

MINGO

NARRATIVE REPORTS

JANUARY - DECEMBER 1952

A NARRATIVE REPORT
MINGO NATIONAL WILDLIFE REFUGE
PUXICO, MISSOURI
SEPTEMBER THROUGH DECEMBER, 1952

REFUGE PERSONNEL

Lyle J. Schoonover	-----	Refuge Manager
Wilfred W. King	-----	Maintenance Man (General)
William C. Oakden	-----	Construction, Operation and Maintenance Supervisor
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U. S. DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
PUXICO, MISSOURI

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I. GENERAL

A. Weather Conditions

Only one thought comes to mind when trying to recall weather conditions this fall; that is "darn dry." The "bootheel" was one of the first sections of the nation to be proclaimed a drought disaster area last summer. The drought continued throughout the fall, causing crop failures and feed shortages; climaxing with hundreds of uncontrolled fires, which burned for several weeks.

Weather data is obtained from the Army Engineers Station at the Wappapello Dam, located approximately 3/4 mile from the southwest corner of the refuge.

	<u>Precipitation</u>	<u>Maximum Temp.</u>	<u>Minimum Temp.</u>
September	1.90	96	47
October	.44	91	24
November	4.49	79	15
December	<u>2.70</u>	<u>61</u>	<u>17</u>
<u>Total</u>	9.53	<u>Extremes</u> 96	15

Normal precipitation fell during the first two quarters of the year, with rather drastic shortages the last half of the year.

Comparative Tabulation Of Precipitation

1948 - 1952

<u>Year</u>	<u>September thru December Precipitation</u>	<u>Annual Precipitation</u>
1948	17.80	46.98
1949	19.64	55.77
1950	10.72	55.06
1951	17.51	48.58
1952	9.53	35.96

No snowfall has occurred and the maximum thickness of ice has been less than one inch. Seldom has ice remained on the pool more than two or three days at a time.

B. Water Conditions

Water levels at Mingo became the lowest this period that they have been since the establishment of the refuge. Monopoly Lake, Beaver Pond and approximately one-half of the ditches were bone dry in October. The clay soil dried out to cement-like hardness, whereas, the black cypress soil became loose and fluffy. Nearly a half inch of rain fell November 9th, after which time, rains have been more frequent. The pool has raised steadily from a low of 330.84 on October 20th to 333.70 at the close of the period.

At least a foot more of water is desirable to flood the millet fields, making this source of food more available. If weather conditions run true to form, a surplus of water can be expected within the next two or three months.

Gauge Reading Tabulations

September 1, 1952 - January 1, 1953

<u>Date</u>	<u>Gauge Reading</u>	<u>Date</u>	<u>Gauge Reading</u>
Sept. 1	331.86	Nov. 15	332.20
Sept. 15	332.50	Dec. 1	333.30
Oct. 1	331.18	Dec. 15	333.52
Oct. 15	330.86	Jan. 1	333.70
Nov. 1	330.88		

C. Fires

A control burn was made October 14th to kill brush and to clear the swamp of dead and down timber. The fire jumped fire breaks in several places, which resulted in a larger burn than was intended, but the fire was kept within the refuge and without loss of property. About the time patrol work on the control burn was nearing completion, a fire originating outside of the refuge swept southward thru the timber between ditches 1 and 2. The boundaries of this burn were patrolled for nine days before rain put out all of the smoldering logs and stumps.

In all, an estimated 15,000 acres of the swamp were burned. The open bottoms such as Monopoly Lake and the Beaver Pond burned fast with an intense heat. In the timberland, air circulation was restricted; the soil was moister and the fires burned slowly with a low flame.

During the latter part of October and early November, dozens of fires were out of control throughout the entire southeastern part of the state. On November 6th, seven timber fires were seen in the 55 miles from Puxico to Sikeston, Missouri. A thick blanket of smoke hung over the countryside day after day. Highway traffic was held up where dense smoke crossed the road and light aircraft were often grounded because of restricted visibility.

A state fire emergency was declared from November 1st to November 9th, but fires continued to break out. All forms of outdoor recreation such as hunting, fishing, and camping were halted during the emergency period.

II. WILDLIFE

A. Migratory Birds

1. Populations and Behavior

(a) Waterfowl

Until mid-November, water levels on the refuge were too low to attract many waterfowl. The ditches were used by small numbers of Blue-winged Teal and Wood Ducks, but the habitat was certainly limited. After the fall rains started, the ditches filled and gradually overflowed into the basin. By November 10, the Mallard population built up to about 2,000 birds. With increased flooding more food became available and the population increased rapidly. By December 15, an estimated 45,000 Mallards were using the refuge. Shortly before Christmas, the pool froze, and many of the Mallards left, leaving about 25,000 at the close of the period.

Sometime during the last ten days of December, a flight of Pintails moved in. U. S. Game Management Agent Alexander reports that there were few Pintails farther north, so the migration must be the start of a northward movement. Approximately 20,000 were using the millet fields on January 1. Wild millet is apparently a highly preferred food for Pintails, as only a few were seen leaving the marsh to feed on cornfields.

From various reports received at the refuge, it seems that the Canada Goose migration was unusually early this fall. Large flights passed over the refuge during the first half of

October. At that time the refuge was baked dry and charred coal black by fires. Very few geese stopped. After flooding, small numbers have moved in, probably a part of the large concentration at the Horseshoe Refuge located some forty air miles from Mingo.

In mid-December, 32 captive geese were obtained from the Crab Orchard Refuge. Although some of the captives were badly mangled by hunters, the entire lot are still alive. Even birds with broken wings which became badly infected with gangrene, are apparently on the road to recovery.

