BRANCH OF WILDLIFE REFUGES NARRATIVE REPORTS

MR. SALYER _____ MISS BAUM _____

MR. CRAWFORD _____

Operations ✓

MR. REGAN _____ MR. DuMONT _____

Land Management

MR. ACKERKNECHT _____ DR. MORLEY _____

Habitat Improvement

MR. BANKO WRB MR. STILES W. B. S.

MR. KUBICHEK _____

Stenographers

_____ _____

REFUGE MONTEZUMA PERIOD Sept - Dec 1958

NARRATIVE REPORT

MONTEZUMA NATIONAL WILDLIFE REFUGE

September - December, 1958

PERSONNEL

Permanent Employees

John S. Morse . . . . . Refuge Manager

J. C. Appel . . . . . Assistant Refuge Manager

Vernon A. Dewey . . . . . Refuge Clerk

J. Kenneth Magargel . . . . . Refuge Assistant

Wage Board Employees

Bower E. Newell . . . . . Maintenance Man

Louis B. Ryan . . . . . Tractor Operator

John B. Salerno . . . . . Operator General

Albert H. Schultz. . . . . Carpenter

DEPARTMENT OF THE INTERIOR, FISH AND WILDLIFE SERVICE

Bureau of Sport Fisheries and Wildlife

Montezuma National Wildlife Refuge

Seneca Falls, New York

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NARRATIVE REPORT

MONTEZUMA NATIONAL WILDLIFE REFUGE

September - December, 1958

I. GENERAL

A. Weather Conditions

The following summary of weather conditions is taken from the records of the New York State Barge Canal's May's Point Lock which is located near the center of the refuge. Since only periodic temperature readings were taken from an ordinary thermometer, there were undoubtedly some extremes greater than those recorded.

	Snowfall		Precipitation		Max.	Min.
	1958	Normal*	1958	Normal**	Temp	Temp
Sept.	0.00	0.00	5.61	3.24	82	46
Oct.	0.00	0.25	4.56	3.13	75	24
Nov.	13.00	3.83	3.50	2.74	82	11
Dec.	10.50	5.64	0.90	2.33	66	-2
Total	23.50	9.72	14.57	11.44	Extremes 82	-2

* 16 year average ** 25 year average

Two facts are outstanding concerning the weather conditions during the reporting period. First, September, October and November had greater than normal rainfall, while December was deficient in precipitation and most of it in the form of snow. Second, winter conditions set in the last week in November and continued throughout the entire month of December. During that period, snowfall was considerably above normal and temperatures were below normal. This past December was reported as the second coldest December on record for the Syracuse area.

B. Habitat Conditions

1. Water

As the result of the excessive rainfall during the first three months of the period, spillways had to be frequently checked in order to be sure that enough water was being drawned off to keep the water levels from being so high that damage from wave action would result to our dikes. With these precautions, we were able to keep our pools at approximatelly full pool levels. Following ice formation during the last week of November, the Main

Pool and the Storage Pool were drawned down several inches in order to prevent ice damage to our dikes.

2. Food and Cover

Until snow fell during the last week in November, this refuge had adequate supplies of food. Widespread use of our winter grain fields were made by Canada geese. Geese were seen frequently grazing on Fields No. 5, 6, 8 and 19, and occasionally on Fields 10 and 18. For a week after the first snowstorm, geese continued to use Field No. 5, even though they had to feed down through about 8 inches of snow. Geese were also seen feeding in the sections of Field No. 8 that were planted to soybeans and buckwheat. At least 2000 Mallards and Black Ducks regularly fed on Japanese millet and buckwheat in our "paddy" field No. 14a. Dabbling ducks were also seen frequently feeding on Field No. 8.

With the coming of snow, the refuge fields ceased to be a source of food for waterfowl. At the same time, the refuge pools froze over, elimating dquatics as a source of food. Deer and pheasants continued to use the refuge crop fields throughout the period, as wind blew off the snow in some areas. Conditions are such, however, that additional snow will probably eliminate the refuge fields as a source of food for all wildlife. Our swamp woods should provide sufficient browse to winter our present deer population. The few pheasants athat survived last year's severe winter are now concentrated in the vicinity of headquarters, so they will probably be able to survive on corn stillen from our captive goose flock.

As regards cover, this refuge does not lack for winter cover for all upland wildlife. Brood cover for waterfowl, however, is being reduced on the eastern sections of our Main Pool by muskrat depredations. Continued heavy trapping pressure will have to be used on this segment of our muskrat population.

II. WILDLIFE

A. Migratory Birds

1. Waterfowl

We are happy to report that our fall waterfowl usage showed an upswing from the low point reached in 1957. Peaks were still, however, below those of 1956. The following chart shows comparative peak numbers and days use figures for the last three falls:

	1956		1957		1958	
	Geese	Ducks	Geese	Ducks	Geese	Ducks
Peak No.	500	38,750	166	10,675	400	21,100
Days Use	21,665	1,863,204	5,677	815,399	19,530	926,986

Our increase in duck usage was caused by an increase in the number of American Widgeon (Baldpate), peaking at 15,000 compared to 4,000 a year ago, using the refuge. All other species of dabbling ducks using the area were down in numbers.

