement; and Howard Woon, Regional Refuge Supervisor.

Donald Reese, Assistant Regional Director; and John Jones, Bureau Safety Officer, Washington; visited the refuge on a safety inspection during the Youth Conservation Corps Program in July. Assistant Regional Director John DuFree visited the refuge to familiarize himself with our program.

Larry Smith and Sammy Waldstein, both from Iroquois Refuge; Roger Steelman and Richard Antonnette, both from Erie Refuge; and Montezuma Refuge staff attended a Systems Workshop in the refuge conservation education room. The workshop was conducted by Assistant Regional Refuge Supervisor Merton Radway.

Ben Bradley; George Elliot; Fred Slater; and Denton Albro, Regional Game Managers for the New York State Department of Environmental Conservation, visited the refuge to discuss management practices.

Arthur Ferguson, Youth Conservation Corps Coordinator from Washington, inspected the YCC Camp.

Robert Bernath visited the refuge to discuss the development of an interpretive program.

The entire staffs and families of this refuge (including YCC staff) and Iroquois Refuge, Game Management Agent Vendel and family, Dr. Daniel Thompson and family (Cooperative Unit Leader at Cornell University), and other Cornell Unit members attended a refuge picnic.

Hatchery Manager Wayne Bonney and his Assistants Herb Rice and Thomas Jebbett, Cortland National Fish Hatchery, visited the refuge.

#### C. Refuge Participation

Refuge personnel presented a variety of programs to 124 groups. Refuge tours were given to 69 groups totaling 3,173 people.

Six off-refuge programs included talks and slide presentations for 580 people and the showing of the films "So Little Time", "Canada Goose", "Cry of the Marsh", and/or "World in a Marsh" for 49 groups totaling 7,455 people.

Our news release activities were stepped up this year in an effort to meet the demand for information about our activities. We even began taking black and white photographs and sending glossy prints with the releases. This increased the acceptability by the press and increased the number actually printed. It also attracted more attention to the articles and increased the number read by the public.

We sent out sixteen different news releases to 138 newspapers in the Central New York area--an average of eight newspapers per release. Our column inches totaled 1,150 for articles printed that we actually obtained copies of. In many cases we missed the articles although they were printed, and these are not included in the totals given.

The subjects of some of the news releases were: the Young Waterfowler's Training Program, National Wildlife Week, the Golden Eagle Passport, the killing of the refuge's blind deer by dogs, the Youth Conservation Corps Program, the Wyoming eagle poisoning, the waterfowl hunting season, the record fall migration of waterfowl into the refuge, deer and small mammal hunting seasons, the arrival of a new staff member, staff member receiving 20-year pin, refuge revenue sharing, a report on hunting violations, and Both Sides of Hunting. These all proved of great importance in bringing the refuge before the public.

Assistant Manager Kipp participated in the 1971 Annual Christmas Bird Count on January 1. Fifty-five different species of birds were observed on the refuge.

The refuge staff took part in three major Conservation Field Day Programs. On May 13 Refuge Manager Phillips and Assistant Tschache presented talks and a display to 675 six graders as part of the Seneca County 4-H Conservation Field Day held at Sampson State Park, Ovid, New York. The field day is an annual event presented to all six graders in Seneca County. Instructors from all branches of the conservation field take part in the program. On May 15 Cayuga and Seneca Counties held their "Scout-O-Ramas" at Emerson Park, Auburn, New York and Babcock Park, Wilkard, New York. The field days are normally held every four years; and unfortunately, this time both were held on the same day. We were forced to split our display material, and Refuge

Manager Phillips went to Auburn and Assistant Managers Mullen and Tschache travelled to Willard. Over 7,000 people viewed the combined displays.

#### D. Hunting

##### 1. Waterfowl Hunting

The sixth controlled waterfowl hunt extended from October 12 through November 20. Applications were received from 1,369 hunters, a 2 percent decrease from last year. Of the 450 applicants selected for the hunt, 248 (55 percent) claimed their reserved blinds. Due to the large number of unclaimed blinds and a low number of stand-by hunters (380 hunters), 97 percent of the stand-by hunters were able to participate in the hunt.

A total of 1,059 hunters (including young waterfowlers) participated in the hunt, harvesting 642 birds (harvest rate of 0.6 birds/man). Eighteen species were harvested with the mallard, Canada goose, black duck, and green-winged teal making up 75 percent of all birds harvested.

The crippling loss was increased from an average of 21 percent of the estimated total kill during the past five years to 28 percent for this year. Data for determining crippling loss is obtained voluntarily from hunters at checkout and is a minimum figure.

A noted decrease in hunter participation (2 percent decrease in applications received, only 55 percent of the reserved blinds being claimed and a 38 percent decrease in the number of stand-by hunters when compared to 1970) was primarily due to the poor hunter success in 1970 and this year's revegetation of the Storage Pool making hunting conditions and retrieval of crippled birds difficult.

Boundary hunting for Canada geese continues to be a serious problem. Hunting in the Clyde River and along the New York State Barge Canal and "sky-busting" along the north refuge boundary dropped hundreds of cripples onto the refuge. Many refuge visitors complained bitterly about the number of birds crippled. Several visitors have picked up birds along the tour route that have been knocked down by hunters within their view. Both State and Federal personnel are in

agreement that inlets and oxbows from the river which are bordered on both sides by refuge land should be closed to hunting. This will be accomplished by a State Order closing these areas to hunting before next season.

## 2. Young Waterfowler's Training Program

The Young Waterfowler's Training Program was another success this year with excellent cooperation between the refuge and participating sportsmen's organizations. Approximately 150 students, instructors, and parents participated in the annual Field Day with courses in waterfowl regulations, gun safety, decoys and calling, shotgun range and patterning, waterfowl identification, and retriever handling being covered. Certificates were awarded to 43 out of 51 boys who completed the training.

The first, second, and third Saturdays of the waterfowl season were reserved for the young waterfowlers' hunt. To provide for an increased number of participants, a third day was provided this year. Three Canada geese, 25 ducks, and one coot were harvested (harvest rate of 0.6 birds/hunter).

## 3. Archery Deer Season

The entire refuge, with the exception of safety zones around headquarters and subheadquarters, was open weekdays for the archery hunting of deer of either sex from November 15 to December 7. An estimated 1,030 hunters harvested approximately 20 white-tailed deer. A comparison of the last ten years is presented on the following page.

## 4. Small Mammal Season

Approximately 90 hunters utilized the refuge during the January-February small game season. Rabbits were the primary species hunted. Due to the low rabbit population and heavy snow cover, few raccoons and squirrels were taken.

## D. Violations

Robert E. Campbell of Pennelville, NY and Randy S. Salensky of Syracuse, NY pleaded guilty to trespassing on the refuge and

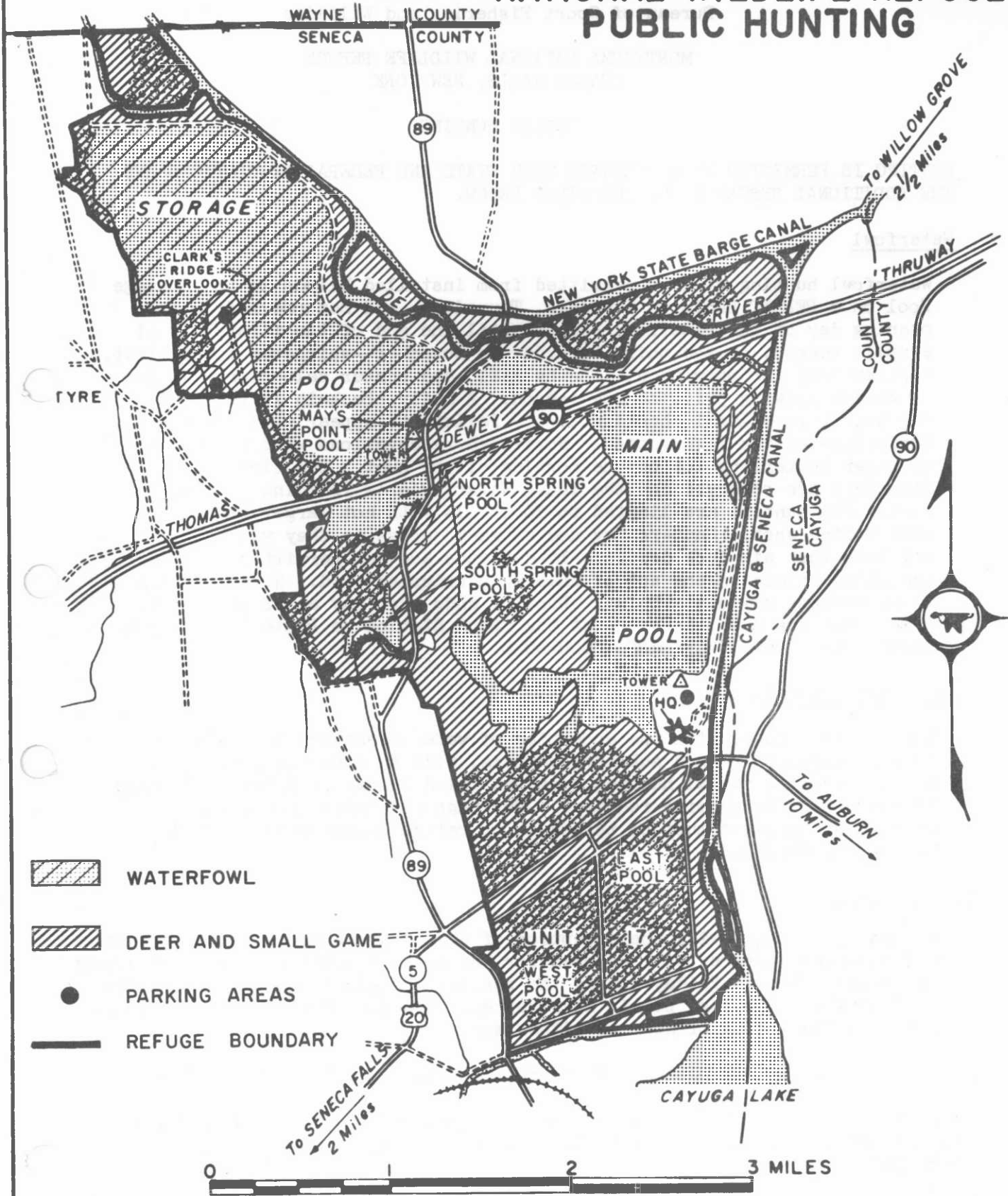
## ARCHERY DEER HUNT


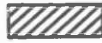


## MONTEZUMA NATIONAL WILDLIFE REFUGE

Year	Total Days Hunted	Hunter Use Days	Number of Deer Checked	Sex		Age Class		Known Kill	Estimated Kill	Success Ratio
				Male	Fem	Fawn	Adult			
1957	1	654	10	5	5	6	4	11	11	1.7
1958	2	879	29	21	8	11	18	29	29	3.3
1959	3	1,325	34	14	20	16	18	34	34	2.6
1960	1	605	10	7	3	1	9	10	10	1.7
1961	1	403	6	5	1	2	4	6	6	1.5
1962	1	556	22	8	14	11	11	22	22	3.9
1963	1	780	14	7	7	5	9	14	14	1.8
1964	1	901	36	16	20	19	17	36	36	4.0
1965	1	1,300	36	20	16	17	19	43	47	3.6
1966	7	930							20	2.2
1967	6	612							6	1.0
1968	12	349							5	1.5
1969	12	678	7	3	4	4	3	7	7	1.0
1970	11	696	7	5	2	-	7	7	15	2.2
1971	17	1,030	13	7	6	3	10	13	20	1.9
TOTAL	77	11,698							282	2.4



# MONTEZUMA NATIONAL WILDLIFE REFUGE PUBLIC HUNTING



-  WATERFOWL
-  DEER AND SMALL GAME
-  PARKING AREAS
-  REFUGE BOUNDARY

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
Fish and Wildlife Service  
Bureau of Sport Fisheries and Wildlife

MONTEZUMA NATIONAL WILDLIFE REFUGE  
SENECA FALLS, NEW YORK

PUBLIC HUNTING

HUNTING IS PERMITTED IN ACCORDANCE WITH STATE AND FEDERAL REGULATIONS AND THE ADDITIONAL RESTRICTIONS DESCRIBED BELOW.