From eight to sixteen wild geese are frequently sighted in the goose pen with the captives. These may be part of a previous captive flock that escaped two years ago when high water topped the goose pen fence.

(b) Other Waterbirds

Great Blue Herons appeared in greater numbers this fall than last. Small fish trapped in the ditches furnished an abundant food supply. Only a few Egrets and Cormorants were seen.

(c) Shorebirds

Very few shorebirds visited the refuge this fall. During the shorebird migration, the refuge was nearly dry.

2. Food and Cover

No deficiencies in waterfowl cover are found at Mingo; the problem will be to keep water areas free from dense stands of willows and buttonbush.

Food sources are varied on this area and thus supply

ranges from poor to excellent. The mast crop on the bottomlands has been almost a complete failure. The severe drought during the summer may be responsible for the scarcity of fully developed acorns. The corn crops can be rated as fair despite the drought. Several fields yielded about 70 bushel per acre, which is an outstanding accomplishment, considering that the average yield was about 9 bushels per acre at the time of acquisition in 1947.

Two fields of standing corn were burned after the share croppers had removed their corn. The shucks were completely burned and in most cases the fire was hot enough to burn the shanks and cause the ear to fall. The field was left strewn with bright yellow corn amid barren cornstalks. It goes without saying, that this was a choice situation for the Mallards. Approximately 15,000 Mallards came into one 40 acre burned-over cornfield several successive evenings. This may be a useful technique in making standing corn readily available to waterfowl.

Cover crops, such as rye and wheat, intended for soil protection and goose browse, made a late start. Some fields were not planted because the soil became too dry for seed germination.

The millet crop was excellent on some fields, which had been cultivated the previous year. Nearly 100 percent stands were combined in several fields. Excellent stands of wild millet occurred on about 200 acres, with a mixture of smartweed, wild millet and other less desirable marsh grasses and sedges covering an additional 7 or 8 hundred acres.

Experience was gained this year in the propagation and harvest of wild millet that will be very valuable in the future. Millet is a warm weather plant which cannot compete with other marsh plants during the cool spring months, but given space and moisture in June or July it grows rapidly and can become dominant. It was quite evident during the millet harvest that the cultivation of millet land in May, June or early July is necessary to reduce the competition from plants already established before the growing season for millet commences. Many acres of potentially good millet land were lost to thriving stands of cockleburrs. A late spring discing, plus a mid-summer spraying might discourage these pests.

3. Botulism

No loss.

4. Lead Poisoning and Other Diseases

Trappers have reported finding about a dozen dead birds in the marsh. These were most likely victims of lead poisoning or shot wounds.

B. Upland Game Birds

1. Population and Behavior

Quail make considerable use of the abandoned fields and croplands on the alluvial soil just below the bluffs. Other coveys are found on the spoilbanks along the ditches where briars and weeds furnish good cover.

A slight increase in the population was probably the result of the dry summer, which facilitated a greater brood survival.

2. Food and Cover

Food and cover are both adequate on the periphery of the basin. The limited acreage of choice Quail habitat on the refuge will tend to limit this species. As more farm land is created by renovating old homesteads and carving new fields out of second growth hardwoods, the Quail habitat will be increased.

3. Disease

None noted.

C. Big Game Animals

1. Population and Behavior

Judging from reports of persons familiar with the past wildlife history of the refuge, the deer herd is slowly increasing. The completion of the Wayne County Fence should restrict domestic stock use of the refuge and will probably aid in keeping out some of the hounds, which frequently run raccoon, fox and deer in various parts of the swamp.

2. Food and Cover

Corn, browse and cover crops will provide sufficient food even with a short supply of mast. Additional openings in some of the large unbroken tracts of timber will benefit the deer herd.

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

All forms of mammal life on the refuge were effected to some degree by the unusually dry summer and the fall fires. No dead animals were found on the burned area nor were any observed

moving out ahead of the fire. Undoubtly some wildlife was lost, but a good evaluation of the loss will be almost impossible to get.

1. Grey Squirrel

Grey Squirrels seem to be holding their own and may have even increased a little this past summer. Mast is in short supply, but scattered cornfields should carry them through the winter.

2. Foxes

Both red and grey foxes are found on the refuge. They are most frequently seen near the refuge periphery along the bluffs. Some farmers living near the boundary have mentioned poultry losses caused by foxes, but even with a take-all permit, trappers show little interest in trapping them. A greater removal would be desirable.

3. Raccoon

As has been the case throughout the country, refuge 'coon have made substantial gains in recent years. In this vicinity, however, raccoon are sought both for meat and furs, thus it is still profitable for trappers to catch them. Carcasses sell locally for \$1.00 with even a greater demand and consequently higher prices in some of the cities. Between 60 and 70 raccoon have been taken so far this season by trappers. A larger catch can be expected in future years after the program is better organized.

4. Mink

The combination of fire and drought undoubtedly moved part of the mink out of the refuge to surrounding drainage ditches

and to the St. Francis River. The local dealer has reached an all time high in purchases of mink pelts, whereas, the refuge trappers have found fewer mink than was anticipated. Through water management and a controlled harvest, the future outlook for mink on the refuge looks quite bright.

5. Muskrats

Future trends in the muskrat population will be interesting to watch. Old timers report that in the "good old days" muskrats were not an important fur bearer in the swamp. After drainage, summer dry periods have restricted the 'rats to ~~some~~ of the deeper ditches. Following the opening up of the swamp thru logging, burning and farming, grasses and sedges have become more abundant. With permanent flooding, we can expect greater numbers of muskrats than have been present during the recorded history of the area.

