ROUTING SLIP DIVISION OF WILDLIFE REFUGES DATE: June 21, 1946

MR. SALYER

MR. ~~KRUMES~~

MR. ~~DUMONT~~ PAD

SECTION OF HABITAT IMPROVEMENT:

~~Mr. Griffith~~ REG 7-1

~~Dr. Bourn~~ WSB 6-25

~~Miss Cook~~ mc 7/16

SECTION OF OPERATIONS:

Mr. Regan

Mr. Ball

Miss Baum

SECTION OF LAND MANAGEMENT:

Mr. ~~Krumes~~ Kent

~~Ackermeint~~

Mr. ~~Dumont~~ WCA

SECTION OF STRUCTURES:

~~Mr. Taylor~~ 7/9/46

STENOGRAPHERS:

REMARKS:

UPPER MISSISSIPPI NARRATIVE REPORT AND ANNUAL SUMMARY

JANUARY - APRIL 1946

Return to:

11528

SUMMARIZATION OF ACTIVITIES ON THE
UPPER MISSISSIPPI RIVER WILDLIFE AND FISH REFUGE
FROM MAY 1, 1945 to APRIL 30, 1946

- - - - -

Temperatures averaged a few degrees below normal for May and June; normal in July; above normal in August, September, and October; below normal in November and December; and the monthly average for January through April varied up to 10.8 degrees above normal. December was the coldest December in 18 years, while March was the third warmest recorded. Temperatures ranged from a high of 102 to 17 below during the year.

Precipitation averages were above normal for May, June, and July, causing high turbidity, retarded vegetative growth, and limited muskrat production. Normal water levels prevailed during August, with precipitation averages slightly below normal. September and October were also below the average for precipitation, while November, December, and January were above normal due to unseasonable rains, and together with high temperatures provided sufficient runoff to more than bring the pools to normal level after the winter drawdown ended January 4. Freezing temperatures during this period covered the river bottoms with ice, providing unfavorable conditions for muskrat and deer. The January level at Grafton, Illinois, was the highest for several years.

Ice began breaking up on the river March 2 and 3, or twelve days earlier than last year.

Summer breeding population of 1945 was about normal, with wood duck predominating. The fall flight of 1945 again showed a decrease of 30%, with mallard, pintail, baldpate, scaup, and coot showing the greatest decline. The 1946 spring flight showed a decline of 15% from the previous spring, mallard, pintail, scaup, and coot showing the greatest decreases. The fall goose flight appeared to have increased slightly, which was also true of the 1946 spring, although there was a 50% decrease in Canadas in Pool 26.

The varying egret population was concentrated in Pool 26, with about 3,000 during late summer and fall and 200 in the Lansing district, which represents increased use in this district. No breeders were observed this season. A single bird near Winona was the only one reported for the 1946 spring season.

Stable high water during the spring and summer limited millet and smartweed production, while wild rice was more abundant than for several years. American pondweed continued to spread, as did the undesirable lotus. Sago, sagittaria, and burreed produced good crops. Food and cover in Pool 26 was improved from a year ago, cyperus, millet, smartweed, and sago predominating. Due to turbidity and silt deposits

Swan Lake was barren. Spring food supplies were about normal and were available over the refuge due to the absence of floods.

Due to the limited amount of cover the refuge upland game bird population is very limited, with little change noticed except for a slight pheasant increase in the La Crosse district.

Deer continue to extend their range southward; and although the Wisconsin season tended to bring that portion of the refuge population down, it is estimated there is an excess of 250 deer on the area.

Due to the decrease in severity of the floods during the past year, conditions have been more favorable for muskrat, and a general increase, although slight, is noted. Winter drawdowns were also of a short duration this year, materially affecting the rat population.

A reasonably high population of mink was reduced by 975 during trapping season. Beaver continued a slight increase and extension of area utilized, although excellent trapping along adjoining areas was experienced the past season. Other furbearers remain about the same.