Waterfowl

Waterfowl hunting will be permitted from installed blinds on the Storage Pool on a PERMIT BASIS on Tuesdays, Thursdays, and Saturdays from the opening day of the waterfowl season until the end of the first half of a split season, or the third Saturday in November--whichever comes first. Applications for permits will be by mail, and hunter selection will be by random drawing prior to the season. A daily check-in is required one hour before legal shooting time. Failure to appear will cause forfeiture of the reservation. Forfeited reservations will be awarded to other hunters by lot on the morning of the hunt. The first three Saturdays are reserved for the Young Waterfowler's Training Program hunt. All hunters are limited to 10 shells with not larger than size 2 fine shot. Hunters may use as many decoys as they wish, but not less than six duck decoys. Loaded guns are not permitted outside the blind unless in the act of chasing a crippled bird. Not more than three persons may use a blind. Hunting ends each day at 12 noon local time. Hunters must check out at the Check Station on Route 89 by 1 p.m. local time. RETRIEVERS ARE ENCOURAGED.

Small Game Mammals

The entire refuge, with the exception of water areas and closed areas around headquarters and sub-headquarters, will be open for small game and unprotected mammal hunting from the third Sunday in December through February 28. No permits required. Ear tags and radio transmitters on raccoon and opossum must be turned in to refuge headquarters. BIRDS MAY NOT BE HUNTED.

Deer Hunting

The entire refuge, with the exception of closed areas around headquarters and sub-headquarters, will be open for the archery hunting of deer of either sex Monday through Friday during the regular shotgun season--NO SATURDAYS OR SUNDAYS. No refuge permit is required. New York State regulations to apply to the taking of deer of either sex.

PLEASE DO NOT DISTURB ANY SIGNS, MARKERS, OR ANY RESEARCH DEVICE

For further information, please contact the Refuge Manager, Montezuma N.W. Refuge, RD 1, Box 232, Seneca Falls, New York 13148, or telephone (315) 568-5987.

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were fined \$27.50 each in State Court (Martin S. Phillips, Manager).

Three cases are pending in Federal Court from the 1970 hunting season--one for hunting in a closed area and two for possession of protected species (pied-billed grebe).

Two cases are pending in Federal Court from the 1971 fishing season--one for trespassing and one for trespassing and fishing without a license.

## VII. OTHER ITEMS

### A. Items of Interest

#### 1. Canadian Banding Assignment

Game Management Agent Cornelis Vendel and Assistant Refuge Manager Ottley Tschache were assigned the airboat night-lighting waterfowl banding assignment on the St. John's River in New Brunswick, Canada. The refuge fiberglass "Aircat" airboat to be used had been patched and repaired repeatedly since acquisition in 1965. Before their departure on July 15 the hull and trailer were totally rebuilt by the Narcotic Rehabilitation Center, Iroquois Refuge. Montezuma staff and contractor Foster Welton installed a totally rebuilt 4-cylinder 150 h.p. Lycoming engine. It later turned out we had been "taken" on the rebuilt engine. Costly repairs had to be made in Canada to get the engine to start and operate dependably because the engine had not been rebuilt properly.

After only 13 hours of operation, over a four-night period, the crew was operating on Grand Lake near Oromocto, New Brunswick when the frame supporting the engine broke (apparently from metal fatigue). This caused the engine to drop about 6 inches, in turn causing the propeller to strike the boat hull and disintegrate. In turn, this caused extreme vibration breaking the spot lights, the alternator mounts, and the exhaust pipes. The alternator and exhaust pipes were caught by the propeller and thrown through the engine guard. The fuel tank was also torn loose. Fortunately, no one was struck or injured in the incident. Damage to the hull and engine was severe enough to be beyond reasonable repair and abort the assignment. It was then recognized that the boat should have been replaced as had been requested and recommended several years earlier.

#### 2. Water Analysis

Montezuma was selected for water sampling and analysis to determine the effect of large numbers of geese (40 - 75,000) on the quality of our effluent. Don Reese, Assistant Regional Director; Ben Rizzo, Hydraulic Engineer; and the Refuge Manager corresponded and met with representatives from the Environmental Pollution Agency, Cornell University, and the Geological Survey. A contract agreement with the

Geological Survey was finally reached in August, at a cost of \$9,000. This was the remainder of the sum appropriated by Washington for water quality monitoring programs on hatcheries and refuges in Region 5. At the present Montezuma has the distinction of being the only refuge studied in this manner.

The primary goal is to determine the influence of seasonal concentrations of migratory waterfowl upon fecal coliform, salmonella, and streptococci counts in our refuge effluent for a one-year period. Samples were taken bi-weekly during the fall and will again be taken in the spring of 1972. For the remainder of the year samples will be taken monthly. Samples are taken at refuge boundary inflow and outflow. Secondary parameters measured are: solids (total and fixed); nitrogen (ammonia, nitrite, nitrate, organic, total); total phosphate (inorganic and organic); dissolved oxygen; conductivity; pH; temperature; and TOC (total organic carbon). Preliminary results have shown that the refuge acts as a settling basin and holding tank to remove and clean the waters of Black and White Brooks that flow into the refuge despite high goose concentrations. Both brooks are polluted with farm, household, and commercial effluent. The study will continue through May and will include a final conclusive report.

### 3. State Land Permits

During the late portion of the 1970 split waterfowl hunting season, a permittee on New York State Department of Transportation (DOT) land adjoining the refuge was caught illegally hunting waterfowl from his permit lot. The refuge holds joint permits to these lands with current permittees until deceased. Use of the current permit lots has been a problem because access is across refuge lands or the Barge Canal lock and dam. We were unable to prosecute in Federal Court because both the regulation violated and the land where it occurred was New York State's. With our encouragement the State chose to revoke all remaining permits:

Mr. Louis J. Faina, Permit No. 48-10-361  
Mr. Andrew DeMario, Permit No. 48-10-351  
Mr. Phillip Westcott, Permit No. 44-9-157  
Miss Belma Jones, Permit No. 55-5-56  
Mr. Fred G. Jones, Permits No. 56-3-35  
Mr. Orville M. Forster, Permit No. 64-4-58

The person whose actions precipitated the revocation contacted all State and Federal politicians petitioning their support in his favor. Congressman John Terry made repeated inquiries at the refuge level, Regional Office, and Washington Office. After much correspondence and several meetings of State and Federal officials, Mr. Terry was satisfied that we were all acting in a just and reasonable manner. Thus, the revocation became final and the refuge had ended nearly thirty years of problems dealing with permittees. These lands are now under permit to the Bureau to be used as a part of the refuge and are posted with State and Federal signs. Enforcement of trespass and other violations on these lands is through adoption of our violation reports by State Police and Conservation Officers.

#### 4. Interior Navigable Waters

Since 1964 the local opportunity to hunt Canada geese has decreased because of commercialization and posting. At the same time the number of migrant fall geese has increased as well as the demand to hunt them. Specifically, hunting on the Clyde River within the refuge boundary and in the New York State canal system adjacent to the boundary has become a problem. Hunters anchor or float in the Clyde River and pass shoot at waterfowl as they fly in and out or from one portion of the refuge to another. This hunting encourages trespassing and other violations because birds shot usually overfly the river or canal to land dead or crippled within the refuge boundary. In some locations this unauthorized and undesirable hunting is a hazard and disturbance to public use of the auto tour route and the managed waterfowl hunting program.

The Refuge Manager began trying to obtain a waterfowl hunting closure on the interior waterways in March. First efforts were through the Bureau at the Regional level. Recommendations were to go through the State, and at year's end we had plenty of support from all quarters. What State agency was to write the regulation was being bantered about between the Departments of Environmental Conservation and Transportation.

#### 5. Retirements

Regional Refuge Supervisor Thomas Horn retired in March. A retirement party was given for him near Boston and



Phillips, Mullen, and Didona attended. In addition to contributing toward his gifts the refuge staff presented him with a mounted redhead duck prepared by Dewey.

Associate Regional Refuge Supervisor Merton Radway and Management Assistant Edith Gilroy retired in October. A retirement party was given for them at the end of a Regional Refuge "Systems" Workshop in Boston. Phillips, Mullen, Tschache, and Didona attended. In addition to contributing toward their gifts the refuge staff presented Mert a copy of the Eastman Kodak goose photograph taken at Montezuma. Mert was the first Refuge Manager at Montezuma and spent several pleasant years here. Needless to say he has many fond and cherished memories of the refuge.

#### B. Personnel Action

Tschache attended the Atlantic Flyway Wingbee at the Patuxent Wildlife Research Center January 25 - 29.

Phillips attended a Youth Conservation Corps Program meeting in Washington March 1 - 6 and in San Francisco October 29 - November 4.

Didona attended the DIPS training session in Boston April 16.

Mullen and Tschache attended the Law Enforcement Training Session held at Montezuma Refuge April 21 - 23.

All refuge employees attended sessions of the Central New York Safety Conference and Exposition May 10 - 12.

Phillips and Dewey completed the American National Red Cross Multi-Media First Aid training and instructor training May 26 - 27.

Tschache was converted from Biological Technician to Assistant Refuge Manager on June 14.

All refuge employees and YCC enrollees and staff completed the American Red Cross Multi-Media First Aid course July 1. Manager Phillips and Biological Technician Dewey were instructors.

Tschache went to New Brunswick, Canada as Assistant Leader of an airboat banding operation with Game Management Agent Vendel July 15 - 25.

Miss Linda D. Kipp entered on duty as Assistant Refuge Manager Trainee on July 25. Linda transferred from the Boston Regional Office and is the first woman Refuge Manager Trainee in the northeast.

Phillips, Mullen, and Kipp attended a Systems Analysis Workshop held at Iroquois Refuge July 27 - 28.

Didona completed the "Better Office Skills and Services" training course held in New York City August 2 - 5.

Phillips, Tschache, and Kipp attended the "Focus Outdoors" conference held at the University of Massachusetts August 6 - 8.

Tschache spent two weeks assisting engineering in a field survey for a proposed Allegheny National Fish Hatchery at Bradford, Pennsylvania August 23 - September 3.

Didona was promoted to a GS-4/2 September 13.

Phillips, Kipp, and Didona completed the American National Red Cross Advanced Course in First Aid to the Injured. The course began September 23, with 2-hour sessions one night a week for eight weeks. The course terminated December 2.

Phillips, Mullen, Tschache, and Didona attended a Systems Analysis Workshop in Boston October 4 - 9.

Timothy Scharett began work at the refuge as a Neighborhood Youth Corps worker on December 13. He is 16 years of age and attends high school equivalency classes while employed in the NYC program.

#### C. Credits

Section I - V credited to D. M. Mullen.

Section VI (A - C) credited to M. S. Phillips and L. D. Kipp.

Section VI (D - E) credited to O. P. Tschache.

Section VII (A) credited to M. S. Phillips.

Section VII (B - E) credited to D. M. Mullen.

YCC section appended, credited to M. S. Phillips.

Forms, tables, and graphs as indicated; black and white photos by V. A. Dewey. Color photos by M. S. Phillips unless otherwise indicated. YCC color photos by David Rose.

The report was edited by the Refuge Manager and staff and typed by J. A. Didona.

D. Publications

None this year.

E. Safety

Safety meetings were held each month and numerous tailgate meetings were conducted before work projects were undertaken. Safety awareness was especially stressed during our YCC Program; and hardhats, gloves, and protective clothing were worn on most work projects. No accidents of any kind occurred during the YCC Program. The safety record at the end of the year was 140 accident free days and 140 days no lost time accidents.

Two accidents involving the refuge staff were recorded during 1971. On May 27 Maintenance Worker Ken Magargel strained and reinjured his back (previous injury of 08/23/67) while lifting the tongue of the grain drill. On August 11 Maintenance Worker Magargel strained and reinjured his back while lifting the end of a grass cutter bar to attach it to the riding hitch of the refuge farm tractor.