Canada Goose usage of the refuge was widespread. One group predominately used the west section of the refuge while another group was usually found in the vicinity of headquarters. This latter group, numbering nearly 300 birds, visited the Display Pool daily to steal corn being fed our captive flock. This was the first time that the Display Pool has been used extensively by migrating geese and this usage resulted in a type of violation new to the refuge - the shooting of wild birds preparing to land in this area by hunters just outside of the refuge boundary. In the future it is planned to move all captive birds out of the Display Pool to an area more remote from the refuge boundary prior to the start of the waterfowl season.

2. Other Waterfowl

Random observations indicated no significant changes or unusual records for this group of birds. The early start of severe winter weather forced the migration of all but grebes from the refuge by the first of December.

3. Shorebirds, Gulls and Terns

Due to high water levels, very little use of the refuge was made by shorebirds during the fall migration. With the advent of winter, the Ring-billed Gulls became scarce and their place was taken by tthe larger Herring Gull.

4. Doves

There was no apparent change in the numbers of Mourning Doves observed this fall over last year.

B. Upland Game Birds

Population of our only important upland game bird, the ring-necked pheasant, are at a low ebb. Observations indicate that not more than 50 of these birds exist on the refuge, less than one-fourth of the estimated population last year. The decline in pheasant numbers can probably be attributed to last years severe winter followed by an extremely cold and wet breeding season.

C. Big Game Animals

The white-tailed deer population on the refuge appears to be

in good condition. Twin fawns are common and the fawns taken during the archery hunt were of good size. The complete absence of yearling does in the kill may be an indication of a fawn die-off during last years severe winter or it may be just coincidence. The present size of the refuge herd, about one hundred animals, is not antagonistic to other refuge purposes. Annual mortality seems to have offset the annual fawn crop and if this condition can be maintained, by future archery hunts, no problem is expected to occur with these animals.

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

1. Fur Animals

The annual muskrat house count was conducted in December. The estimated population based on the house count was twenty one thousand seven hundred animals, up twenty seven hundred animals over last years estimate. Heavy trapping schedules were set up and, because of a permissive change in New York State laws, trapping was arranged to begin January 1, two weeks earlier than last year.

2. Predators

Fall predator trapping by local trappers indicates that fox and opossum populations are down slightly, racoons are twice as plentiful as last year, while skunk, mink and weasel remain about the same. We have had no predator problems with our captive geese during this period.

3. Rodents

Rodent populations appear to be at a low level.

4. Other Mammals

Cottontail rabbit populations are thin over the entire area.

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

Predator pressure from this group of birds appeared to be insignificant during the reporting period. Crows and Rough-legged hawks are definitely down from last year. Red-tailed hawks may be down slightly although they are still our most common large hawk. Horned owl numbers remain about the same. Our resident pair of eagles were last observed in early December.

F. Other Birds (continued on following page)

F. Other Birds

The fall small bird migration was disappointing. Many species appeared down in numbers.

G. Fish

An early freezeup and farily heavy continuous snow cover have set up conditions for a good winter die off of fish in our marshes. In mid-December small carp, bullheads and bluegills were noticed heavily concentrated in a little strip of open water below the control structure of the connecting spillway, many of them concentrated at the surface gulping for air.

H. Reptiles

Nothing of interest to report under this category during this reporting period.

I. Diseases

There was no evidence of disease during this reporting period.

III. REFUGE DEVELOPMENT AND MAINTENANCE

A. Physical Development

1. Project 6212b

a. Repair of main pool dike.

Three hundred and thirty one loads of dirt were hauled and spread on the main pool dike, mostly north of the Thruway. Six loads of coarse gravel were hauled and spread on the Seneca spillway. Wave breaking logs were placed along the exposed banks of the main pool dike south of the Thruway. Thisproject is 80% complete.

b. The diesel fuel tank was reinstalled with an electric pump in the fuel shelter.

c. The temporary fence was extended in the Display pool to provide more room for the young geese.

d. The base radio installation was changed to improve communication with Oak Orchard.

e. A wood-dirt cofferdam was built across the ditch

draining the Spring pool under route 414. This appears to be maintaining the water level.

f. The Whipple tract north of the Clyde river was surveyed for acquisition. Refuge personnel assisted in the survey.

2. Project 6117 - Soil and Moisture

a. Seventy five acres were seeded to winter grains. Thirty eight acres to rye and thirty seven acres to mixed wheat and rye.

b. The south portion of the goose lot was seeded to grass.

c. It was arranged with the Seneca County Agricultural Stabalization and Conservation Committee for our cooperators to receive wheat allotments based on the combined acreage of their home farms and the acreage which they farm on the refuge. Wheat is the only crop on the refuge to which acreage restrictions will apply.