Commercial fishing continued on a large scale due to demand and high prices, and sport fishing was extremely popular although hampered by changing water levels. Winter fish loss due to drawdowns and weather severity appears to have been lessened due to unseasonable warm weather and precipitation.

Six hundred ninety pounds of aquatic seeds were planted on the refuge during the year, consisting principally of American pondweed, although including hard, soft and prairie bulrush, sago, and 4-square. Twelve bushels of sagittaria was collected for transfer.

Summary of economic use and fiscal remittances, including down payments made:

128 cords box bolts and fuel	$ 124.00
1,420,298 bd. ft. timber	11,887.40
734 AUMs grazing	367.00
34 tons hay	55.50
5210 trap tags	521.00
7 garden plots	7.00
10 cabin permits	285.00
5 fishing headquarters sites	200.00
1 sawmill site	25.00
1 marine railway use	10.00
1 pole storage	25.00
2 boathouse	30.00
Furs shipped	2.50 (Est.)
	$13,539.40

Mr. Edward G. Wellein continued an investigation of effects of pool drawdown on wildlife. Mr. Clair T. Rollings was assigned studies pertinent to the development of the Carroll County unit. Mr. Harry E. Adams returned from military furlough and resumed investigations on the Lower Pools. Mr. David V. Black was assigned as Forester on timber management studies on this refuge and also throughout the region.

Seventeen violation cases were successfully prosecuted in State Courts, resulting in a total of $625.00 fines and $96.33 costs.

Bartlett W. Foster,
Clerk, Acting in Charge.

UPPER MISSISSIPPI RIVER WILDLIFE AND FISH REFUGE
NARRATIVE REPORT
JANUARY, FEBRUARY, MARCH, APRIL, 1946

I. GENERAL

A. Weather Conditions:

Higher temperatures were recorded in January and April than a year ago. March was exceedingly mild, with only three days below normal. Temperatures averaged 12.9° above normal, with a monthly average at La Crosse, Wisconsin, of 44.4°, the third warmest March of record. At Dubuque, Iowa, the temperature ranged from a high of 81° on April 21 to a low of -11° on January 26. The most severe storm of the season occurred on March 8, when a snowfall of 9" was recorded, a high wind accompanying the snowfall.

Temperature and precipitation ranges are shown in the following table (Winona, Minnesota statistics):

		Temperature				Precipitation	
Month	Year	Max.	Min.	Mean	Normal	Total	Normal
January	1945	40	-14	15.8	14.1	.93	1.03
	1946	45	-17	18.15	14.1	1.68	1.03
February	1945	49	-10	20.55	18.9	4.50	1.01
	1946	51	-12	19.2	18.9	.52	1.01
March	1945	81	-2	43.29	32.3	2.06	1.62
	1946	80	4	43.1	32.3	1.91	1.62
April	1945	81	27	48.96	47.7	3.44	2.31
	1946	87	27	52.4	47.7	.61	2.31
Total	1945					10.93	5.97
	1946					4.72	

B. Water Conditions:

Winter drawdown of the pools was completed on January 4, and open river conditions prevailed. Unseasonable temperatures and heavy rains early in January restored the pools, and by the 10th normal pool levels or above were reached. Freezing temperatures covered the river bottoms with ice, and this condition proved unfavorable for muskrats and deer. The flood subsided by January 26.

Ice began breaking up on March 2 and 3, and within a few days the river was entirely free of ice.

The January flood was the highest recorded in that month at Grafton, Illinois, for several years--21.7 feet.

II. WILDLIFE

A. Migratory Birds:

1. Populations and Behavior:

(a) Waterfowl:

General

There was a general decrease in waterfowl of 15% this spring as compared to the same period of 1945. Goldeneyes were the only species to show an increase, and this was a nominal 10%. Mallard showed the greatest decrease of any species--20%. Pintail were down 10%, scaup down 10%, and coot decreased 10%.