Reviewed by:

Howard D. Woods  
Regional Refuge Supervisor

Date: \_\_\_\_\_

Submitted by:

Martin S. Phillips  
Date: April 14, 1972

NR's checked in R/O by: HC

## 1971 YOUTH CONSERVATION CORPS PROJECT

### A. Introduction

In early February we were notified from Washington that Montezuma had been selected as a site for a 20 enrollee co-educational YCC non-resident camp. Project Leaders of stations with YCC camps then attended a planning and briefing session in Washington during the first week of March.

### B. Preparation and Implementation

Upon return from the briefing we had to become familiar with the Manual for the program. Fortunately, a great deal of flexibility was built into the program because we had a great deal of work to do to set the camp up, and very little time in which to do it. We had to select an area from which to recruit, and arrange to have the school Guidance Counselors recruit and select enrollees according to criteria established by the Interior Department.

YCC staff also had to be recruited and selected. Our Group Leader staff consisted of Chester Crosby, Seneca Falls Junior High School Science Teacher; Bob Adams, Head Football Coach and Athletic Instructor at Auburn High School; and Miss Terri Robinson, a recent psychology graduate from Syracuse University. The Coordinator-Director of our camp was not named by Washington until late spring. The assignment was given to David Rose, Wetlands Manager of the Hastings Wetland Management Office, Nebraska. The camp was activated for an 8-week period, beginning June 28 and ending August 20.

In order to transport 20 enrollees around the refuge we had to acquire some sort of appropriate vehicles. This was accomplished by arranging for the loan of two nine-passenger station wagons with the Commanding Officer of the Seneca Army Depot, Romulus, New York. We also borrowed some safety equipment (gloves, goggles, etc.), hand tools (shovels, axes, etc.), and two book cases. They gave us some coveralls and fatigues. Surplus work project materials were acquired through the cooperation of GSA and Griffiss AFB, Rome, New York. The latter cooperation was minimal and supplies inconsequential. Other supplies were purchased directly from GSA catalogs.

Some site preparation was necessary. We had inadequate toilet and washroom facilities and no appropriate location for the enrollees and staff to relax, eat lunch, meet, and plan. A general

purpose large size military tent was provided surplus from the Job Corps. We erected it and enrollees and staff constructed a platform for it. Due to its deteriorated condition it leaked and collapsed numerous times during the summer. Therefore, it was really never utilized even though we had a substantial investment of time and money in it. We purchased two chemical flush toilets; one was installed in the shop, the other was a portable with fiberglass shelter. A double fiberglass washup sink was installed in the shop and water piped in from the office. Enrollees also assisted in preparing these facilities.

The 20 enrollees, aged 14 to 18, consisted of 7 girls and 13 boys. Since they all came from the Auburn High School District transportation 15 miles one way was a problem. We provided bus transportation morning and evening at no charge to the enrollee. Group Leaders Adams and Crosby occasionally rode the bus and the ride often turned into a "rap session", an extension of work and education. In addition, one polluting motor vehicle to transport 22 people was a good environmental example to set.

At the end of the program a camp picnic was held at the refuge for a full afternoon. Steak and a variety of side dishes and cake were available and quickly consumed. Touch football was the major event with all staff, enrollees, and Art Ferguson (YCC Bureau Coordinator, Washington) participating. A genuine good time was had by all (We all felt "had" by the end of the summer anyway).

#### C. Work Projects

Meaningful and worthwhile work projects that could be accomplished by youths with hand tools had to be planned and developed. The following list of 34 projects were what we came up with. Projects completed have an asterisk.

1. Post boundary.
2. Construct hunting blinds and set out\*.
3. Paint buildings\*.
4. Litter and trash pickup\*.
5. Construct Display Pool fence\*.
6. Sand and stain picnic tables\*.
7. Construct nature trail boardwalk.
8. Build rustic road gates.
9. Lawn and picnic area maintenance\*.
10. Waterfowl check station improvement\*.

11. Refurbish recognition signs.
12. Insulate field lab.
13. Brush ditches and marsh edge\*.
14. Erect bluebird houses\*.
15. Timber stand improvement.
16. Water control structure maintenance.
17. Routine weekly housekeeping\*.
18. Wildlife timber stand improvement.
19. Nest search\*.
20. Appraise area for natural trail\*.
21. Erect pasture fence.
22. Fence forested area.
23. Pasture cleanup.
24. Tour guide service\*.
25. Drive trap Canada geese\*.
26. Wood duck trapping.
27. Prepare photo blinds and trail.
28. Treat and stain footbridge\*.
29. Waterway boundary cleanup.
30. First aid training\*.
31. Green timber impoundment footbridges.
32. YCC facilities development\*.
33. Paint stain and install interpretive signs\*.
34. Tree and shrub planting\*.

The total value of work accomplished during the 8-week program was \$39,165.

#### D. Budget Costs

Our total camp budget was \$18,000. From this we paid staff (\$3,000), Coordinator-Director's per diem (\$1,800), enrollees pay (\$8,750), and buses for work and educational field trips (\$1,730). From the remaining \$2,420 we paid for the YCC library, film and processing, and work supplies. The largest single project cost was \$1,260 for the Display Pool fence wire, posts, and post preservative. The refuge footed the bill for the cost of the remaining projects, gasoline, utilities, and a variety of miscellaneous items. The toilets, washup facilities, and tent materials were paid for with special funds supplied by the Regional and Central Offices of the Division of Wildlife Refuges. Needless to say, however, the YCC Program was a major summer expense and project for the refuge and staff. None of the YCC staff were familiar with the refuge, its programs, and projects. There-



fore, we had to supply staff all summer to assist with the program, not to mention the planning and preparation required beforehand.

#### E. Conservation Education

The program was set up so that approximately 10 hours of every 40-hour week was for conservation education. We supplied a fairly complete library of paperback books on a variety of subjects. Some reading was strongly recommended with the subject matter left to the choice of the enrollee. Except for occasional use of the field guides very little reading was actually done. Reading and classroom type instruction was not too popular because they desired to escape from the normal school-year routine.

Conservation ethic and environmental awareness were stressed at all levels. The reasons, methods, and effects for all projects were discussed before, during, and after the project was accomplished. The work projects associated with the research conducted by our Cooperative Wildlife Research Unit at Cornell University were prefaced by sessions conducted by Dr. Daniel Thompson, Unit Leader. All others were conducted by refuge or YCC staff. Two educational sessions were conducted by guests Harry Greer, Auburn Community College Instructor of Conservation and Biology, and James Herron, State Trooper of the New York State Police.

Field trips to off-refuge sites, usually taking the best part of a full day, were enjoyed and enlightening. The following list describes location and reason for the visit:

1. Auburn, New York Sewage Treatment Plant - to see and learn about home town sewage treatment.
2. Cornell Ornithology Lab and Sapsucker Woods - to learn about birds, tour the facility, and study construction of boardwalk.
3. Owasco Lake Indian Village - to learn about Indians and history of our area.
4. Iroquois National Wildlife Refuge - to see and learn about another wildlife refuge.
5. Rogers Conservation Center, Sherburne, New York - to learn about ecology and visit a first rate conservation education facility.

6. Niagara-Mohawk Atomic Energy Electric Generating Plant on Nine-Mile Point, Lake Ontario - to see and learn about nuclear powered electric power plants and their goods and bad features.

#### F. Safety

Safe work habits were stressed constantly. We provided all the necessary safety equipment required for projects and required that it be used. Tailgate sessions prior to each project were held and safe use of tools and equipment demonstrated. Group Leaders supervised work crews of four to ten enrollees on each project and were active in keeping them spread out on different phases of the projects. Despite the use of axes, mattocks, brush hooks, bow saws, and other sharp instruments we had no reportable accidents. A couple of splinters or blisters yes, but no injuries severe enough to approach the need for medical attention (AMEN)! The only power equipment ever utilized, only by an 18 year old enrollee, was our old lawn and garden tractor with 42 inch lawn mower. We provided gloves and required hard-soled leather boots for work. Safety boots were recommended but, because of the difficulty of obtaining them in small enough sizes for girls, not required.

During the first week of the program the enrollees, YCC staff, and refuge staff were given the American National Red Cross Multi-Media First Aid Course. Following this they were oriented in the Bureau safety program and objectives. Fortunately, they were all relatively level headed and usually thought before they acted. Because of a shortage of passenger vehicles we were occasionally required to transport enrollee work groups around the refuge in the back end of pickup trucks. Despite warnings they would occasionally be caught sitting on the box side-flange instead of the bed. No one was injured but it is hoped this practice will not be necessary in the future because adequate transportation will be provided.

#### G. Conclusions and Recommendations

It is our opinion that this program was a success. It was a logistical, financial, and manpower straining. It was a success only because everyone worked hard to make it one. At the immediate conclusion to the program in August we all had our doubts. However, after attending the evaluation conference in late October (held in San Francisco), reading the preliminary

evaluation report compiled since, and in receiving feedback from our enrollees, their teachers, and counselors, I am positive the program was a success.

A success in what way? Nearly all of our enrollees have taken a greater and more active interest in their environment, ecology, the biological sciences, and school. They have developed more respect for and rapport with their elders from working with them. Some of them learned that this was not what they liked. Many of them learned for the first time what it was like to work 8 hours a day, often at strenuous or distasteful tasks. They learned what it was like to work with a variety of other personalities, not all of their own choosing and type. They learned to cooperate! Only one, a boy, dropped out of the program. He left a week early and has since also quit school. The remainder of youngsters have kept in contact and many have visited the refuge and/or staff members since.

We discovered the following problems and recommendations to alleviate them:

1. We based the YCC headquarters too close to our office. It was too confusing and disruptive to normal refuge routine and refuge visitors. We will headquarter them at subheadquarters in the future.
2. Twenty enrollees were too many if all they can work on is federal land. We have recommended fourteen enrollees and the approval to work on state, county, city, or village land as well.
3. Pickup trucks and rack trucks are not safe and adequate to transport enrollees. Passenger carrying vehicles must be obtained.
4. The program was a drain on an already inadequate budget and staff. Additional programs must "fly on their own" without further straining our refuge program, staffs, and primary objectives and obligations.
5. Surplus military tents from the Job Corps are usually rotten. We will set up headquarters in the waterfowl check station in the future (now that we have heat there).
6. None of our staff were familiar with the refuge or our programs and projects. Most important, the Camp Director should be hired locally, be familiar with everything before

camp begins, and assist in setting up plans for the summer.

The YCC Program is good, can continue to be a success, and many needed projects can be accomplished and still serve an educational function. Fund and staff it adequately, work hard, select good kids, and watch it go!

# WATERFOWL

REFUGE Montezuma

MONTHS OF January TO April , 1971

	(1)	(2) Weeks of reporting period								
Species	: 1-7 : 1	: 1-14 : 2	: 1-21 : 3	: 1-28 : 4	: 2-4 : 5	: 2-11 : 6	: 2-18 : 7	: 2-25 : 8	: 3-4 : 9	: 3-11 : 10
<b>Swans:</b>										
Whistling										
Trumpeter										
<b>Geese:</b>										
Canada	4	4	4	4	-		4	4	700	2,000
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
<b>Ducks:</b>										
Mallard	50	-							100	100
Black	5	-							10	10
Gadwall										
Baldpate										
Pintail										
Green-winged teal										
Blue-winged teal										
Cinnamon teal										
Shoveler										
Wood										
Redhead										10
Ring-necked										
Canvasback										
Scaup										
Goldeneye									25	25
Bufflehead										
Ruddy										
Other H. Merg.					17	25	25	25	25	25
C. Merg.									10	50
<b>Coot:</b>									2	2
					NR-1 From	January	to April	19	71	



WATERFOWL  
(Continuation Sheet)