3. Miscellaneous

The following equipment was obtained or handled during this period:

a. A front shovel, back hoe and fairlead for the Bucyrus-Erie dragline.

b. A new Dodge dump truck.

c. Two truck loads of cedar posts, one for Oak Orchard.

d. A new Dodge Pickup for Oak Orchard.

e. A new Ford 1½ ton stake rack dump truck for Oak Orchard.

f. Two truck loads of ear corn from the Bombay Hook refuge.

g. A generator and two jeeps for Brigantine, a load of steel posts, a sandblaster, flat and angle steel, 500 cubic feet of fencing, a 1½ ton stake rack truck for Oak Orchard, and a van load of miscellaneous equipment were obtained from military surplus.

B. Plantings

1. Aquatics and Marsh Plants

None during this reporting period.

2. Trees and Shrubs

Six Norway spruce trees, three feet tall, were planted around both headquarters and sub-headquarters to replace earlier plantings that died.

3. Upland Herbaceous Plants

None this reporting period.

4. Cultivated Crops

a. Planted by Refuge Personnel

Thirty-two acres of rye were seeded in late September. We had planned to plant only 20 acres but seeded an additional 12 acres to replace wheat which our cooperators had planned to plant but were being held up on by negotiations with the ASC on quotas for crops grown on the refuge.

We harvested 165 bushels of buckwheat from 19 acres. We left an additional 30 acres of buckwheat and 6 acres of Japanese Millet unharvested for the use of waterfowl and other wildlife.

b. Planted by Cooperators

In November, after negotiations with the ASC had been successfully completed, our cooperators seeded 53 acres to wheat. This brought the total acreage of waterfowl browsing crops, planted by both refuge personnel and cooperators, to 160 acres.

Wet conditions at harvest time resulted in a poor harvest of red kidney beans by our cooperators.

C. Collections and Receipts

1. Seed or Other Propagules

None during this reporting period.

2. Specimens

None during this reporting period.

D. Control fo Vegetation

A tabulation of weed control operations for the calendar year follows on page 8.

ESTIMATED KILL 1957 SPRAYING OPERATIONS

PLANT SPECIES	ACREAGE	CONTROL DATES	CHEMICAL & Diluent	RATE OF APPLICATION	METHOD OF APPLICATION	PER CENT OF KILL
Purple Loosestrife (Lythrum Salicaria)	.5	7-26	Ammate X 60lb/100 gal H_2O, 4 oz. detergent	32 lb/acre	Brodjet, on boat fine nozzle	75%
Purple Loosestrife (Lythrum Salicaria)	6.05	8-1 8-16 8-19 8-20 8-22 8-29	Ammate X 60 lb/100 gal H_2O, 4 oz. detergent	45 lb/acre	Brodjet, on power wagon	75%
Purple Loosestrife (Lythrum Salicaria)	1.0	9-11	Ammate X 60 lb/100 gal H_2O, 4 oz. detergent	45 lbs/acre	Brodjet, on power wagon	No Data
Purple Loosestrife (Lythrum Salicaria)	.15	8-2 8-8	Ammate X 60 lb/100 gal H_2O, 4 oz. detergent	220 lbs/acre	Indian Pump	75%
Cattails (Thpha spp.)	.10	8-8	Dowpon (dalapon)	52.4 lb acre	Indian Pump	100%
Burdock & other broadleaf plants (Arctium lappa)	26.00	8-15 8-16	2,4-D,DuPont's ester,2.5qts/ 100 gal H_2O	.67 lbs acid equiv/acre	Brodjet, on power wagon,roadside elbow	Impossible to check as species involved re-produces heavily from seed
Cottonwood and other woody growth (Populus deltoides)	1.35	8-1 8-19	Ammate X 60 lb/100 gal H_2O, 4 Oz detergent	27 lbs/acre	Brodjet, on power wagon, fine nozzle	Kill in proportion to coverate-estimate kill 75%
Cottonwood & other woody growth (Populus deltoides)	21.7	8-22,28, 29,30 9-5,6,9, 11	Ammate X 60 lb/100 gal H_2O, 4 oz. detergent	47 lb/acre	Brodjet, on power wagon, coarse nozzle	Kill in porportion to coverage. Average kill- 75%

Excellent! This is the kind of reporting we're striving for

N.B.S.

WEED CONTROL OPERATIONS 1958

PLANT SPECIES	ACREAGE	CONTROL DATES	CHEMICAL & DILUTENT	RATE OF APPLICATION	METHOD OF APPLICATION	COST OF MATERIALS	COST OF LABOR	COST OF EQUIPMENT	TOTAL COSTS
Burdock & other borad leaved weeds	7.15	7-10	2,4-D & water	.36 A.E. per acre	Power Wagon, roadside fine jet	$2.87	$23.25	$10.00	$36.12
REMARKS: Full leaf development, pre-flowering stage. Cost per acre: $5.05. Apparent kill 90%									
Burdock & other broad leaved weeds	19.0	7-18	2,4-D & water	.45 A.E. per acre	Power Wagon roadside fine jet	$7.46	$37.20	$16.00	$60.66
REMARKS: Full leaf development, pre-flowered stage. Cost per acre: $3.19. Apparent kill 90%									
Burdock & other broad leaved weeds	7.4	7-21	2,4-D, & water	1.05 A.E. per acre	Power Wagon, Roadside fine jet	$8.70	$37.20	$16.00	$61.90
REMARKS: Full leaf development, pre-flowering stage. Cost per acre: $8.36. Apparent kill 85%									
Burdock & other broad leaved weeds	2.0	7-28	2,4-D & water	1.25 A.E. per acre	Power Wagon Roadside fien jet	$2.82	$9.78	$8.00	$20.00
REMARKS: Full leaf development, pre-flowering stage. Cost per acre: $10.30. Apparent kill 80%									
Burdock & other broad leaved weeds	5.0	8-4	2,4-D & water	3.34 A.E. per acre	Power Wagon, Roadside fine jet	$3.73	$18.60	$6.00	$28.33
REMARKS: Full leaf development, pre-flowering stage. Cost per acre: $5.66. Apparent kill 80%									