A sufficient brood stock of bank 'rats are scattered throughout the ditches to populate the new habitat as it develops.

6. Opossum

Trappers have not encountered ~~as~~ many opossum as we expected. Additional water area, may ~~cause~~ ^{bring} greater numbers in the future.

E. Predaceous Birds, Including Crows, Ravens, and Magpies

A few Bald Eagles have been reported. Red-tailed and Marsh Hawks are the most common winter representatives of this family.

F. Fish

Very little water was left on the refuge this fall for fish. In the future conditions should be much improved.

In recent years, fishing on the St. Francis River has been steadily declining. Lake Wappapello has not lived up to expectations, but may improve with more stationary water levels. Both fishing and hunting are important forms of local recreation, hence the restoration of fishing on the refuge is followed with considerable interest.

III. REFUGE DEVELOPMENT MAINTENANCE

A. Physical Development

Construction work progressed well until the first week in December. A series of rains made the roads and trails so soft that progress became slow and our expenses great. Most of the construction work was halted in December, awaiting better working conditions.

1. Dike

The control structure, spillway and dike have been completed. The dike was gravelled during the period, but the slopes have not yet been seeded. Controlling erosion on the dike slopes will be somewhat of a problem. The fertility of this subsoil is very poor and overhanging trees shut out much of the sunlight needed for grasses. An early spring planting will be tried in February; perhaps it will be necessary to use a mulch and fertilizer on portions of the levee. This year, either hay or straw

are difficult to purchase.

2. Wayne County Boundary Fence

Approximately $3\frac{3}{4}$ mile of fence has been built this period. An additional $2\frac{1}{4}$ miles of line has been staked, about half of which has been cleared. It is our present plan to stake out the fence line for the remaining $3\frac{1}{8}$ miles and clear it, while the leaves are off and while the roads are too soft to transport fencing materials.

A rougher section of country on which to build a hog-proof fence would be hard to visualize. All of the remaining fence is over "hills and hollers",; the hills of which are composed of 25 percent clay and 75 percent limestone boulders. The work has been speeded up somewhat by blasting out the corner post holes, using three sticks of dynamite per hole.

Sometimes our troubles come in bunches, at least that is the case with the Wayne County Fence. Some Wayne County landowners have been fueding over their boundary lines for years. A number of the Department of Agriculture markers have been removed and replaced by two or three widely separated iron posts, each of which represents the true corner as claimed by the various landholders. Iron deposits in the hills deviate compass bearings and chaining is a tough job in the hills. Thank goodness, it will be a tough job proving we're wrong!

With good luck, we hope to complete this section of fence with our remaining funds. It is urgent that the fence be completed this spring so that a campaign can be started against the wild hogs

and open ranch stock. Mr. Oakden is doing a fine job as combination pack mule, billy goat, and surveyor.

3. Ditch # 6 Road

Good progress was made on the ditch #6 road throughout the month of November. Approximately 11,000 cu. yds. of fill were placed and a 36" metal culvert was installed at the Mingo Creek crossing. An estimated 14 days work are required to complete the fill on this road.

It appears now that construction work for the remainder of the winter should be confined to higher ground with better drainage. The remainder of the ditch #6 road will be completed next summer.

4. Flatbanks Bridge

This bridge was built under the supervision of Mr. Oakden during October. The bridge is a good substantial structure that should last for a good many years.

5. Automotive and Heavy Equipment Repairs

Minor repairs have been made on most of the equipment during the period. A great deal of repair work still remains to be done. Most of this work should be accomplished during bad weather, but without a service building, there are many days when outdoor work is impossible.

6. Habitat Improvement

The proposed pool area was badly overgrown with a mixture of semi-aquatic shrubs. The area was quite effectively "opened up"

by burning. A very hot burn was made wherever grasses and sedges were present as an understory below the shrubs. It is still too early to accurately evaluate the results of the burn, but judging from the appearance of the plants, nearly all of the shrubs under 3 feet high were killed, about one half of the plants between 3 feet and 6 feet high will probably die, and plants over 6 feet high show little evidence of injury.

B. Plantings

1. Cultivated Crops

The farming program was somewhat disorganized this past year as it was anticipated that flooding would start about mid-summer and as a result some Permits were withheld. These Permits were issued in June, after it became evident that flooding would not start until fall. Some of these late fields produced fair crops; others were caught by an early frost and produced almost nothing.

Our new roads and bridges were not built early enough to provide access to a number of reverted fields this past season.

Crops Produced And Utilization

	<u>Produced</u>	<u>Disposition</u>	
		<u>Permittee share</u> <u>(Harvested)</u>	<u>Refuge share</u> <u>(Left standing)</u>
Corn	24,968 Bu.	15,669 Bu.	9,299 Bu.
Beans	14,294 Bu.	10,052 Bu.	4,242 Bu.
Wheat	146 Bu.	146 Bu.	

Cover Crops	277 Acres	277 Acres
Manure Crops	109 Acres	109 Acres

Considering the adverse climatic conditions in the state this year, crops on the refuge were reasonably good. Beans were infested by a number of insects and suffered from the drought, the average yield was 13 bushels per acre. Beans are ordinarily planted as a cash crop, but this year many fields were cut for hay.

We fell short on the cover crops plantings this fall, because it was too dry for seed germination. Some fields that were planted have adequate cover; on others the rye is patchy and very late.