(1) Species	(2) Weeks of reporting period								(3)	(4)	
	3-18	3-25	4-1	4-8	4-15	4-22	4-29	+1	Estimated	Production	
	11	12	13	14	15	16	17	18	waterfowl : days use	Broods : seen	Estimated Total
<b>Swans:</b>											
Whistling			3	8	1	1	1		98		
Trumpeter											
<b>Geese:</b>											
Canada	10,000	30,000	30,000	45,000	60,000	60,000	60,000	60,000	2,144,068		
Cackling											
Brant											
White-fronted											
Snow	10	20	20	100	10	1,000	1,000	1,000	16,120		
Blue				10	-	2,000	2,000	2,000	30,070		
Other											
<b>Ducks:</b>											
Mallard	100	500	1,000	1,000	1,000	1,000	500	500	37,950		
Black	10	100	500	500	500	200	100	100	13,645		
Gadwall		10	50	50	50	50	200	200	3,070		
Baldpate		10	50	100	100	50	10	10	2,250		
Pintail	10	50	100	500	300	100	50	50	7,820		
GW teal		10	50	100	200	500	300	300	8,420		
BW teal	50	100	500	1,000	500	500	300	300	20,950		
Cinnamon teal											
Shoveler			25	300	500	300	100	100	8,675		
Wood		20	50	100	100	100	100	100	3,390		
Redhead	50	100	100	50	25	25	25	25	2,720		
Ring-necked		50	200	500	1,000	1,000	500	500	23,250		
Canvasback	10	50	100	100	50	10	10	10	2,320		
Scaup	50	50	50	100	500	200	100	100	7,450		
Goldeneye	500	500	500	300	100	25	10	10	13,905		
Bufflehead		10	50	100	200	200	100	100	4,720		
Ruddy			10	25	25	50	10	10	950		
Other H. Merg.	50	50	50	100	200	200	200	200	7,144		
C. Merg.	50	50	50	100	200	200	100	100	5,770		
R.B. Merg.					10	10	10	10	220		
<b>Coot:</b>	10	10	50	100	200	500	500	500	10,118		
				(over)	NR-1	Cont. From	Jan.		to April		1971



	(5)	:	(6)	:	(7)
	Total Days Use	:	Peak Number	:	Total Production
Swans	98	:	8	:	
Geese	2,190,258	:	63,000	:	
Ducks	174,519	:	5,560	:	
Coots	10,118	:	500	:	

SUMMARY	
Principal feeding areas	<u>all refuge pools and croplands</u>
	<u>(winter wheat)</u>
Principal nesting areas	
Reported by	

### INSTRUCTIONS

See Wildlife Refuges Manual Section 3321-24, "Wildlife Records".

- (1) Species: In addition to the birds listed on form, other species occurring on the 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).

WATERFOWL

REFUGE Montezuma

MONTHS OF May TO August, 19 71

(1) Species	(2) Weeks of reporting period									
	5-7	5-14	5-21	5-28	6-4	6-11	6-18	6-25	7-2	7-9
	1	2	3	4	5	6	7	8	9	10
<b>Swans:</b>										
Whistling	5	5	3	3	3	3	3	-		
Trumpeter										
<b>Geese:</b>										
Canada	60,000	2,000	500	325	320	315	310	300	300	300
Cackling										
Brant										
White-fronted										
Snow	1,000	100	5	-						
Blue	2,000	300	-							
Other										
<b>Ducks:</b>										
Mallard	500	500	550	600	800	1,000	1,200	1,300	1,400	1,350
Black	200	200	210	250	300	350	400	425	400	400
Gadwall	200	300	500	500	600	900	1,200	1,300	1,400	1,500
Baldpate	10	10	10	10	10	10	10	10	10	10
Pintail	50	25	10	10	10	10	10	10	10	10
Green-winged teal	300	200	200	210	225	230	240	250	260	250
Blue-winged teal	300	500	500	600	700	1,000	1,300	1,400	1,500	1,450
Cinnamon teal										
Shoveler	100	50	5	5	5	5	5	10	10	10
Wood	100	200	300	300	400	600	800	1,000	950	900
Redhead	25	25	25	25	25	40	30	30	30	30
Ring-necked	500	100	50	10	1	1	1	1	1	1
Canvasback	10	5	2	2	2	2	2	2	2	2
Scaup	100	50	10	-						
Goldeneye	10	-								
Bufflehead	100	10	1	1	1	-				
Ruddy	10	10	10	10	10	10	10	10	10	10
Other										
H. Merg.	200	100	50	25	25	25	25	25	25	25
C. Merg.	100	50	10	-						
R.B. Merg.	10	1	1	1	1	-				
<b>Coot:</b>	500	300	200	200	200	300	400	400	400	400

NR-1 From May to August 19 71

3-1750a  
 Cont. No. 1  
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WATERFOWL  
 (Continuation Sheet)

REFUGE Montezuma MONTHS OF May TO August, 19 71

(1) Species	(2) Weeks of reporting period								(3)	(4)	
	7-16	7-23	7-30	8-6	8-13	8-20	8-27	+4	Estimated	Production	
	11	12	13	14	15	16	17	18	waterfowl days use	Broods: seer	Estimated Total
Swans.											
Whistling					1	1	-		189		
Trumpeter											
Geese:											
Canada	300	300	300	300	300	300	300	300	468,590	20	100
Cackling											
Brand											
White-fronted											
Snow									7,735		
Blue									16,100		
Other											
Ducks:											
Mallard	1,300	1,300	1,300	1,300	1,300	1,300	1,500	2,000	137,500	20	800
Black	400	400	400	400	400	400	600	1,000	46,945	5	200
Gadwall	1,450	1,400	1,400	1,400	1,400	1,400	1,400	1,400	133,350	40	900
Baldpate	10	10	10	10	10	10	10	10	1,230		
Pintail	10	10	10	10	10	10	10	10	1,615	1	5
GW teal	250	250	250	250	275	300	800	2,000	41,180	5	50
BW teal	1,400	1,400	1,400	1,400	1,400	1,600	1,800	2,500	147,550	25	900
Cinnamon teal											
Shoveler	10	10	10	10	10	10	10	10	1,965	1	5
Wood	900	900	900	900	900	900	900	1,000	86,950	25	600
Redhead	30	30	30	30	30	30	30	30	3,585	1	10
Ring-necked	1	1	1	1	1	1	1	1	4,715		
Canvasback	2	2	2	2	2	2	2	2	323		
Scaup									1,120		
Goldeneye									70		
Bufflehead									791		
Ruddy	10	10	10	10	20	20	20	20	1,480	2	10
Other H. Merg.	50	50	50	50	50	50	50	50	6,325		20
C. Merg.									1,120		
R.B. Merg.									98		
Coot:	400	400	400	400	400	400	400	400	44,300	30	200
					(over)	NR-1	Cont. From	May	to	August	1971

(over) NR-1 Cont. From May to August, 1971

	(5) Total Days Use	:	(6) Peak Number	:	(7) Total Production
Swans	189	:	5	:	
Geese	892,425	:	60,000	:	100
		:		:	3,500
Ducks	617,912	:	10,033	:	
Coots	44,300	:	500	:	200

# SUMMARY

Principal feeding areas \_\_\_\_\_

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

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

## INSTRUCTIONS

See Wildlife Refuges Manual Section 3321-24, "Wildlife Records".

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- (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 Montezuma

MONTHS OF September TO December, 1971

(1) Species	(2) Weeks of reporting period									
	9-7	9-14	9-21	9-28	10-5	10-12	10-19	10-26	11-2	11-9
	1	2	3	4	5	6	7	8	9	10
<u>Swans:</u>										
Whistling									1	1
Trumpeter										
<u>Geese:</u>										
Canada	300	300	1,000	3,000	10,000	18,000	18,000	18,000	18,000	8,000
Cackling										
Brant										
White-fronted										
Snow						1	1	1	1	1
Blue										
Other										
<u>Ducks:</u>										
Mallard	2,500	2,500	2,500	3,000	5,000	8,000	8,000	8,000	8,000	8,000
Black	1,500	1,500	1,500	3,000	4,000	5,000	5,000	5,000	5,000	5,000
Gadwall	1,400	1,400	1,400	2,000	2,500	2,500	2,500	2,500	2,500	1,500
Baldpate	10	10	10	1,000	8,000	10,000	10,000	5,000	5,000	4,000
Pintail	10	10	10	500	2,000	2,500	2,500	2,500	2,000	1,000
Green-winged teal	3,000	3,000	3,000	2,000	1,500	1,000	1,000	1,000	1,000	1,000
Blue-winged teal	5,000	6,000	8,000	8,000	8,000	8,000	5,000	3,000	1,000	500
Cinnamon teal										
Shoveler	10	10	10	100	300	500	1,000	1,000	1,000	1,000
Wood	1,500	1,500	1,500	2,000	2,000	2,000	2,000	2,000	1,000	1,000
Redhead	30	30	30	30	50	100	100	100	100	100
Ring-necked	10	10	10	100	300	500	300	200	100	100
Canvasback	2	2	2	50	100	100	100	100	100	100
Scaup					10	50	50	50	50	50
Goldeneye					10	10	50	50	50	50
Bufflehead					10	10	50	100	200	500
Ruddy	25	25	25	25	25	25	25	50	100	100
Other H. Merganser	50	50	50	50	50	50	50	100	500	1,000
C. Merganser							50	100	500	500
Old-Squaw									2	2
<u>Coot:</u>	400	400	400	600	1,000	1,000	2,000	2,000	2,000	2,000

NR-1 From September to December 1971

3-1750a

Cont. N. 1

(Rev. March 1953)

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## WATERFOWL

(Continuation Sheet)

## REFUGE

## Montezuma

MONTHS OF September

TC

December

, 19 71

(1) Species	(2) Weeks of reporting period								(3) Estimated	(4) Production	
	11-16	11-23	11-30	12-7	12-14	12-21	12-26	+3	waterfowl	Broods	Estimated
	11	12	13	14	15	16	17	18	days use	seen	Total
Swans:											
Whistling	1	1	-						28		
Trumpeter											
Geese:											
Canada	5,000	10,000	5,000	8,000	10,000	10,000	10,000	10,000	1,098,200		
Cackling											
Bran											
White-fronted		2	2	-					28		
Snow	2	5	5	2	-				133		
Blue											
Other											
Ducks:											
Mallard	10,000	10,000	5,000	3,000	15,000	10,000	10,000	10,000	859,500		
Black	5,000	5,000	3,000	1,000	5,000	5,000	5,000	5,000	473,500		
Gadwall	1,000	500	100	100	10	10	10	10	153,540		
Baldpate	2,000	1,000	100	100	10	10	10	10	323,850		
Pintail	500	100	50	50	5	-			96,145		
GW teal	5,000	5,000	1,000	100	10	-			200,270		
BW teal	100	100	50	50	5	-			369,635		
Cinnamon teal											
Shoveler	500	100	100	100	10	10	10	10	40,350		
Wood	500	100	50	50	5	-			120,435		
Redhead	500	1,800	10	10	10	-			21,000		
Ring-necked	50	25	10	10	5	-			12,110		
Canvasback	50	10	10	10	10	-			5,222		
Scaup	50	10	10	10	10	-			2,450		
Goldeneye	50	25	10	10	10	-			2,275		
Bufflehead	500	500	100	10	10	-			13,930		
Ruddy	50	10	10	10	10	-			3,605		
Other H. Merg.	1,000	500	100	50	10	10	10	10	25,440		
C. Merg.	500	100	100	100	500	500	100	10	21,380		
Old-Squaw	2,000	2,000	1,000	100	50	10	5	5	118,770		
Coot:											

(over) NR-1 Cont. From September to December 1971



	(5)	:	(6)	:	(7)
	Total Days Use	:	Peak Number	:	Total Production
Swans	28	:	1	:	
Geese	1,098,361	:	18,001	:	
Ducks	2,744,735	:	40,345	:	
Coots	118,770	:	2,000	:	

SUMMARY	
Principal feeding areas	All refuge pools and croplands (winter wheat and buckwheat)
Principal nesting areas	
Reported by <u>Douglas M. Mullen, Assistant Refuge Manager</u>	

#### INSTRUCTIONS

See Wildlife Refuges Manual Section 3321-24, "Wildlife Records".

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- (5) Total Days Use: A summary of data recorded under (3).
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- (7) Total Production: A summary of data recorded under (4).