WEED CONTROL OPERATIONS 1958

PLANT SPECIES	ACREAGE	CONTROL DATES	CHEMICAL & DILUTENT	R RATE OF APPLICATION	METHOD OF APPLICATION	COST OF MATERIALS	COST OF LABOR	COST OF EQUIPMENT	TOTAL COSTS
Purple Loose-strife(Lythrum Salicaria)	.27	6-20	Ammate & water	60 lb/acre	Indian Pump	$3.75	$11.00	Nothing	$14.75
REMARKS: Full leaf development, pre-flowering stage. Cost per acre: $54.70. Apparent kill 90%									
Purple Loos-strife(Lythrum Salicaria)	2.7	7-1	Ammate & water	60 lb/acre	Idnian Pump	$3.75	$5.33	Nothing	$9.08
REMARKS: Spot spraying. Full leaf development, pre-flowering stage. Cost per acre: $3.36. Apparent kill 90%									
Water Lilies	2.0	7-28	Ammate & water	36 lb/acre	Air Boat & Brodjet	$18.00	$14.80	$6.00	$38.80
REMARKS: Full leaf development, pre-flowering stage. Cost per acre: $19.40. Apparent kill 75%									
Cottonwood (Populus deltoides) & other woody plants	3.0	7-28	Ammate & water	36 lb/acre	Power Wagon & Brodjet	$19.73	$22.20	$10.00	$59.20
REMARKS: Full leaf development, pre-flowering stage. Cost per acre: $19.73. Apparent kill 80%									
Cottonwood (Populous deltoides) & other woody plants	4.3	8-4	Ammate & water	36 lb/acre	Power Wagon & Brodjet	$25.00	$29.60	$8.00	$62.60
REMARKS: Spot spraying. Full leaf development. Cost per acre $14.50. Apparent kill 80%									
Cottonwood (Populous deltoides) & other woody plants	10.0	8-18	Ammate & water	36 lb/acre	Power Wagon & Brodjet	$90.00	$41.00	$18.00	$149.00
REMARKS: Full leaf development, full flower development. Cost per acre $14.90. Apparent kill 80%									

E. Planned Burning

None during this reporting period.

F. Fires

None during this reporting period.

IV. RESOURCE MANAGEMENT

A. Grazing

Our usual six months grazing season ended November 1st. There were no idications of over grazing. In fact Field # 4, temporarily in improved pasture, should have had more cattle on it to adequately harvest the forage produced. Data on the entire grazing season is included on Form NR-8.

B. Haying

None this period.

C. Fur Harvest

Preparations were completed for the start of our muskrat harvest on January 1st. Necessary clearances were obtained from the State Conservation Department. Five trappers were selected and trapping units were assigned. Arrangements were made to employ John Salerno, our usual trapping inspector, for the durations of the trapping season.

D. Timber Removal

One permittee was still operating in the section of the refuge south of highway routes 5-20. Several lumbermen have contacted the Refuge Manager regarding removing timber but, after looking at available timber tracts, have decided against the operations due to either the inaccessibility of the areas or the danger of loosing timber already cut by flooding from the canal or the Clyde River.

E. Commercial Fishing

None to report this period.

F. Other Uses

Two permits are in force for the removal of 1000 bundles of butt flag each from our marshes. At a penny a bundle, the refuge will realize $20.00 from these operations.

V. FIELD INVESTIGATION OR APPLIED RESEARCH

A. Progress Report

1. Cattail Control

Experimental herbicidal work on cattail as carried out by Patuxent Refuge personnel is covered under the May-August report.

2. Blackbird Control

Mr. Brookd Meanly of Patuxent Refuge spent three days studying the blackbird problem and conducting poisoning experiments. He was assisted by James Caslick of Ithaca and George Houghton, a graduate student at Cornell University. Mr. Houghton continued blackbird banding operations on the refuge.

3. Waterfowl Banding

None to report during this period.

4. Muskrats

Arrangements were made with Dr. Maurice Alexander of Syracuse University to continue his research into age and sex phenomina of muskrats during the 1959 trapping season.

VI. PUBLIC RELATIONS

A. Recreational Uses

Wildlife observation, particularly along the main pool dike, continues to be our most important recreational use in terms of numbers of people using the area.