Ducks have made extensive use of several standing corn fields, this is especially true of fields, which were burned prior to the fall migration. Some patches of corn scattered throught the woods are less acceptable to waterfowl than large extensive fields. Our present acreage of 485 acres of standing corn is scattered over 53 fields. The average size of which is only 9 acres. One of our goals in the revised Economic Use Plan will be to incorporate small fields into larger units.

Both domestic and wild stock continue to be a problem. Eighty-six acres of corn were destroyed by hogs before the corn reached maturity. Aproximately one-half of the refuge share of standing corn has already been consumed by livestock. Some of these fields would be utilized by ducks during period of high water. It is my understanding that the trespass of Wayne County stock has declined

with fencing, but that the number of wild hogs are rapidly increasing. It is unlikely that wild hogs will ever be eliminated from the refuge; they have been there for over a hundred years, under hunting pressure, and now, with no harvest and an increased food supply, we have no reason to believe that they will suddenly disappear. They can probably be managed, after the completion of our boundary fence, in much the same manner as deer herds are handled on other refuges.

C. Collections

Former crop land on the black cypress soil in section 13 and 23 were taken out of cultivation this year because of the anticipated flooding. These fields produced some excellent stands of wild millet and smart weed. Two hundred and thirty acres were combined before frost hit, and stopped the harvest.

Harvest And Distribution Of Millet & Smartweed Seed

<u>Harvest</u>	<u>Dist./ Uncleaned Seed</u>	<u>Dist./ Cleaned Seed</u>
50,000 lbs.		

Refuge

Necedah	8,360 Lbs.
Lower Souris	10,000 "
Chautauqua	350 #
Kentucky Woodlands	2,720 "
White River	2,700 "

<u>Refuge</u>	<u>Dist. / Uncleaned Seed</u>	<u>Dist. / Cleaned Seed</u>
Reelfoot	4,005 Lbs.	
Moosehorn	830 "	
Parker River	1,910 "	
Mud Lake		2,000 Lbs.
Sand Lake		3,665 "
Squaw Creek		2,100 "
Union Slough		700 "
Upper Souris		600 "
Des Lac		435 "
Montezuma		120 "
Chincoteague		125 "
Blackwater		850 "

IV ECONOMIC USE OF REFUGE

A. Haying

Hay of any kind was in high demand last summer. Rank growths of false red top with a thin interpersions of willows looked mighty inviting to stock raisers. Nine hundred and forty acres of the bottom land in Monopoly Lake were cleared of brush and cut for hay. We had the area cleared and received \$470.00 in payment for the hay. The stock raisers were happy to get the 25,000 bales of hay, which they valued at \$1.00 a bale in the field.

B. Fur Harvest

This was the first year for the trapping program on Mingo.

We were anxious to get the program started and organized before starting water management, even though the harvest would be restricted primarily to predatory species. The trappers had a late start and were often hampered by ice. During the first twenty-five days of the forty days season, the eleven trapping permittees took the following fur bearers:

	<u>Number</u>	<u>Local Value</u>
Raccoon	65	\$0.75 - \$1.00 (Carcasses \$1.00)
O'possum	8	\$0.30
Red Fox	1	\$0.35
Mink	13	\$11.00 - \$20.00
Muskrat (Taken accidentally)	5	\$1.20

C. Timber Removal

No timber has been removed during the period, but removal of timber in the proposed pool area should be considered.

VI PUBLIC RELATIONS

A. Refuge Visitors

The following is a list of the more distinguished guests that visited the refuge during the period, and does not include the numerous visits of permittees and people seeking information on co-op shooting grounds:

<u>Date</u>	<u>Name</u>	<u>Purpose</u>
9/3/52	C. Alexander	Gasoline Contract
9/4/52	J. Beets, Jeff City, Mo.	Land acquisition (Co-Op Area)
	G. Laun, Jeff City, Mo.	do do do do
9/5/52	C. R. Alexander, Jeff City, Mo.	Enforcement
9/10/52	C. T. Rollings, Minneapolis	Inspection
9/11/52	C. T. Rollings, Minneapolis	Inspection
9/17/52	F. C. Gillett , Minneapolis	Inspection
9/23-25/52	H. Thornsberry, Swan Lake	Millet Harvest
9/29/52	Bill Coleman , SCS	Soil Survey
	Mr. Spears, SCS	Soil Survey
9/30/52	J. W. Smith, MCC	Co-Op Area
10/3/52	R. E. Wilson, Kentucky Woodland	Millet Seed
10/6/52	C. Crowder, White River Refuge	Millet Seed
	R. Fickle, Reelfoot Refuge	Millet Seed
	I. Denton, Reelfoot Refuge	Millet Seed
	J. Morton, Big Lake Refuge	Millet Seed
	C. Hudson, Big Lake Refuge	Millet Seed
	R. Wright Engineer	Inspection
10/7/52	R. Wright, Engineer	Inspection
	A. Bernard, MCC	Enforcement
10/8/52	W. Barbee, MCC	Tour
	S. Kyd MCC	Tour