3-17F  
Form Nh A  
(Aug. 1952)

MIGRATORY BIRDS  
(Other than Waterfowl)

Refuge Montezuma Months of January to April 19 71

(1)	(2)		(3)		(4)		(5)			(6)
Species	First Seen		Peak Concentration		Last Seen		Production			Total
Common Name	Number	Date	Number	Inclusive Dates	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Use
<u>I. Water and Marsh Birds:</u>										
Pied-billed Grebe	1	4/4	25	4/30	25	4/30				
Great Blue Heron	5	1/1	30	4/30	30	4/30				
Common Egret	1	4/5	2	4/30	1	4/30				
Snowy Egret	1	4/24	1	4/24	1	4/30				
Green Heron	1	4/5	10	4/30	10	4/30				
Blk.-crnd. Night Heron	1	1/1	30	4/30	30	4/30				
Least Bittern	1	4/30	1	4/30	1	4/30				
American Bittern	1	4/5	20	4/30	20	4/30				
Common Gallinule	1	4/17	10	4/30	10	4/30				
<u>II. Shorebirds, Gulls and Terns:</u>										
Piping Plover	2	4/22	2	4/22	2	4/22				
Killdeer	1	3/27	30	4/30	27	4/30				
American Woodcock	1	4/17	20	4/30	20	4/30				
Common Snipe	2	4/8	50	4/18	50	4/30				
Spotted Sandpiper	1	4/25	1	4/25	1	4/30				
Pectoral Sandpiper	6	4/10	6	4/14	6	4/14				
Greater Yellowlegs	1	1/1	7	4/14	14	4/30				
Lesser Yellowlegs	2	4/10	7	4/14	7	4/30				
Dunlin	1	4/10	1	4/10	1	4/11				
Ring-billed Gull	50	1/1	PRESENT THROUGHOUT THE YEAR							
Common Tern	1	4/28	2	4/30	2	4/30				
Black Tern	5	4/28	20	4/30	20	4/30				
Golden Plover	1	4/21	1	4/21	1	4/25				
				(over)						

5RF-4/68

(1)	(2)	(3)	(4)	(5)	(6)
III. <u>Doves and Pigeons:</u>					
Mourning dove	20	1/1	40	4/30	40
White-winged dove					
IV. <u>Predaceous Birds:</u>					
Golden eagle					
<del>XXXX</del> Bald Eagle	1	4/29	1	4/30	1
Horned owl	8	1/1	8	4/30	8
<del>XXXX</del> Barred Owl	2	1/1	1	4/30	1
<del>XXXX</del> Short-eared Owl	6	3/20	13	3/25	2
Crow	5	1/15	10	3/28	8
Red-tailed Hawk	14	1/1	30	3/15	15
Marsh Hawk	1	3/20	15	3/23	5
Osprey	2	4/17	2	4/17	2
Rough-legged Hawk	1	1/1	3	3/18	1
Sparrow Hawk	2	1/1	20	4/15	10
Turkey Vulture	2	3/10	2	3/10	1

#### INSTRUCTIONS

See Wildlife Refuges Manual Section 3321-24, "Wildlife Records".

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- (5) Production: Estimated number of young produced based on observations and actual counts.
- (6) Total: Estimated species days use (average population X no. days present) of refuge during the reporting period.

MIGRATORY BIRDS  
(Other than Waterfowl)

Refuge Montezuma Months of May to August 19 71

(1) Species Common Name	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Production			(6) Total
	Number	Date	Number	Inclu- sive Dates	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Use
<b>I. Water and Marsh Birds:</b>										
Pied-billed Grebe	25	5/1	400	8/31	400	8/31		75	250	
Great Blue Heron	30	5/1	100	8/31	100	8/31				
Common Egret	1	5/1	9	8/31	9	8/31				
Snowy Egret	1	5/1	1	5/1	1	5/5				
Green Heron	10	5/1	100	8/31	100	8/31		25	50	
Blk-crnd. Night Heron	30	5/1	100	8/31	100	8/31	1	25	50	
Least Bittern	1	5/1	100	8/31	100	8/31		25	50	
American Bittern	20	5/1	30	8/31	30	8/31		5	10	
Common Gallinule	10	5/1	100	8/31	100	8/31		20	50	
<b>II. Shorebirds, Gulls and Terns:</b>										
Piping Plover	1	5/1	18	8/8	7	8/31				
Semi-pal. Plover	26	5/15	65	5/23	1	8/31				
Killdeer	27	5/1	300	7/11	10	8/31		50	150	
Golden Plover	1	8/29	1	8/29	1	8/29				
Black-bellied Plover	3	5/1	3	5/1	1	8/31				
American Woodcock	20	5/1	20	7/1	50	8/31		5	150	
Common Snipe	50	5/1	55	8/14	10	8/31		2	5	
Spotted Sandpiper	1	5/1	29	7/5	2	8/31		5	10	
Solitary Sandpiper	1	5/1	3	7/14	1	8/1				
Greater Yellowlegs	14	5/1	12	8/28	8	8/31				
Lesser Yellowlegs	7	5/1	87	7/9	1	8/31				
Ruddy Turnstone	1	5/16	31	5/31	2	8/25				

(over)



	(1)	(2)	(3)	(4)	(5)	(6)
III. <u>Doves and Pigeons:</u>						
Mourning dove		40 5/1	100 8/31	100 8/31	25	25
White-winged dove						
IV. <u>Predaceous Birds:</u>						
Golden eagle						
Duck hawk						
Horned owl		8 5/1	8 5/1	8 5/1	2	4
<del>XXXX</del> Barred Owl		2 5/1	4 5/20	4 8/31	1	2
Raven						
Crow		8 5/1	20 8/31	10 8/31		
Bald Eagle		1 5/1	2 6/20	2 8/31		
Red-tailed Hawk		15 5/1	30 5/20	30 8/31	7	14
Marsh Hawk		5 5/1	5 5/1	1 8/31		
Osprey		2 5/1	2 5/1	1 5/8		
Sparrow Hawk		10 5/1	10 5/1	10 8/31		
Turkey Vulture		1 5/1	1 5/1	1 8/31		

#### INSTRUCTIONS

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- (3) Peak Numbers: Estimated number and inclusive dates when peak population of the species occurred.
- (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 species days use (average population X no. days present) of refuge during the reporting period.

3-1751  
Form N A  
(Aug. 1952)

LABORATORY BIRDS  
(Other than Waterfowl,

Refuge Montezuma

Months of May to August 19 71

(1)	(2)		(3)		(4)		(5)			(6)
Species	First Seen		Peak Concentration		Last Seen		Production			Total
Common Name	Number	Date	Number	Inclu- sive Dates	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Use
<del>XXXX Water and Marsh Birds:</del>										
II. <u>Shorebirds, Gulls and Terns:</u>										
Whimbrel	1	5/19	1	5/19	1	7/25				
White rumped Sandpiper	4	5/23	97	5/30	85	7/31				
Bairds Sandpiper	1	8/4	4	8/25	4	8/25				
Pectoral Sandpiper	4	7/11	12	7/25	3	8/31				
Least Sandpiper	63	5/15	125	7/17	56	8/31				
Dunlin	7	5/1	300	5/22	1	7/1				
Short-billed Dowitcher	5	5/12	66	8/22	44	8/31				
Semi-pal. Sandpiper	10	7/22	247	8/4	30	8/31				
Western Sandpiper	1	8/14	1	8/14	1	8/14				
Hudsonian Godwit	1	8/14	1	8/14	1	8/21				
Stilt Sandpiper	1	7/11	4	7/17	4	7/17				
Wilson's Phalarope	1	7/18	1	7/18	1	7/18				
II. <u>Shorebirds, Gulls and Terns:</u>										
Northern Phalarope	1	7/29	1	7/29	1	7/29				
Sanderling	2	7/14	3	7/16	1	8/22				
Herring Gull	2	5/8	50	5/10	10	8/31				
Ring-billed Gull	100	5/1	100	5/1	100	8/31				
Common Tern	2	5/1	10	7/20	2	8/31		2	4	
Black Tern	20	5/1	300	7/31	10	8/31		100	100	

(over)

NR-1A From May to August 19 71  
5RF-2/71



	(1)	(2)	(3)	(4)	(5)	(6)
III. Doves and Pigeons:						
Mourning dove						
White-winged dove						
IV. Predaceous Birds:						
Golden eagle						
Duck hawk						
Horned owl						
Magpie						
Raven						
Crow						

#### INSTRUCTIONS

See Wildlife Refuges Manual Section 3321-24, "Wildlife Records".

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- (3) Peak Numbers: Estimated number and inclusive dates when peak population of the species occurred.
- (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 species days use (average population X no. days present) of refuge during the reporting period.

3-1751  
Form NF A  
(Aug. 1972)

NONMIGRATORY BIRDS  
(Other than Waterfowl)

Refuge Montezuma

Months of September to December 1971

(1) Species Common Name	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Production			(6) Total
	Number	Date	Number	Inclu- sive Dates	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Use
<b>I. Water and Marsh Birds:</b>										
Pied-billed Grebe	400	9/1	400	9/1	2	12/31				
Great Blue Heron	100	9/1	100	9/1	10	12/31				
Common Egret	9	9/1	9	9/1	1	10/15				
Green Heron	100	9/1	100	9/1	1	10/1				
Blk-crnd. Night Heron	100	9/1	100	9/1	1	12/31				
Least Bittern	100	9/1	100	9/1	1	11/1				
American Bittern	30	9/1	30	9/1	1	12/31				
Common Gallinule	100	9/1	100	9/1	1	12/31				
<b>II. Shorebirds, Gulls and Terns:</b>										
Semi-pal. Plover	9	9/1	27	9/14	1	10/1				
Killdeer	10	9/1	33	9/4	2	11/20				
Golden Plover	1	9/1	1	9/1	1	10/20				
Black-bellied Plover	1	9/1	5	10/20	5	10/31				
American Woodcock	50	9/1	50	9/1	1	12/31				
Common Snipe	10	9/1	10	9/1	1	11/10				
Spotted Sandpiper	2	9/1	4	9/5	1	10/14				
Greater Yellowlegs	8	9/1	14	9/14	1	11/14				
Lesser Yellowlegs	4	9/1	7	10/13	5	10/23				

(over)

NR-1A From September to December 1971  
5RF-2/71

	(1)	(2)	(3)	(4)	(5)	(6)
III. <u>Doves and Pigeons:</u>						
Mourning dove						
White-winged dove						
IV. <u>Predaceous Birds:</u>						
Golden eagle						
Duck hawk						
Horned owl						
Magpie						
Raven						
Crow						

#### INSTRUCTIONS

See Wildlife Refuges Manual Section 3321-24, "Wildlife Records".

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- (3) Peak Numbers: Estimated number and inclusive dates when peak population of the species occurred.
- (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 species days use (average population X no. days present) of refuge during the reporting period.

3-1751  
Form NF A  
(Aug. 1, 72)

LABORATORY BIRDS  
(Other than Waterfowl)

Refuge Montezuma

Months of September to December 19 71

(1)	(2)		(3)		(4)		(5)			(6)
Species	First Seen		Peak Concentration		Last Seen		Production			Total
Common Name	Number	Date	Number	Inclusive Dates	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Use
<del>XXXXXXXXXXXXXXXXXXXX</del>										
II. <u>Shorebirds, Gulls and Terns:</u>										
Pectoral Sandpiper	3	9/1	14	10/14	1	10/27				
Least Sandpiper	56	9/1	56	9/1	1	9/15				
Dunlin	8	10/9	30	10/20	1	11/14				
Short-billed Dowitcher	44	9/1	60	9/4	1	9/15				
Semi-pal. Sandpiper	30	9/1	63	9/14	1	10/1				
Stilt Sandpiper	4	9/5	27	9/11	1	10/1				
Wilson's Phalarope	3	9/2	3	9/2	3	9/2				
Northern Phalarope	3	9/1	3	9/1	1	9/1				
Herring Gull	10	9/1	10	9/1	10	12/31				
Ring-billed Gull	100	9/1	100	9/1	100	12/31				
Common Tern	2	9/1	2	9/1	1	9/15				
Black Tern	10	9/1	10	9/1	1	9/15				
II. <u>Shorebirds, Gulls and Terns:</u>										

(over)

NR-1A From September to December 19 71  
5RF-2/71

	(1)	(2)	(3)	(4)	(5)	(6)
III. <u>Doves and Pigeons:</u>						
Mourning dove	100	9/1	100	9/1	20	12/31
White-winged dove						
IV. <u>Predaceous Birds:</u>						
Golden eagle						
Duck hawk						
Horned owl	8	9/1	8	9/1	8	12/31
<del>XXXXXX</del> Barred Owl	4	9/1	4	9/1	4	12/31
Magpie						12/31
Raven	10	9/1	10	9/1	10	12/31
Crow	2	9/1	2	9/1	2	11/1
Bald Eagle	30	9/1	50	10/15	30	12/31
Red-tailed Hawk	1	10/1	2	10/15	2	12/31
Rough-legged Hawk	1	9/1	10	12/31	5	12/31
Marsh Hawk	1	9/2	1	9/1	1	11/10
Osprey	10	9/1	20	12/31	20	12/31
Sparrow Hawk	1	9/1	1	9/1	1	11/1
Turkey Vulture						

#### INSTRUCTIONS

See Wildlife Refuges Manual Section 3321-24, "Wildlife Records".