Fishing along the Clyde river and the Seneca barge canal continued during this reporting period but not at anything like the spring rate.

B. Refuge Visitors

ON the following page is a list of the more important visitors during the reporting period.

C. Refuge Participation

1. Showings of the Refuge movie "Montezuma Almanac":

10-11-58 Romulus Central School-100-(Morse)
10-27-58 Lansing Central School- 44-(Morse)
10-27-58 DAR, Seneca Falls Chapter- 23-(Morse)
10-31-58 Holland Patent Central School-57-(Morse)
11-20-58 Fleming Methodist and Baptist Church-70-(Appel)
Boy Scouts - Examine for merit badges-5-(Morse)

2. The following groups toured the area during this reporting period:

10-10-58 Faculties Association of the University of the State of New York-5
10-21-58 Cornell Campus Club Bird Study Group-13
11-12-58 Cub Scout Den 4 - Pack 73 - Mrs. Vincent Buffone-5
New York Conservation Caravan-15

D. Hunting

Two any-deer archery hunts were conducted on the refuge to harvest surplus deer. During the first hunt on November 17, 765 archers checked in twenty eight deer. During the second hunt December 2, when any deer were legal for the gun outside the refuge, 114 archers killed only one deer but were responsible for the kill of about twenty more that were taken with the gun along the refuge borders. It is estimated that the combined harvest of both archery hunts plus other mortality offset the annual fawn crop.

E. Violations

Wild geese decoyed, by our captive flock, proved irresistable to hunters who began shooting at them from the canal bank on the other side of our boundary. On the advice of Game Management Agent Buckalew, two hunters were picked up and their kill of two birds impounded as evidence. The two hunters settled under a Civil Compromise and paid fines of ten dollars plus two dollars and fifty cents costs, each. The geese, which spoiled in storage, were destroyed on the refuge.

DATE	NAME	ADDRESS OR ORGANIZATION	PURPOSE OF VISIT
9-3	Brooke Meanley	U.S.F.W.S. Laurel, Maryland	Blackbird control research
9-#	Jim Caslick	U.S.F.W.S. Ithaca, N. Y.	Same
9-16	P. W. Swanson	Ontario Dept. of Lands & Forests, Lindsay	Observe wildlife Mgt. techniques
9-16	Q. F. Hess	Same	Same
9-16	W. Bittle	Same	Same
9-16	D. Gawley	Same	Same
9-16	B. Dawson	Same	Same
9-16	E. Ferguson	Same	Same
9-17	B. L. Hudley, Jr.	American Cyanamid Company	Observe results of spray operation
9-23	A. Studholme	Chief, Division of Wildlife, Boston, Mass.	Courtesy call
9-23	A. F. Miller	Regional Refuge Supervisor, Boston, Mass.	Courtesy call
9-25	Jim Caslick	US.F.W.S. Ithaca, N. Y.	Blackbird control research
10-3	William H. Kelly	N.Y.S. Conservation Dept, Livingston Manor	Carp capture
10-3	Kenneth Stafford	Same	Same
10-6	Dorthy Christensen	Schouevloan 10, Wassenaar, Netherlands	Wildlife observation
10-6	Signe Christensen	Same	Same
10-6	D. E. Gascoyne	Regional Director, Boston, Mass.	Courtesy call
10-10	John S. Genung	Waterloo, N. Y.	Marsh planting information
10-15	A. B. Bretsford	American Cyanamid Company	Discuss spray control program
10-27	Dr. Bill Hamilton	Cornell University	Arrange for predator carcasses
10-27	C. E. Wilbur	Fur buyer, Kings Ferry, New York	With Dr. Hamilton
10-27	Arthur H. Cook	N. Y. S. Conservation Department	Same
11-4	Anis Obeid, M.D.	Aley, Lebanon	Wildlife observation
11-8	William Wadsworth	Syracuse, N. Y.	Captain of archery hunt
11-8	Herman Borgner	Photographer- Syracuse Post Standard	Photograph archery hunt
11-8	Walter Carroll	Reporter-Syracuse Post Standard	Report archery hunt
11-8	Milt Bieber	N.Y.S. Conservation Dept., Syracuse, N.Y.	Age deer killed in archery hunt
11-22	Bill Lindner	Asst. District Game Protector, Rochester, N.Y., N. Y. S. Conservation Dept.	Courtesy call
12-20	William Wadsworth	Syracuse, N. Y.	Captain of archery hunt
12-8	Joseph L. Daigle	U.S.F.W.S., Regional Office	Survey Whipple tract
12-8	Axel Thomson	Juarice of Peace, Seneca Falls, N. Y.	Check on waterfowl laws
12-22	Dr. Maurice Alexander	Syracuse University	Arrange muskrat research
	Donald DeLamarter	N.Y.S. Cons. Dept Law Enforcement	Frequent visits
	Coonrod	Same	Same
	John Buckalew	U.S.G.M. A., Wolcott, N.Y.	Same
	Lawrence S. Smith	Refuge Manager, Oak Orchard Refuge	Same

VII. OTHER ITEMS

Items of Interest

1. J. C. Appel reported for duty Monday, November 3rd as Assistant Refuge Manager. He tackled his new duties with enthusiasm. He is proving a welcome addition to the refuge staff.