<u>Date</u>	<u>Name</u>	<u>Purpose</u>
10/9/52	T. Lawson, Lower Souris Refuge	Millet Seed
	Mr. Kaastad, Necedah Refuge	Millet Seed
10/22/52	J. Beets, MCC, Jeff City, Mo.	Acquisition
	G. Laun, MCC, Jeff City, Mo.	Acquisition
	B. Coleman, SCS	Soil Survey
	Pieter Krigger, Exchange Technician (Holland)	
11/10/52	J. Beets, MCC, Jeff City, Mo.	Acquisition
	G. Laun, MCC, Jeff City, Mo.	Acquisition
11/13/52	J. W. Smith, MCC, Jeff City, Mo.	Co-Op Area
11/14/52	G. Brakhage, MCC, Jeff City, Mo.	Co-Op Area
12/5/52	A. Bernard, MCC, Bloomfield, Mo.	Enforcement
	D. Proffer, MCC, Cape Girardeau, Mo.	Enforcement
12/10-12	C. T. Rollings, Minneapolis	Inspection
	J. W. Smith, MCC, Jeff City, Mo.	Co-Op Area
	B. Nixon, MCC, Jeff City, Mo.	Co-Op Area
	A. Bernard, MCC, Bloomfield, Mo.	Enforcement
	D. Proffer, MCC, Cape Girardeau, Mo.	Enforcement
12/22/52	D. Noebe, Mo. U., Columbia, Mo.	Tour
	R. E. Dormott, Mo. U., Columbia, Mo.	Tour
	E. Bennett, Mo. U., Columbia, Mo.	Tour

B. Refuge Participation

Refuge personnel conducted several sportsmen on tours of the refuge to observe waterfowl concentrations. They have also been instrumental in furnishing sportsmen information desired on the Public Shooting Area.

C. Hunting

Waterfowl hunting seemed to be only fair. Birds were killed in several corn fields, along the St. Francis River and in Lake Wappapello, but the hunting was never consistent. Hunting pressure in the bootheel of Missouri does not compare to the mad scramble for ducks that the writer has experienced in central Illinois.

D. Fishing

No fishing on the refuge during the period.

E. Violations


<u>Name</u>	<u>Violation</u>	<u>Fine</u>
Claude Walk	Hunting on Refuge	Trial pending
Carl Mahurin	Hunting on Refuge	\$5.00 & \$8.50 cost

VII OTHER ITEMS

Nothing to report

Date Completed: Jan. 9, 1953

Respectfully Submitted

Approved: 

Acting Regional Director


Lyle J. Schoonover
Refuge Manager

JAN 12 1953

WATERFOWL

September

Refuge WingoMonths of XXXXXX

to

December 31 19 52

(1) Species		(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Young Produced		(6) Total
Common Name		Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for period
I. <u>Swans:</u>										
Whistling swan										Days use
II. <u>Geese:</u>										
Canada goose		8	10/3	150	12/31					4,335
Cackling goose										
Brant										
White-fronted goose										
Snow goose										
Blue goose										
III. <u>Ducks:</u>										
Mallard		30	9/20	45,000	12/21					751,150
Black duck										
Cadwall				1,000	12/21					55,000
Baldpate										
Pintail				12,000	12/31					162,000
Green-winged teal										
Blue-winged teal		126	9/20	130	10/20					4,725
Cinnamon teal										
Shoveller										
Wood duck		Resident		75	11/10					3,710
Redhead										
Ring-necked duck										
Canvas-back										
Scaup										
Golden-eye										
Buffle-head										
Ruddy duck										
IV. <u>Coot:</u>										

3-1750

(over)

(Sept.1950) Interior - Duplicating Section, Washington, D.C. 82449

Form NR-1

SUMMARIES

Dates waterfowl counts made _____

Percent of waterfowl area covered _____

Dates brood counts made _____

Percent of area covered in brood counts _____

Total production:

Geese _____

Ducks 80

Coots _____

Total waterfowl usage during period 580,020

Peak waterfowl numbers 58,355

Areas used by concentrations Section 21

Principal nesting areas this season _____

Reported by Lyle J. Schoenover

INSTRUCTIONS

(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) First seen:

The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.

(3) Peak concentration:

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 in the reporting period.

(5) Young produced:

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.

(6) Total:

Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since the data are necessarily based on an analysis of the rest of the form.

3-1751

Form NR-1A
(Nov. 1945)MIGRATORY BIRDS
(other than waterfowl)Refuge MingoMonths of Sept.to Dec.194 52

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. <u>Water and Marsh Birds:</u>										
Great Blue Heron			700	September						1000
Little Green Heron			50	September						150
American Egret			50	September						150

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. Doves and Pigeons:					
Mourning dove					
White-winged dove					1000
IV. Predaceous Birds:					
Golden eagle					
Duck hawk					
Horned owl					
Magpie					
Raven					
Crow					1000
American Eagle					1
Reported by <u>Lyle J. Schenck</u>					

INSTRUCTIONS

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

3-1752

Form NR-2
(April 1946)

UPLAND GAME BIRDS

1613

Refuge Wings Months of September to December, 1945

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'd.	Estimated Total	Percentage	Hunting	For Re- stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Bob-White Quail									1200	Slight increase from year ago

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 _____ Calendar Year _____

(1) Species	(2) Density	(3) Young Produced	(4) Removals				(5) Losses			(6) Introductions	(7) Estimated Total Refuge Population		(8) Sex Ratio
			Hunting	For Re- stocking	Sold	For Research	Predation	Disease	Winter Loss		At period of Greatest use	As of Dec. 31	
Common Name	Cover types, total Acreage of Habitat	Number								Number	Source		
White Tail Deer											35	25	

Remarks:

Reported by Lyle J. Schoonover

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.