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- (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 species days use (average population X no. days present) of refuge during the reporting period.



3-1750b  
Form NR-1B  
(Rev. Nov. 1957)  
5RF-10/64

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
FISH AND WILDLIFE SERVICE  
BUREAU OF SPORT FISHERIES AND WILDLIFE

WATERFOWL UTILIZATION OF REFUGE HABITAT

Refuge Montezuma For 12-month period ending August 31, 1971

Reported by D. M. Mullen Title Assistant Refuge Manager

(1) Area or Unit Designation	(2) Habitat		(3) Use-days	(4) Breeding Population	(5) Production
	Type	Acreage			
South Pools (Unit 17)	Crops	0	Ducks 200,000	400	600
	Upland	80	Geese 50,000	6	15
	Marsh	390	Swans -	-	-
	Water	300	Coots -	-	-
	Total	770	Total 250,000	406	615
-----					
Main Pool	Crops	28	Ducks 2,074,730	1,575	2,450
	Upland	249	Geese 2,556,183	26	45
	Marsh	1,700	Swans 595	-	-
	Water	1,200	Coots 208,538	200	200
	Total	3,177	Total 4,840,046	1,801	2,695
-----					
Spring Pools	Crops	0	Ducks 100,000	150	300
	Upland	245	Geese 50,000	8	15
	Marsh	50	Swans -	-	-
	Water	105	Coots -	-	-
	Total	400	Total 150,000	158	315
-----					
Storage Pool	Crops	0	Ducks 200,000	100	150
	Upland	647	Geese 300,000	10	25
	Marsh	250	Swans -	-	-
	Water	1,090	Coots 50,000	-	-
	Total	1,987	Total 550,000	110	175
-----					
TOTAL	Crops	28	Ducks 2,574,730	2,225	3,500
	Upland	1,221	Geese 2,956,183	50	100
	Marsh	2,390	Swans 595	-	-
	Water	2,695	Coots 258,538	200	200
	Total	6,334	Total 5,790,046	2,475	3,800
-----					
	Crops		Ducks		
	Upland		Geese		
	Marsh		Swans		
	Water		Coots		
	Total		Total		
-----					
	Crops		Ducks		
	Upland		Geese		
	Marsh		Swans		
	Water		Coots		
	Total		Total		

(over)



## INSTRUCTIONS

All tabulated information should be based on the best available techniques for obtaining these data. Estimates having no foundation in fact must be omitted. Refuge grand totals for all categories should be provided in the spaces below the last unit tabulation. Additional forms should be used if the number of units reported upon exceeds the capacity of one page. This report embraces the preceding 12-month period, NOT the fiscal or calendar year, and is submitted annually with the May-August Narrative Report.

- (1) Area or Unit: A geographical unit which, because of size, terrain characteristics, habitat type and current or anticipated management practices, may be considered an entity apart from other areas in the refuge census pattern. The combined estimated acreages of all units should equal the total refuge area. A detailed map and accompanying verbal description of the habitat types of each unit should be forwarded with the initial report for each refuge, and thereafter need only be submitted to report changes in unit boundaries or their descriptions.
- (2) Habitat: Crops include all cultivated croplands such as cereals and green forage, planted food patches and agricultural row crops; upland is all uncultivated terrain lying above the plant communities requiring seasonal submergence or a completely saturated soil condition a part of each year, and includes lands whose temporary flooding facilitates use of non-aquatic type foods; marsh extends from the upland community to, but not including, the water type and consists of the relatively stable marginal or shallow-growing emergent vegetation type, including wet meadow and deep marsh; and in the water category are all other water areas inundated most or all of the growing season and extending from the deeper edge of the marsh zone to strictly open-water, embracing such habitat as shallow playa lakes, deep lakes and reservoirs, true shrub and tree swamps, open flowing water and maritime bays, sounds and estuaries. Acreage estimates for all four types should be computed and kept as accurate as possible through reference to available maps supplemented by periodic field observations. The sum of these estimates should equal the area of the entire unit.
- (3) Use-days: Use-days is computed by multiplying weekly waterfowl population figures by seven, and should agree with information reported on Form NR-1.
- (4) Breeding Population: An estimate of the total breeding population of each category of birds for each area or unit.
- (5) Production: Estimated total number of young raised to flight age.

3-70c  
Form NR-1C  
(Sept. 1960)

WATERFOWL HUNTER KILL SURVEY

Refuge Montezuma

Year 19 71

(1) Weeks of Hunting	(2) No. Hunters Checked	(3) Hunter Hours	(4) Waterfowl Species	(5) No. Bagged	(6) Crippling Loss	(7) Total Kill	(8) Est. No. Hunters	(9) Est. Total Kill
6	1,059	4,236	Mallard-----245 Canada Goose-----93 Black Duck-----76 Green-winged Teal-----69 Wood Duck-----41 Blue-winged Teal-----34 Shoveler-----21 American Widgeon-----20 Gadwall-----11 Pintail-----8 Coot-----6 Hooded Merganser-----6 Ringneck-----4 Ruddy Duck-----2 Scaup-----2 Redhead-----1 Canvasback-----1 Old-squaw-----1 American Merganser-----1	642	254	896	1,059	896
TOTALS:	1,059	4,236		642	254	896	1,059	896

Controlled hunt by permit only from refuge blinds.  
100% of hunters and bags checked.

NR-1C Waterfowl Hunter Kill Survey. 5RF-1/69

# INSTRUCTIONS

- (1) The first week of hunting begins with opening day and ends at the close of hunting 6 days later. Successive weeks follow the same pattern.
- (2) The goal is to survey a minimum of 25 per cent of refuge hunters each week and to record data only from those who have completed their day's hunting. This information should be collected during each day of the week and in each area hunted in relative proportion to the hunter effort expended. When the 25 per cent goal cannot be achieved, particular care should be taken to collect representative data.
- (3) Record the total number of hours the hunters spend hunting on the refuge.
- (4) List waterfowl species in decreasing order of numbers bagged. Sample entry: Mallard (61), Pintail (36), Redhead (16), Gadwall (11), Widgeon (6), Coot (4), Canada Goose (3), Green-winged Teal (1).
- (5) Record total numbers of waterfowl bagged.
- (6) Record total numbers of waterfowl reported knocked down but not recovered.
- (7) Total of Columns 5 and 6.
- (8) Estimate the total number of hunters who hunted on the refuge during the week, including hunters checked (Column 2).
- (9) Kill sample projected to 100 per cent.  $\text{Column 9} = \frac{\text{Column 8}}{\text{Column 2}} \times \text{Column 7}.$

REPORT OF BANDING ON MONTEZUMA REFUGE - CALENDAR YEAR 1971

Geese	Method of Trapping*	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Totals
Canada	DT							55						55
Brant														
Ducks														
Mallard	NITE								1					1
Black														
Gr.-Winged Teal	NITE								2					2
Bl.-Winged Teal	NITE								1					1
Wood Duck														
American Widgeon	NITE								1					1
Eider														
Total Waterfowl								55	5					60
Other														
Mourning Dove														
Woodcock														

Quotas: Canada geese \*\*; Mallard None; Blacks None; Other None

\*Method of Trapping: CAN - Cannon Net; CAGE - Cage; MIST - Mist Net; NITE - Night-lighting; DT - Drive Trap  
 \*\* As many local Canada geese as possible



3-17.7  
Form NR-2  
(April 1946)

# UPLAND GAME BIRDS

Refuge Montezuma

Months of January to April, 19 71

(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 observed Estimated Total	Percentage	Hunting	For Re- stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Ruffed Grouse	Swamp timber and upland brush 1,400 acres	93		50M 50F				15	Marginal habitat limits number using the refuge
Ring-necked Pheasant	Grass, brush, dike, cattail swamp, and cultivated fields 1,500 acres	15		60M 40F				100	

Form NR-2 (3-1752)

January - April, 1971

## 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 methods 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 of 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.



3-1752  
 For. NR-2  
 (April 1946)

U. AND GAME BIRDS

Refuge Montezuma Months of May to August 19 71

(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 observed	Estimated Total	per- centage	Hunting	For Re- stocking	For Research	Esti- mated number using Refuge	Pertinent information not specifically requested. List introductions here.
Ruffed Grouse	Swamp timber and upland brush 1,400 acres	35	2	25	50M 50F				40	Marginal habitat limits number using the refuge
Ring-necked Pheasant	Grass, brush, dikes, cattail swamp, and cultivated fields 1,500 acres	8	10	125	60M 40F				200	

NR-2 - Upland Game Birds - Months of May to August, 1971

5RF-2/71

3-1752  
 For. NR-2  
 (April 1946)

U. AND GAME BIRDS

Refuge Montezuma Months of September to December 19 71

(1) Species  Common Name	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
	Cover types, total acreage of habitat	Acres per Bird	Number broods observed	Estimated Total	per- centage	Hunting	For Re- stocking	For Research	Esti- mated number using Refuge	Pertinent information not specifically requested. List introductions here.
Ruffed Grouse	Swamp timber & upland brush 1,400 acres	40			50M 50F				35	Marginal habitat limits number using the refuge
Ring-necked Pheasant	Grass, brush, dikes, cattail swamp, and cultivated fields 1,500 acres	8			60M 40 F				175	

NR-2 - Upland Game Birds - Months of September to December, 1971

5RF-2/71

Dmm

2-1753  
Form NR-3  
(June 1945)

BIG ME

Refuge Montezuma Calendar Year 1971

(1) Species	(2) Density	(3) Young Produced	(4) Removals			(5) Losses		(6) Intro- ductions	(7) Estimated Total Refuge Population		(8) Sex Ratio	
Common Name	Cover types, Total Acres Habitat	Number	Hunting *	Restocking	Research	Dog Predation	Disease	Road Kills** <del>XXXXXX</del>	Number and Source	Period of Peak Use	As of Dec. 31	M:F
White-tailed Deer	4,100 acres--all of area except actual open water units  * Estimates: Archery 20 Gun Hunting (outside) 5 Crippling Loss 5  ** Estimated road kills	50	30			10		25		300	100	3:5

Remarks:

NR-3  
SRF 1/69

# 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.



3-1754  
Form 4  
(June 1945)

# SMALL MAMMALS

Refuge Montezuma Year ending April 30, 71

(1) Species	(2) Density		(3) Removals					(4) Disposition of Furs					(5)	
Common Name	Cover Types & Total Acreage of Habitat	Acres Per Animal	Hunting	Fur Harvest	Predator Control *	For Re- stocking	For Re- search	Share Trapping			Total Refuge Furs Shipped	Furs Donated	Furs Destroyed	Total Popula- tion
								Permit Number	Trappers Share	Refuge share				
Opossum	Upland, cattail	5			156	**								800
Raccoon	marsh, and swamp	38												100
Red Fox	woods	127			5									30
Grey Fox	3,800 acres	760												5
Striped Skunk		38			5									100
Mink		76												50
Long-tailed Weasel		127												30
Short-tailed Weasel		76												50
Muskrat	Cattail marsh	9							T-7095	1425	475*			3,000
	2,800 acres								T-7094	288	96			
Woodchuck	Upland, cattail	3												1,200
Cottontail Rabbit	marsh, and swamp	15												250
Grey Squirrel	woods	51												75
Red Squirrel	3,800 acres	152												25
* List removals by Predator Animal Hunter														

\* List removals by Predator Animal Hunter

REMARKS: \* includes 7 muskrats retained at refuge for taxidermy purposes.  
\*\* includes 128 young opossum in pouches.