2. The compilations of the report reflects the joint efforts of John S. Morse, Refuge Manager and J. C. Appel, Assistant Refuge Manager. Typing and final assembly was done by Vernon A. Dewey, Refuge Clerk.

Respectfully submitted

19 January 1959

John S. Morse

John S. Morse, Refuge Manager

Approved: Arthur Fries 1-21-59

Approved: _____

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

WATERFOWL

REFUGE MONTEZUMA MONTHS OF SEPTEMBER TO DECEMBER, 1958

(1) Species	(2) Weeks of reporting period 1	2	3	4	5	6	7	8	9	10
Swans:										
Whistling										1
Trumpeter										
Geese:										
Canada	12	20	20	22	50	300	350	350	150	285
Cackling										
Brant										
White-fronted										
Snow										
Blue									3	3
Other										
Ducks:										
Mallard	600	600	1000	1000	1000	1000	2000	3000	3000	1200
Black	500	1000	1000	1000	1000	1000	2000	3000	3000	450
Gadwall	100	100	100	100	100	200	200	200	100	100
Baldpate	2 000	4000	4000	10000	12000	15000	15000	10000	5000	1500
Pintail		25	25	100	150	200	1000	1500	500	300
Green-winged teal	150	150	150	150	150	250	500	500	500	1000
Blue-winged teal	300	300	300	100	100					
Cinnamon teal										
Shoveler	10	10	10	20	20	20	50	100	100	50
Wood	450	450	450	450	450	450	200	100	25	25
Redhead	10	10	10	10	10	10	50	50	50	
Ring-necked							50	50	50	
Canvasback										
Scaup										
Goldeneye										
Bufflehead										
Ruddy	10	10	10	10	10	10	20	20		
Other H. Merg.				10	10	10	10	20	50	50
Am. Merg.							20	20	50	50
Coot:	650	650	650	650	700	800	2000	2500	2000	850

Int. Dup. Sec.,
Wash., D. C. 37944

3 -1750a
Cont. NR-1
(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE MONTEZUMA MONTHS OF SEPTEMBER TO DECEMBER, 1958

(1) Species	(2) Weeks of reporting period 11	12	13	14	15	16	17	18	(3) Estimated waterfowl days use	(4) Production Broods seen	Estimated total
Swans:											
Whistling	1								14		
Trumpeter											
Geese:											
Canada	347	392	395	75					19,376		
Cackling											
Brant											
White-fronted											
Snow		5	2						49		
Blue	3	3	3						105		
Other											
Ducks:											
Mallard	1500	1000	200	1	1				119,714		
Black	600	700	400	1	1				109,564		
Gadwall									9100		
Baldpate	3000	1000	100						578,200		
Pintail	500	600							34,300		
Green-winged teal	500	400	100						31,500		
Blue-winged teal									7,700		
Cinnamon teal											
Shoveler	200	500							7,630		
Wood	2								21,364		
Redhead									1,470		
Ring-necked	40	2	2						1,358		
Canvasback	20	6							182		
Scaup	10	8	5						161		
Goldeneye											
Bufflehead	4		4						56		
Ruddy		2			4				742		
Other H. Merg.	40	10	20						1,610		
Am. Merg.	40	25	40	40	40				2,275		
Coot:	1200	400	200		1				92,757		

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans	~~14~~	~~1~~	
Geese	~~10,530~~	~~400~~	
Ducks	~~826,026~~	~~21,100~~	
Coots	~~82,757~~	~~3,500~~	

SUMMARY

Principal feeding areas ~~Storage pool, Black Lakes-Baldpate.~~

~~Winter wheat - geese. Aquatics in and paddy fields near the~~ Main pool - Blacks, Mallards & Pintails.

Principal nesting areas

Reported by ~~J. C. Appel, Assistant Refuge Manager~~

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

(1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.

(2) Weeks of Reporting Period: Estimated average refuge populations.

(3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.

(4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.

(5) Total Days Use: A summary of data recorded under (3).

(6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.

(7) Total Production: A summary of data recorded under (4).

Interior Duplicating Section, Washington, D. C. 37944
1953

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

MIGRATORY BIRDS
(other than waterfowl)

Refuge M O N T E Z U M A Months of September to December 1958

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number Use
I. Water and Marsh Birds:										
Pied-billed Grebe	60	9-1-58	No Record		1	12-28				4,100
Great Blue Heron	150	9-1	No Record		2	12-13				10,200
Green Heron	50	9-1	No Record		1	9-25				800
Common Egret	40	9-1	No Record		1	10-5				1,120
Black-crowned Night Heron	75	9-1	No Record		1	10-11				4,200
Least Bittern*	80	9-1	No Record		1	9-12				800
American Bittern	50	9-1	No Record		1	11-29				1,400
Virginia Rail*	60	9-1	No Record		1	10-1				1,600
Sora Rail*	50	9-1	No Record		1	9-26				800
Common Gallinule	450	9-1	No Record		1	11-8				16,800
* Estimates										
II. Shorebirds, Gulls and Terns:										
Semipalamated Plover	2	10-2	Only Observation		2	10-2				2
Killdeer*	100	9-1	No Record		1	11-18				5,000
Spotted Sandpiper *	50	9-1	No Record		No Record					1,800
Greater Yellowlegs	1	11-8	Only Observation		1	11-8				1
Great Black Backed Gull	1	12-6	2	12-13	2	12-13				21
Herring Gull	20	12-13	25	12-31	25	12-31				1,455
Ring-billed Gull	25	9-27	40	10-25	18	12-13				1,680