116000

3-1759
Form NR-9

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

Refuge.....Wingo..... Year 19452

Species	Collections				Receipts		Total Amounts on Hand	Amount Surplus
	Amount	Date or Period or Collection	Method	Unit Cost	Amount	Source		
Wild Millet	50,000 Lbs.	September	Combine	\$0.05			800 Lbs.	None
							See Collections for report on distribution	

CULTIVATED CROPS

Refuge Mingo Year 1952

Permittee (If farmed by refuge personnel, so indicate)	Permit No.	Unit or Loca- tion	Crops Grown	Avg. Yield per Acre	Permittee's Share		Government's Share or Return				Compensatory Services, or Cash Revenue
					Acres	Bu. Har- vested	Harvested		Unharvested		
							Acres	Bu.	Acres	Bu.	
Atehison, J.	Mingo-17	F-46, 51 & 51a	Corn	40	8	320			8	320	
			Beans	19	17.9	340			3.1	58	
Barnfield, F. M.	18	F-15, 18 & H-16	Corn	35	11.8	413			16.2	567	
			Beans	15	28	410					
Binford, E	19	F-83	Corn	25	0	0			21	525	
			Beans	15	49	735			0	0	
Brantley, K	63	F-54	No Crops planted. Too Dry								
L. Bruce	60	F-65	Beans	10	20	200			10	100	
Buchanan, C.	32	F-76, 77 & 78	Corn	30	0	0			28	840	
			Beans	15	65	975			0	0	
Burge, A. A.	58	F-57	Beans	1 Ton	9.5	9.5T			4.3	XXX	
Cookson, J.	62	F-64 & 70	Corn	10	8	80			9	90	
			Beans	1 T.	10 T.	10 T.			0	0	
Cate, C.	20	F-28	Corn	25	9.6	240			2.4	51	
			Beans	8 T	0	0					
Charles, L & T.	21	F-21, 23 & 29	Corn	45	49.7	2236			11.8	531	
			Beans	12	30	360			27	324	
Cookson, H. C.	23	F-55	Corn	20	2	40			7	140	
			Beans	10	14	140			2.5	25	
			Wheat	8	7	56			0	0	
											12 A Turned Under & sowed to wheat

Summary of Crops Grown:	Crop	Acreage	Permittee's Share Acres Bushels	Government's Share Harvested Acres Bu.	Unharvested Acres Bu.	Total Revenue \$
Continued to next sheet						

Interior Duplicating
Section, Wash.D.C.

DIRECTIONS FOR PREPARING FORM NR-8
CULTIVATED CROPS

Cultivated Crops Report Form NR-8 should be prepared on a calendar-year basis for all crops harvested or utilized during the calendar year and submitted with the December 31 refuge report.

Permittee - List each permittee separately. If lands of the refuge are farmed by refuge personnel or hired labor, this should be indicated in the Permittee column.

Permit No. - List the number of the Special Use Permit issued to the individual.

Use or location - The Unit No. or name specified in the Economic Use Plan should be listed in this column.

Crops Grown - A separate line of the form should be used for each crop grown by each permittee or by refuge personnel. This is important, since if each crop grown by each operator is not specifically enumerated, the report will be of no value for statistical purposes.

Average Yield per Acre - It is important that the average yield per acre of each crop grown by each operator should be shown.

Permittee's Share - Only the number of acres harvested or 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. It is requested that all crops harvested be reduced to bushels wherever possible, or, as in the case with the harvesting of seed such as that of sweet clover, alfalfa, bromegrass, etc., the total harvested crop in pounds may be shown. Timothy, alfalfa, or other hay harvested by the permittee should be shown on Form NR-10 and should not be shown in the Permittee's Share column.

Government's Share or Return - Harvested - Show the number of bushels harvested for the Government and the acreage from which this share is harvested, both for grain raised by refuge personnel and by permittees. Unharvested - show the exact number of acres of crops allowed to remain unharvested as food and cover for wildlife. An estimate of the number of bushels of grain that is available for the wildlife in such unharvested crops should be shown in the Bushels column.

Compensatory Services, or Cash Revenue - Show other services received by the Government in cooperative farming activities, the number of acres of food strips planted for wildlife, the amount of wildlife crops not otherwise reported that are planted by cooperators for the Service, or the cultivation of wildlife plantations. If the permit is on a fee basis, the total cash revenue received by the Service.

CULTIVATED CROPS

Refuge Mingo Year 195 2

Permittee (If farmed by refuge personnel, so indicate)	Permit No.	Unit or Loca- tion	Crops Grown	Avg. Yield per Acre	Permittee's Share		Government's Share or Return				Compensatory Services, or Cash Revenue
					Acres	Bu. Har- vested	Harvested		Unharvested		
							Acres	Bu.	Acres	Bu.	
Cookson, O.	Mingo-55	F-43, 63a & 68	Corn Beans	25 15	27 24	675 360			6 150		20 A. turned under 24 A. Sowed to Rye and Wheat
Cookson, V.	-22	F-56	Corn Beans	20 10	10.5 17.5	210 175			4.5 7.5	90 75	
Duniphan & Williams	-24	F-17	Corn Beans	30 2 T	14 0	420 0			0 0	0 0	14 A. Turned under and sowed to Rye.
Elledge, C. M.	-25	F-84 & 85	Corn Beans IK	30 15 1 T	0 71 11	0 1065 11T			32 3 0	960 45 0	
Franklin, W.	-10	F-79, 80, 81 & H-20	Beans Corn	15 30	31 37	465 1110					24 A. Turned under/2
Haney, R	-38	F-40 & 41	Corn Beans	25 15	8 56	200 990			22 10	550 150	
Haney & Hissaw	-8	F-60	Beans	15	20	800			10	150	
Hodge, C.	-37	F-40	Corn Beans	25 15	0 20	0 300			10 0	250 0	
Hutson, N.	-14	F H-18	No Crops Grown								

Summary of Crops Grown:	Crop	Acreage	Permittee's Share		Government's Share		Total Revenue	
Continued to next sheet			Acres	Bushels	Harvested Acres	Bu.	Unharvested Acres	Bu.