Reported by D.M.Mullen



# INSTRUCTIONS

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

- (1) **SPECIES:** Use correct common name. Example: Striped skunk, spotted skunk, short-tailed weasel, gray squirrel, fox squirrel, white-tailed jackrabbit, etc. (Accepted common names in current use are found in the "Field Book of North American Mammals" by H. E. Anthony and the "Manual of the Vertebrate Animals of the Northeastern United States" by David Starr Jordan.)
  - (2) **DENSITY:** Applies particularly to those species considered in removal programs. Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottom land hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
  - (3) **REMOVALS:** Indicate the total number under each category removed since April 30 of the previous year, including any taken on the refuge by Service Predatory Animal Hunter. Also show any removals not falling under headings listed.
  - (4) **DISPOSITION OF FUR:** On share-trapped furs list the permit number, trapper's share, and refuge share. Indicate the number of pelts shipped to market, including furs taken by Service personnel. Total number of pelts of each species destroyed because of unprime-ness or damaged condition, and furs donated to institutions or other agencies should be shown in the column provided.
  - (5) **TOTAL POPULATION:** Estimated total population of each species reported on as of April 30.
- REMARKS:** Indicate inventory method(s) used, size of sample area(s), introductions, and any other pertinent information not specifically requested.

3- 17  
Form NR-7  
(Rev. June 1960)  
5RF-10/64

NONAGRICULTURAL COLLECTIONS, RECEIPTS, AND PLANTINGS <sup>1/</sup>  
**Montezuma**

71

Refuge \_\_\_\_\_ Year 19 \_\_\_\_\_

Species	Collections and Receipts (Seeds, rootstocks, trees, shrubs)						Plantings (Marsh - Aquatic - Upland)						
	Amt. (lbs., bu., etc.)	2/ C or R	Date	Method or Source	Cost	3/ Total Amount on hand	Location of Area Planted	Rate of Seeding or Planting	Area Planted (Acres or Yards of Shoreline)	Amount and Nature of Propagules	Date	Per- cent Sur- vival	Cause of Loss
White Pine							Clark's	5'x5'	1 Acre	1,000	May	50%	Late planting date, poor site preparation
Red Pine							Ridge,	8'x8'	1 "	1,000	6		
Norway Spruce							Hdqtrs.,	6'x6'	1 "	1,000	June		
White Spruce							Subhdqtrs.	6'x6'	1 "	1,000			
Japanese Larch							North	8'x8'	1 "	1,000			
Balsam Fir							Spring	6'x6'	1 "	1,000			
Crabapple							Pool	16'x16'	.2 "	100			
Tatarian Honeysuckle								16'x16'	.2 "	100			
Autumn Olive								16'x16'	.2 "	100			
Highbush Cranberry								16'x16'	.2 "	200			
Bittersweet								16'x16'	.2 "	100			

- 1/ Report agronomic farm crops on Form NR-8  
2/ C = Collections; R = Receipts  
3/ Use "S" to denote surplus

Total acreage planted:

Marsh and aquatic 4  
Hedgerows, cover patches 3  
Food strips, food patches \_\_\_\_\_  
Forest Plantings \_\_\_\_\_

Trees and shrubs planted as mixture to provide cover  
and food patches. Growth of Japanese Larch was excellent, with  
some trees adding nearly 2 feet of leader growth.



3-1758  
 Fo. NR-8  
 (Rev. Jan. 1956)  
 5RF-10/64

Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge Montezuma County Seneca State New York

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				
Winter Wheat					53	10 Tons	53	Winter Wheat (cover, browse)	53
Oats					8	225 Bu.	8	Oats (cover, browse)	8
Buckwheat					25	100 Bu.	25		
								Fallow Ag. Land	142

No. of Permittees: Agricultural Operations 0 Haying Operations 0 Grazing Operations 2

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING	Number Animals	AUM'S	Cash Revenue	ACREAGE
				1. Cattle	78	315	360.00	360
				2. Other				
				1. Total Refuge Acreage Under Cultivation				86
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.

3-1979 (NR-12)  
(9/63)

Bureau of Sport Fisheries and Wildlife

Refuge

Montezuma

ANNUAL REPORT OF PESTICIDE APPLICATION

Proposal Number

Reporting Year

INSTRUCTIONS: Wildlife Refuges Manual, secs. 3252d, 3394b and 3395

71-1

1971

Dates of Applica- tion	List of Target Pests(s)	Location of Area Treated	Total Acres Treated	Chemical(s) Used	Total Amount of Chemical Applied	Application Rate	Carrier and Rate	Method of Applica- tion
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
None								

10. Summary of results (continue on reverse side, if necessary)



3-1979 (NR-12)  
(9/63)

Bureau of Sport Fisheries and Wildlife

Refuge

Montezuma

ANNUAL REPORT OF PESTICIDE APPLICATION

INSTRUCTIONS: Wildlife Refuges Manual, secs. 3252d, 3394b and 3395

Proposal Number

Reporting Year

71-2

1971

Dates of Applica- tion	List of Target Pests(s)	Location of Area Treated	Total Acres Treated	Chemical(s) Used	Total Amount of Chemical Applied	Application Rate	Carrier and Rate	Method of Applica- tion
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
None								

10. Summary of results (continue on reverse side, if necessary)

3-1979 (NR-12)  
(9/63)

Bureau of Sport Fisheries and Wildlife

Refuge

Montezuma

ANNUAL REPORT OF PESTICIDE APPLICATION

INSTRUCTIONS: Wildlife Refuges Manual, secs. 3252d, 3394b and 3395

Proposal Number

71-3

Reporting Year

1971

Dates of Applica- tion	List of Target Pests(s)	Location of Area Treated	Total Acres Treated	Chemical(s) Used	Total Amount of Chemical Applied	Application Rate	Carrier and Rate	Method of Applica- tion
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
None								

10. Summary of results (continue on reverse side, if necessary)

3-1979 (NR-12)  
(9/63)

Bureau of Sport Fisheries and Wildlife

Refuge

Montezuma

ANNUAL REPORT OF PESTICIDE APPLICATION

INSTRUCTIONS: Wildlife Refuges Manual, secs. 3252d, 3394b and 3395

Proposal Number  
71-4

Reporting Year  
1971

Dates of Applica- tion	List of Target Pests(s)	Location of Area Treated	Total Acres Treated	Chemical(s) Used	Total Amount of Chemical Applied	Application Rate	Carrier and Rate	Method of Applica- tion
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
None								

10. Summary of results (continue on reverse side, if necessary)

PHOTOGRAPHS



Refuge Manager Phillips' wife, Ailene, spent considerable time in planting shrubs and flowers around the refuge headquarters. Many people commented on how pretty the refuge looked with extra effort and a personal touch!



Linda Kipp



Buck Tschache



Doug Mullen



Marty Phillips



Ken Magargel

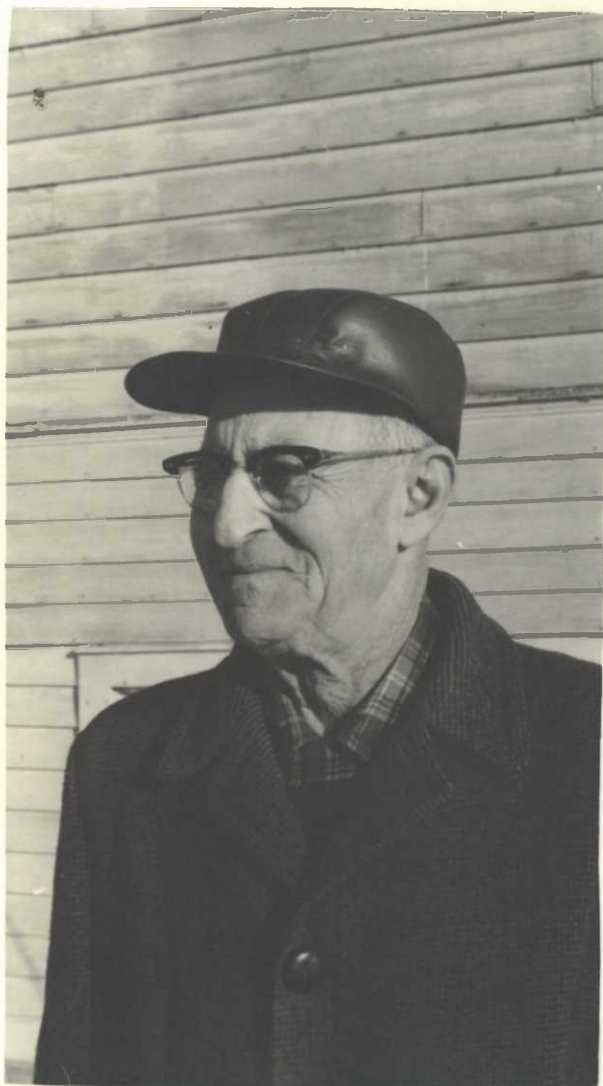


Vern Dewey



Judy Didona





John Salerno



Jim Mosher



Tim Scharett



Headquarters after the March 3 and 4 snow. Snowfall for the winter was 123 inches, 63 inches above normal. This is a naturally occurring drift, and was not "stacked" for the picture.



Heavy snow drifting over the Display Pool fence allowed "Dumb-Dumb" free access to our bird feeder.





Adverse winter conditions tripled our wintering deer herd and with the first arrival of spring, they could be seen in large numbers on adjacent farm land.



The stretch of U.S. 5 & 20 passing through the refuge continued to be the most dangerous segment in New York State. Pictured is one of the many accidents that occurred.





Deep snow allowed dogs easy access to the Display Pool. Our 6-year old blind doe was attacked and died three days later from gaseous gangrene.



A necropsy examination revealed that she was carrying three well-developed fawns.





"Dumb-Dumb", the blind doe's penmate, was not injured during the attack but was rather confused by it all.



A replacement for the blind doe was acquired from the State Police in June. Manager Phillips' wife, Ailene, raised the fawn until it could be liberated in the pen.





Spring of 1971 brought a one in twenty year flood on the New York State Barge Canal and Clyde River. Our pit toilets at the fishing area were thoroughly cleaned out.



The spring flood overtopped the Storage Pool and May's Point Pool dikes and reversed flow on the Main Pool water control structure. Damage was not severe but carp and bullheads were reintroduced into nearly all pools.



The Eastman Kodak photo. Imagine this photo in color, with a moon superimposed top left of center, and enlarged to 60 feet long by 18 feet high. Impossible? No. Expensive? Yes! Such a photo was developed and displayed in Grand Central Station, New York City.





Refuge Manager Phillips presented retired Assistant Refuge Supervisor Radway (far left) a copy of the Eastman Kodak goose photograph. Also pictured are Deputy Regional Director William Spaulding and his wife. (Photo by Ed Moses)



Heavy public use accompanied the arrival of spring causing traffic jams at the headquarters area. The tour route road could not be opened because of a heavy mantle of snow.





Bank fishing in designated fishing areas has continued to increase and provide recreation. We are within a reasonable distance from town so that youngsters are able to come out on their own to fish.



Cub Scout Pack 52 of Elbridge, New York volunteered for a Johnny Horizon Cleanup Campaign on the refuge fishing areas.





The Sea Explorer Scout Post of Auburn erected 33 waterfowl nesting boxes under our supervision.



Harry Greer (second from left) and his conservation class from Auburn Community College planted 5,000 trees and 500 shrubs for wildlife food and cover.