(over)

(1)	(2)		(3)		(4)		(5)			(6)
III. Doves and Pigeons:										
Mourning dove	75	9-1	75	9-1	2	12-13				4,760
White-winged dove										
IV. Predaceous Birds:										
Bald ~~Golden~~ eagle	2	3-4	2	constant	2	12-6		1	0	238
Duck hawk										
Horned owl	2	1-18	2	"	1	11-15		2	4	450
Magpie										
Raven										
Crow	500	1-4	10,000	3-8	60	12-31		No Data		1,000,000
Turkey Vulture	3	4-12	3	4-26	2	12-13		0	0	40
Cooper's Hawk	1	2-22	1	11-15/12-21	1	12-30		0	0	60
Red-tailed Hawk	1	1-4	3	4-9	1	12-31		3	9	2,000
Rough-legged Hawk	2	1-4	3	3-19	1	12-13		0	0	400
Marsh Hawk	1	1-4	2	4-9	1	12-13		1	0	800
Osprey	1	4-8	3	5-8	3	5-9		0	0	140
Sparrow Hawk	1	1-11	20	9-1	1	12-21		5	15	3,500

Reported by J.C. Appel, Asst. Refuge Manager.

INSTRUCTIONS

(1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)

(2) First Seen: The first refuge record for the species for the season concerned.

(3) Peak Numbers: The greatest number of the species present in a limited interval of time.

(4) Last Seen: The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

(6) Total: Estimated total number of the species using the refuge during the period concerned.

INT.-DUP. SEC., WASH., D.C.

36104

3-1752
Form NR-2
(April 1946)

UPLAND GAME BIRDS

Refuge MONTEZUMA Months of September to December, 1958

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'v'd.	Estimated Total	Percentage	Hunting	For Re-stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Pheasant	Grass, brush, cat-tail swamp 1500 acres	30			50-50				50	Random observations indicate that the population is down to about 1/4 of last year

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

(1) SPECIES: Use correct common name.

(2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.

(4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.

(5) REMOVALS: Indicate total number in each category removed during the report period.

(6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.

(7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

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

3-1753
Form NR-3
(June 1945)

BIG GAME

Refuge MONTEZUMA Calendar Year 1958

(1) Species	(2) Density	(3) Young Produced	(4) Removals				(5) Losses			(6) Introductions		(7) Estimated Total Refuge Population		(8) Sex Ratio
Common Name	Cover types, total Acreage of Habitat	Number	Hunting	For Re-stocking	Sold	For Research	Predation	Disease	Winter Loss	Number	Source	At period of Greatest use	As of Dec. 31	
White-tailed Deer	Entire Refuge-6,000 acres	50	59 *						8 **			170	100	50-50

* Includes:

29 Bow and arrow kills.
14 Known gun kill on Refuge border.
6 Estimate gun kill on unchecked Refuge border.
10 Estimate total crippled loss.

** Includes:

4 Road kills.
1 Bog kill.
1 Drowned.
2 Found dead.

Remarks:

Reported by J. S. Appel, Asst. Refuge Manager.

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 <u>each species</u> 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.

116008

3-1755
Form NR-5
60701

DISEASE

Refuge M O N T E Z U M A Year 1958

Botulism **Nothing to report this period**

Period of outbreak _____

Period of heaviest losses _____

Losses:

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

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

Areas affected (location and approximate acreage) _____

Nothing to report

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

Condition of vegetation and invertebrate life _____

Remarks _____

Lead Poisoning or other Disease

Kind of disease _____

Species affected _____

Number Affected Species	Actual Count	Estimated

Number Recovered _____

Number lost _____

Source of infection _____

Water conditions _____

Nothing to report

Food conditions _____

Remarks _____

3-1756
Form NR-6
(Rev. August 1957)

PUBLIC USE

Refuge M O N T E Z U M A Calendar Year 1958

Total Use Visitor-Days	Hunting Use	Fishing Use	Miscellaneous Use
18,000 18,109 PRT (rounded to significant number)	879	7,000	10,230

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

Hunting (on refuge lands):	Percent	Visitor-Days	Acres
Waterfowl			
Upland Game			
Big Game	100	879	5,000

Supervised by refuge x by State ____ No. of blinds ____

Hunting (off refuge lands): Estimated man-days of hunting on lands adjacent to the refuge 1,000 (These figures should not be included in hunting-use totals above).