Interior Duplicating
Section, Wash.D.C.

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CULTIVATED CROPS

Refuge Mingo Year 195 2

Permittee (If farmed by refuge personnel, so indicate)	Permit No.	Unit or Loca- tion	Crops Grown	Avg. Yield per Acre	Permittee's Share		Government's Share or Return				Compensatory Services, or Cash Revenue
					Acres	Bu. Har- vested	Harvested Acres	Bu.	Unharvested Acres	Bu.	
Hendrix, Wilburn	Mingo-59	F-64	No Crops	Harvested.							
Hendrix, Milford	-65	F-65	Corn	30	36	1080			19	570	Hogs damaged this field
Irvin, R.	-27	F-15, 18, 16a & H-13	Corn	30	6	180			1	30	
			Beans	1 T							
			Wheat	10	9	90	5 A. seeded		to red top.		S. A. Turned under seeded to Rye
Johns, V.	-50	F-52 & 54	Corn	30	5	150			2	60	
			Beans	15	21	315			7	105	6A. seeded to W.
Knodell, T.	-52	F-36	Corn	20	1	20			4	80	
			Beans	1T	7	7 T			0	0	
Linson, E. J.	-56	F-71a, 71b, 71c, & 75	Corn	30	5	150			2	60	Hog damage
			Beans	15	10	150			3	45	6A turned Under & seeded to wheat
Marler, W. A.	-29	9, 9a, 11 & 10	Corn	20	11	220			5	100	
			Beans	15	11	165			3	45	
McDaniels, E.	-61	F-19 & 24	Corn	25	11	275			5	125	
Placher, M. C.	-61	F-62	Corn	15	0	0			7	105	
			Beans	10	17	170			2	50	
Placher, M. C.	-35	F-44	Corn	30	16	480			8	240	Hog damage
			Beans	15	26	390			7	105	

Summary of Crops Grown:	Crop	Acreage	Permittee's Share Acres Bushels	Government's Share Harvested Acres Bu.	Unharvested Acres Bu.	Total Revenue \$
Continued to next sheet						

Interior Duplicating
Section, Wash.D.C.

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3-1758
Form NR-8
(April 1946)

CULTIVATED CROPS

Refuge Mingo Year 195 2

Permittee (If farmed by refuge personnel, so indicate)	Permit No.	Unit or Loca- tion	Crops Grown	Avg. Yield per Acre	Permittee's Share		Government's Share or Return				Compensatory Services, or Cash Revenue
					Acres	Bu. Har- vested	Harvested		Unharvested		
							Acres	Bu.	Acres	Bu.	
Payne, John	Mingo-51	F-32	Corn	30	10	300			6	180	
			Beans	15	12	180			3.5	52	
Payne, Raleigh	-50	F-35	Corn	30	32	960			11	330	
			Beans	15	14	210			8	135	
Reinert, Frank	-36	F-75, 75a, 75b & 75c	No crops grown								
Rhodes, Woodrow	-34	F-31 & 34	Corn	25	16	400			7	175	
			Beans	10	6	60					17A. turned under & sowed to rye.
Rodgers, P. S. & Virgil	-35	F- 14 & 15	Corn	?	?	Harvested without dividing.			Permit to be cancelled.		
			Beans	?	?	Harvested without dividing.					
Sherrell, Orville	-39	Y-28	Corn	30	19	570			5	150	
			Beans	1 T.	0	0			20	Turned under	
Stephens, Wm.	-41	F-25	Corn	30	11	330			8	270	
Stephens, Fred G.	-42	F-35	Corn	30	8	240			3.5	105	
			Beans	15	4.5	67			13	Turned under seeded to wheat	
Stilts & Vannatre	-38	F-36	Corn	30	11	330			5.5	165	
			Beans	15	12	180			4.5	67	
Sifford, Paul	-40	F-49 & 50	Corn	30	13	390			5.5	165	
			Beans	10	13	130			5	150	

Summary of Crops Grown:	Crop	Acreage	Permittee's Share Acres Bushels	Government's Share Harvested Acres Bu.	Unharvested Acres Bu.	Total Revenue \$
Continued to next sheet						

Interior Duplicating
Section, Wash.D.C.

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CULTIVATED CROPS

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3-1758
Form NR-8
(April 1946)

CULTIVATED CROPS

Refuge Mingo Year 195 2

Permittee (If farmed by refuge personnel, so indicate)	Permit No.	Unit or Loca- tion	Crops Grown	Avg. Yield per Acre	Permittee's Share		Government's Share or Return				Compensatory Services, or Cash Revenue
					Acres	Bu. Har- vested	Harvested		Unharvested		
							Acres	Bu.	Acres	Bu.	
Sifford, W. E.	Mingo-13	F-62	No Crops grown		20						
Stilts, D. H.	-43	F-37	Corn	50	31	1550			7	350	
			Beans	2 T.	0	0	38 A.	turned under &			seeded to rye.
Talley, James	-44	F-14 & 20	Corn	20	15	450					
			Beans	1 T.	0	0	15A.	Turned under &			seeded to Rye
Varble, Leon	-54	F-71 & 72a	Corn	25	6	150			9	225	
			Beans	10	15	150	5A.	sowed to wheat			
Varble, Leon	-64	F-71	Corn	5	0	0	X		10	50	
Waters, C. J.	-43	F-45	Corn	30	8	180			7	210	
			Beans	10	12	120			2	20	
Warren, J. H.	-47	F-14 & 14a	Corn	20	13	260			7	140	
			Beans	1 T	6	6T			0	0	
Wills, Earl & Mitchell	-45	27 & 30	Corn	20	33	660			5	120	
			Beans	10	13	130	31A.	turned under &			sowed to wheat.
Wilson, Reimon	-49	F-14	Corn	30	6	180			3	90	
White, R.	-53	F-1,2,3,4	Beans	XX 10	21	210			9	90	7 A. sowed to Rye.
Young, W. E.	-57	F-47	Corn	20	11	220			7	140	
			Beans	10	8	80			3	30	