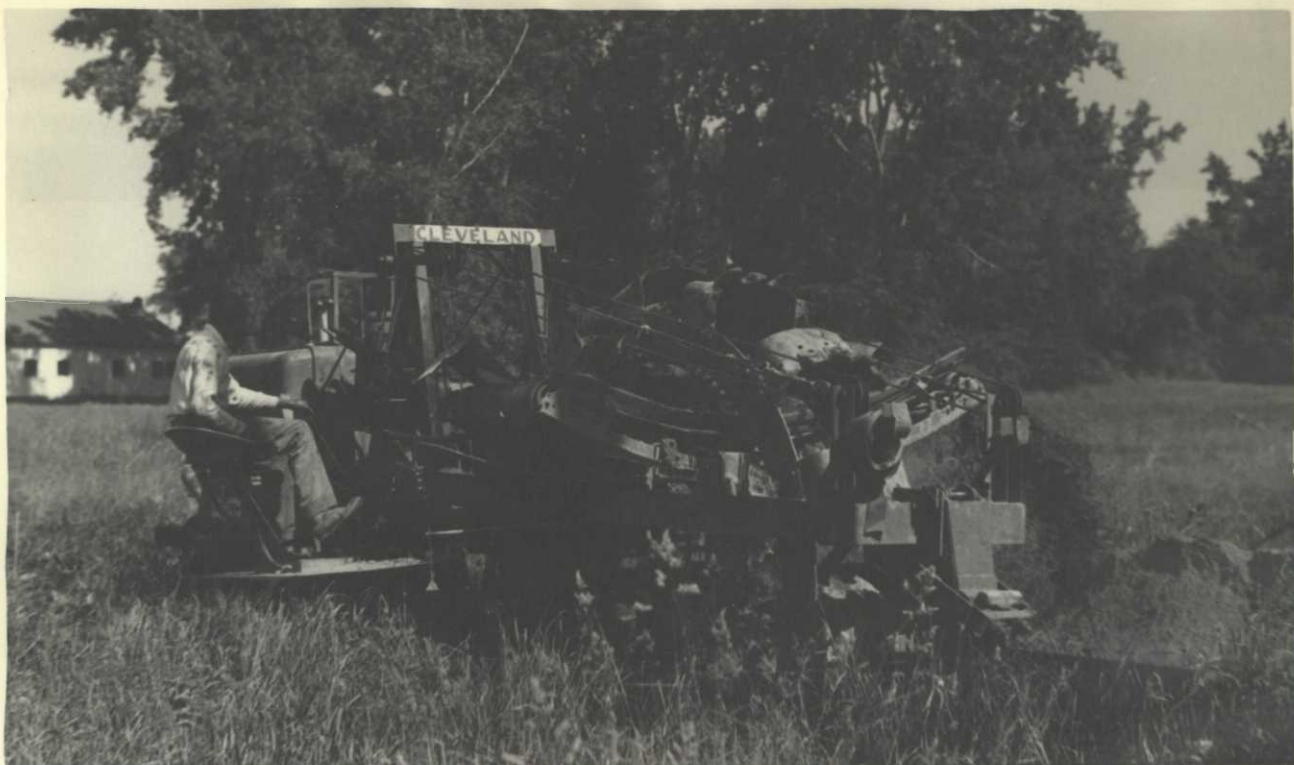


The 1971 Youth Conservation Corps Enrollees and alternates---a good cross section of average youths 14 - 18.





A new pipeline rectifier was installed under permit by Mobil in Field No. 8 near headquarters. It was buried deep enough so as not to be a hazard to our agricultural activities.



We contracted locally to have the 1,700 feet of ditch dug for \$250 for our underground electric transmission lines at headquarters. After a year the new lines are not hooked up yet due to the difficulties of coordinating electricians, underwriter-inspector, two pipeline companies, New York State Electric and Gas Company, and our own efforts.



We assisted the University of Buffalo Medical School in netting several barrels of carp for use in medical research. Believe it or not, this was only one of several requests. Unfortunately, the ones netted were the ones trying to get into the pools, not the ones already in.





Assistant Manager Tschache assisted Refuge Manager Phillips in providing lectures about wildlife for the sixth grade County Conservation Field Day at Sampson State Park. Live animal exhibits and color photographs supplemented fifteen 10-minute programs given to small groups of the 675 participants.



The refuge provided manned displays at both the Seneca County and Cayuga County (pictured) Scout-O-Rama's that occurred on the same day in May. 7,000 people observed these displays.





A result of improving woodcock nesting habitat. Even young woodcock orphaned by roadkills were brought in to us by the public.



Seasonal Maintenance Worker John Salerno demonstrated our new 14 h.p. Allis Chalmers garden tractor for the staff (48" cut lawn mower; 42" snow blower). (Photo by Vern Dewey)





Among the many "wildlife babies" which were re-manded to our custody there was a family of woodchucks. There is a great deal of educational value in acquainting children with wildlife through personal experience.



Reforested evergreens have provided nesting habitat for passerines such as the cedar wax wing.





Our black-crowned night heron population must feel harassed. Through water management these birds have been forced to move their rookery three times within the last three years. Production has remained excellent.



Refuge coot production provides a great deal of wildlife observation along the tour route. Good parents but too dumb to be frightened.





----During



After



----Production

Summer drawdown of the Storage Pool resulted in a spectacular growth of smartweed, bulrush, and cattail over nearly 1,000 acres. (Photos by Doug Mullen)



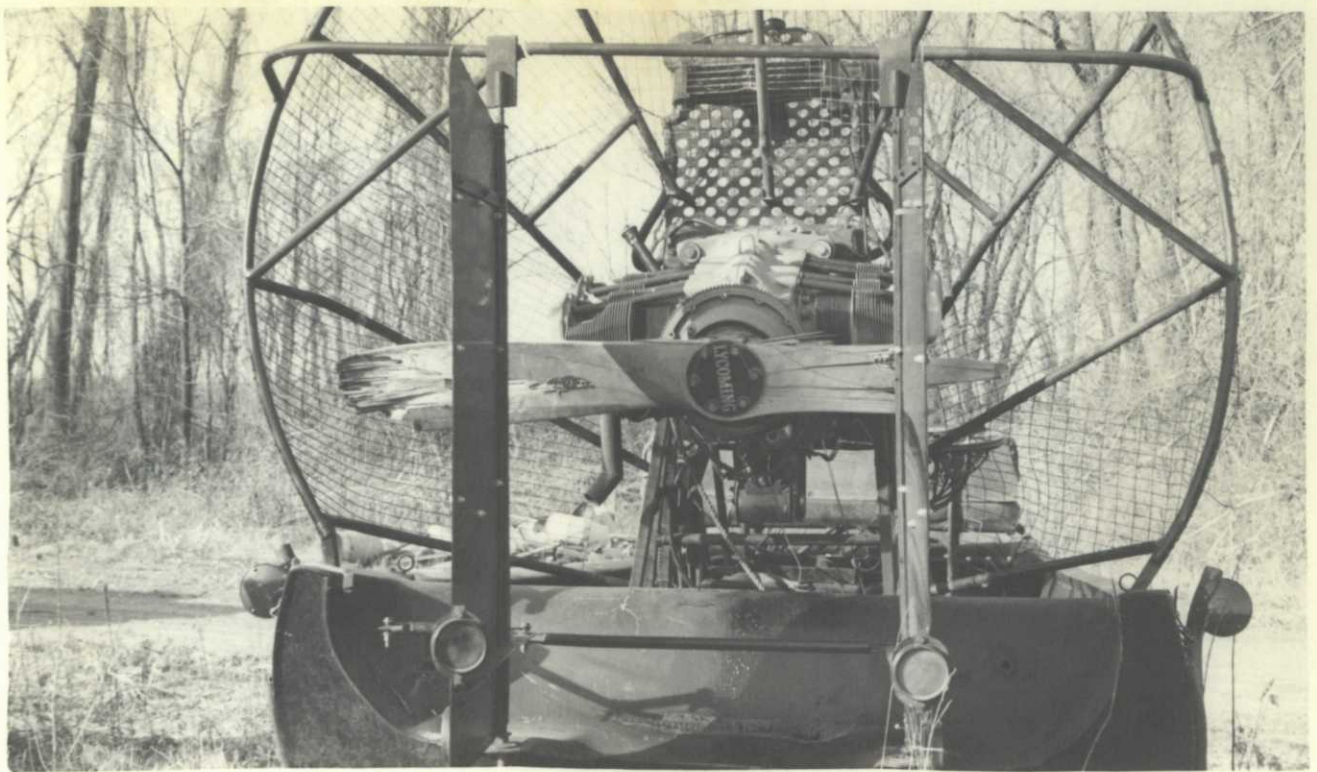


The foot trail along the Storage Pool dike was enhanced by interesting plants. Among them the cardinal flower was the most spectacular.



The 1965 "Aircat" airboat had the audacity to fail us on the Canadian waterfowl banding assignment in New Brunswick! A rebuilt engine had been installed and the hull and trailer rebuilt but the engine mount and frame broke from metal fatigue. Note the angle of engine, guard, broken lights, etc.





When the frame and mount broke the engine dropped 6 inches, in turn causing the propeller to strike the boat hull and fragment. In turn the extreme vibration broke the exhaust pipes and alternator. These were struck by the propeller and thrown out through the guard.



A bowhunter's broadhead arrow was shot into our new sign on the South Spring Pool--another first. Since the sign is near the highway right-of-way, we attributed it to a luckless bowhunter and affluent vandal.





Field No. 7 was reclaimed and the drainage ditch was cleared, resloped, plugged, and reseeded to provide access for goose brood use. (Photos by Vern Dewey)





Polyphemus Moth



Moulting Cecropia Larva

Refuge visitors were delighted with the many species of insects found on the refuge. Monarch butterflies, polyphemus moths, and cecropia moths were numerous.



Cecropia Larva



Inclement weather occurred on the Field Day for the Young Waterfowler's Training Program, but there was still a good turnout of participants.





The second Annual Sanctioned Retriever Trial was held in August by the Finger Lakes Retriever Club. The group hopes to hold a licensed trial next year.





Assistant Manager Kipp assisted in operating the waterfowl check station for our managed hunting program. An effort was made to educate hunters in identification of species and sex (note specimens on counter).



The refuge continued with environmental projects begun during our YCC Program. All glass from the office and both residences was taken to a nearby collection station for recycling.

YOUTH CONSERVATION CORPS PROGRAM

PHOTOGRAPHS





With 20 enrollees and 4 supervisors, more than our normal complement staff, our site preparation for YCC required installation of a toilet (chemical type-foreground) and a washup sink in the shop.



Enrollees assisted in preparation of the facilities they were to use, including painting the new restroom in the shop.





One of the major projects was to paint the exterior of refuge buildings. Pictured is the public contact station. New routed signs were made by the Iroquois Refuge Narcotics Rehabilitation Center and were stained and erected by enrollees.



All work had to be meaningful to the normal refuge program and the enrollee. No power equipment could be used by enrollees but they enjoyed being outdoors on projects like painting stain and preservative on the White Brook Spillway catwalk.





A surplus Job Corps general purpose large military tent was supplied for use by YCC. The enrollees assisted in installing a floor platform and erecting it.



The rope and canvas were rotten. Even though erected properly, checked, and approved by local experienced military personnel it blew down countless times. Because it was unreliable it was never utilized to any extent. The newly completed conservation education room was used as a base of operations.





Enrollees were of great assistance with nest searches. Research is conducted by contract in the swamp timber and green timber impoundments by the Cooperative Wildlife Research Unit, Cornell University.



One of the 6 conservation education field trips was to Sapsucker Woods, a part of the Cornell University Laboratory of Ornithology, Ithaca, New York. They were provided a conducted tour of the boardwalk-nature trail, the laboratory, and grounds.





The interior of the cement block waterfowl check station was improved by installation of a cellotex ceiling and painting walls.



22 replacement hunting blinds were constructed for our waterfowl hunting program.



One of the biggest projects was replacement of the Display Pool fence. Enrollees gained experience and knowledge working not only with each other and their Group Leaders but with temporary and permanent refuge staff.



Because our two doe deer were in the pen the old fence was left in place until completion of the new one. "Dumb-Dumb" still managed to escape but was captured and returned from 8 miles northeast of the refuge. She is so tame she entered a farmer's house!





Brushing some dikes and  
ditches was a good project.  
Group Leader Bob Adams  
(Head Football Coach,  
Auburn High School) operated  
the chain saw on the biggest  
growth and enrollees dragged  
and piled.



Enrollees used axes, brush hooks, mattocks, and crosscut  
saws. Boots with hard soles and box toes, hardhats, and  
gloves were required for most work projects. There were  
no reportable accidents during the 8-week period (Amen!)





Seven of the twenty enrollees were girls. They worked well in the program and benefited from it as much or more than the boys. In some cases more because they had never been exposed to conservation of natural resources and strenuous outdoors work.





This is what it was all about. It appears that all the enrollees completed the program with a more serious and thoughtful attitude about ecology, their environment, and the remaining heritage of natural resources.