Fishing:

Acres of ponds or lakes ____ and miles of streams

2 miles oper to fishing. Clyde River & Seneca Barge Canal

Miscellaneous:	Percent	Visitor-Days
Recreation *	78	8,000
Official	1	90
Economic Use	16	1,700
Other (organized groups)	5	440

Comments:

Estimated adjacent refuge hunting based on:
Deer - 10 hunters/day 14 days 140
Ducks - 6 blinds 2 hunters/day 47 days 564
Upland Game- estimated - 200

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

INT.-DUP. SEC., WASH., D.C. 22919

3-1757
Form NR-7
(April 1946)

PLANTINGS
(Marsh - Aquatic - Upland)

Refuge MONTEZUMA Year 1958

Species	Location of Area Planted	Rate of Seeding or Planting	Amount Planted (Acres or Yards of Shoreline)	Amount & Nature of Propagules	Date of Planting	Survival	Cause of Loss	Remarks
Norway Spruce	Headquarters Sub- "	Landscape		116-30"-36" transplants	April	95%	Normal planting loss	
Norway Spruce	Scattered over area	6'x6'		68-36" transp.	May	95%	Normal planting loss Some deer damage	
Norway Spruce	W. boundary S. of Thruway	6'x6'	1 acre	1000 seedlings	May	50%	Mowing and grazing	Fence not moved in time.
Red Pine	Same as above	6'x6'	1 acre	1000 seedlings	May	50%	Mowing and grazing	Fence not moved in time
Black Walnut	Headquarters Sub- "	Landscape		3-4'to5'	May	33%	Planted too late	
Flowering Crab.....	Headquarters Sub- "	"		4 - 4' to 5'	May	25%	Planted too late	
Norway Spruce	Headquarters Sub- "	"		6 - 36" transp.	Sept.	Replace	spring planting mortalities	

TOTAL ACREAGE PLANTED:

Marsh and aquatic....None.....
Hedgerows, cover patches....2 acres...
Food strips, food patches.....
Forest plantings.....

Landscape ..1/6.acre.....

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

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 Waterfowl Browsing Crops Type and Kind	Total Acreage
			Harvested		Unharvested				
	Acres	Bu./Tons	Acres	Bu./Tons	Acres	Bu./Tons			
Beans, Red Kidney	44	880					44	Alfalfa-browse-waterfowl	8
Buckwheat			19	165	30	240	49	Red Clover-waterfowl browse	24
Corn, ear	6.4	320	1.6	80			8	Rye-cover & browse	38
Millet, Japanese					6	130	6	Wheat-cover & browse	53
Rye	4	100	16	209			20	Mixed wheat & rye cover & browse	37
Soybeans					8	40	8		
Winter Wheat	23	575	1	25			24		
								Fallow Ag. Land	0

No. of Permittees: Agricultural Operations 2 Haying Operations 1* Grazing Operations 4

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING	Number Animals	AUM'S	Cash Revenue	ACREAGE
*Clover & Timothy (This operation carried out as a part of rotation in sharecropping)	None - crop failure due to wet weather at haying time.	12		1. Cattle	98	588	$294.00	353
				2. Other				
				1. Total Refuge Acreage Under Cultivation				331
Hay - Wild				2. Acreage Cultivated as Service Operation				185

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.

INT.-DUP. SEC., WASH., D.C. 91767

3-1759
Form NR-9
(April 1946)

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

Refuge MONTEZUMA Year 1958

Species	Collections				Receipts		Total Amounts on Hand	Amount Surplus
	Amount	Date or Period or Collection	Method	Unit Cost	Amount	Source		
Norway Spruce					6	Commercial * Nursery		

* Planted for replacements

Form NR-11

TIMBER REMOVAL

Refuge MONTEZUMA Year 1958

Permittee	Permit No.	Unit or Location	Acreage	No. of Units Expressed in B.F., ties, etc.	Rate of Charge	Total Income	Reservations and/or Diameter Limits	Species Cut
DOUGLAS CAMPBELL	58-1	2	10*	11 cords	$4.00	$44.00		White Ash
Douglas Campbell	58-9	4	10*	10 cords	4.00	40.00		White Ash
Douglas Campbell	58-14	4	10*	10 cords	3.50	35.00		Maple and Elm

* Selectively cut for desired species - not clear cut.

Total acreage cut over 30 Total income $119.00

No. of units removed B. F. _____
Cords 31
Ties _____

Method of slash disposal _____

1622

We are requesting funds for an equipment storage building in our 1960 budget.

Shame on you, such strategy!

Brunson Model 45 Dumpy level and tripod. Makes a good spotting scope. We have 12 surplus to our needs.

Will be distributed - W\

Surplus steel work benches temporarly installed in the garage have eased our work bench space needs.

Goose poaching problem was solved with two days patrol, and erection of signs. Two apprehensions were also made.

Hay feeder and grit boxes for captive geese. The geese have used a small amount of the grit.

Putting the old corn crib on skids and moving it into the goose lot has saved us a lot of service time.

Refuge manager John Morse and archery club members who checked hunting licenses and issued permits. 765 archers checked in 28 deer during the first one day hunt.

Happy hunter.

Many are called.

Few are chosen.