Summary of Crops Grown:	Crop	Acreage	Permittee's Share		Government's Share		Total Revenue
			Acres	Bushels	Harvested Acres Bu.	Unharvested Acres Bu.	
	Corn	1,001	516	15,669			
	Beans	1,021	718	10,052			
	Wheat	17	17	146			
	<u>XX</u>	<u>11</u>	<u>11</u>	<u>11 T</u>	<u>227 A.</u>	<u>Cover crops planted</u>	
					<u>5 A.</u>	<u>Fame Red Top seeded</u>	
					<u>221 A.</u>	<u>Green Manure turned under</u>	

Interior Duplicating
Section, Wash.D.C.

DIRECTIONS FOR PREPARING FORM NR-8
CULTIVATED CROPS

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B-11-3
(2001 11/19/01)

3-1760
Form NR-10
(April 1946)

HAYING AND GRAZING

Refuge.....Mingo.....Year 194...52

Permittee	Permit No.	Unit or Location	Actual Acreage Utilized	Animal Use Months	Tons of Hay Harvested	Period of Use From - To	Rate	Total Income	Remarks
J. K. Back	<u>Mingo-</u> 82 & 97	H-10	55 A.		55	7/30/52 8/31/52	\$0.50	\$ 27.50	
L. Bruce	69 & 76	A-64 & 65	45 A.		45	7/22/52 8/1/52	0.50	22.50	
A. A. Burge	96	A-64	12 A.		12	8/20/52 8/30/52	0.50	6.00	
Troy Charles	77	H-10	50 A.		50	7/28/52 8/15/52	0.50	25.00	
D. Clodfelter	83	A-62	8 A.		8	7/31/52 8/5/52	0.50	4.00	
Odus Cookson	92	A-70	10 A.		10	8/18/52 8/30/52	0.50	5.00	
Ed Dennis	79	A-65	40 A.		40	7/28/52 8/15/52	0.50	20.00	
Ernest Fish	87	H-17	25		25	8/6/52 8/15/52	0.50	12.50	
C. V. Harper	84	A-65	15		15	8/5/52 8/15/52	0.50	7.50	
M. D. Haynie	95	H-10	20		20	8/18/52 8/31/52	0.50	10.00	
D. Hendershott	91	A-61	20		20	8/18/52 8/31/52	0.50	10.00	
Robert Irvin	74	H-10	10		10	7/26/52 8/15/52	0.50	5.00	
Glenn Jackson	78	H-10	15		15	7/28/52 8/15/52	0.50	7.50	

Continued to next sheet

Totals:

Acreage grazed.....

Animal use months.....

Total income Grazing.....

Acreage cut for hay.....

Tons of hay cut.....

Total income Haying.....

HAYING AND GRAZING

Refuge _____ Year 194

Permittee	Permit No.	Unit or Location	Actual Acreage Utilized	Animal Use Months	Tons of Hay Harvested	Period of Use From - To	Rate	Total Income	Remarks
Hardy Jacobs	85	H-10	75		75	8/5/52 8/15/52	\$0.50	\$ 37.50	
Arthur James	75	H-17	20		20	7/28/52 8/15/52	0.50	10.00	
Joe Kirkpatrick	80	H-10	100		100	7/30/52 8/15/52	0.50	50.00	
J. D. McLeary	68	H-10	100		100	7/21/52 8/10/52	0.50	50.00	
Talbert Moore	70 & 88	H-17 & H-18	62		62	7/23/52 8/15/52	0.50	31.00	
W. F. Moore	73	H-18	50		50	7/28/52 8/15/52	0.50	25.00	
John Payne	71	H-10	40		40	7/23/52 8/15/52	0.50	20.00	
M. C. Placher	89	A-62	10		10	8/8/52 8/15/52	0.50	5.00	
Frank Rowe	86	Sec. 9	25		25	8/5/52 8/15/52	0.50	12.50	
Ed Sherrell	67	H-10	50		50	7/21/52 8/5/52	0.50	25.00	
Fred G. Stephens	93	H-10	3		3	8/18/52 8/30/52	0.50	1.50	
William Stephens	90	H-10	40		40	8/11/52 8/15/52	0.50	20.00	
Leon Varble	72	A-69	28		28	7/28/52 8/15/52	0.50	14.00	
Claud Walk	94	H-10	12		12	8/18/52 8/31/52	0.50	6.00	

Totals:

Acreage grazed _____ Animal use months _____ Total income Grazing _____

Acreage cut for hay 940 Tons of hay cut 940 Total income Haying \$470.00

Picture taken from Hartz Hill looking Northwestward between ditches 3 & 4.

Water level at 335.00



Picture taken from Hartz Hill looking North toward Ditch # 3

Water elevation at 335.00