The peak concentration occurred at the Swan Lake area near Grafton, Illinois, on February 27, an estimated 500,000. The birds began moving north the first week in March. On Swan Lake 130 Canada geese were observed as against 300 last year.

Seventy whistling swans arrived in Pool 5 near Weaver, Minnesota the first week of March and remained until the last week of March. Approximately the same number of these birds have frequented this same area for the past several years and remain about the same length of time.

Winona, Minnesota District

The arrival of spring migrants was about ten days earlier than normal, the first birds of any consequence arriving the first week of March. There was no marked movement of birds at any one time. A mallard nest with 10 eggs was observed April 15. The number of coot was definitely below normal.

La Crosse, Wisconsin District

Migrants began arriving the first week of March, and on March 13 the heaviest flights were observed. A survey of pools 5 to 10 was made by airplane on March 19, and concentrations of birds were observed in all areas with favorable habitat. By April 18 ducks were scarce, with the exception of blue-winged teal and wood duck. A nesting wood duck was observed occupying a nesting box in the Spring Slough area near Trempealeau. A flock of 40 snow geese and a few blue geese were in the Brice Prairie area for the greater part of April.

Lansing, Iowa District

Migrating ducks began arriving March 4. There were definitely less ducks than last year, except slightly more blue-winged teal.

Dubuque, Iowa District

The movement of migrating ducks began on March 4, and the reduction in numbers was notable. There appeared to be a slight increase in blue and snow geese. The absence of ducks on the river between Green Island in Jackson County and Turkey River in Clayton County was most unusual. It appears that for unknown reasons the birds by-passed this section of the river.

Lower Pools District (Pool 26)

Migrating mallards were observed on January 1, and increased in number until the peak concentration was reached on February 27. The numbers of ducks was some 10% less than last year. No swans were observed this year.

(b) Geese:

The spring flight of geese, never abundant, appears to have increased slightly, though there was a 50% decrease in Canada geese in Pool 26.

(c) Swans:

The spring migration of swans was about normal. Swans did not use the Spring Slough area this year, however. They were present in the Weaver bottoms of Pool 5 in about normal numbers. They appear to feed over Sagittaria beds.

(d) Egrets:

A single bird was observed near the Trempealeau Refuge on April 14, the only one reported during the report period.

(e) White Pelican:

No pelicans were reported to have been observed during the report period.

(f) Great blue herons:

No reports of early heron arrivals.

(g) Shore birds:

No change noted from reports.

2. Food and Cover:

Food appears to be in normal abundance. Food should have been available over most of the refuge because of the absence of floods. Mallards showed a preference for the timbered bottoms.

B. Upland Game Birds:

1. Populations and Behavior:

(a) Pheasants and Quail:

No change noted in pheasant and quail populations. The range for these birds is limited to a marked degree. Only a few margins afford favorable habitat.

(b) Ruffed grouse:

Few ruffed grouse occur on the Refuge as there is a very limited amount of suitable range.

C. Big Game Animals:

Deer continue to be abundant on the high ridges of the bottoms and on upland joining the refuge from Pools 4 to 10, inclusive. They seem to be extending their range southward.

D. Fur Animals:

(a) Muskrats:

The muskrat population continues low. However, conditions during the report period have been more favorable than for the past several years. We anticipate a substantial increase if conditions continue favorable. We do not anticipate an open trapping season during 1946.

(b) Mink:

The mink population should have been reduced as a result of the open trapping season. Conditions were favorable for trapping, and extremely high prices for pelts encouraged trappers. An average of $25.12 per skin was paid, with prices as high as $50.00 for a single skin. A total of 975 mink was taken on the refuge.

(c) Beavers:

Beaver continue to extend their range, though the number on the refuge has not materially increased.

During a Minnesota State open season of 20 days during December about 200 of these animals were taken on privately owned land adjacent to the refuge in Wabasha, Winona, and Houston Counties.

During the Wisconsin State season of 30 days approximately 1000 beavers were taken in Pepin and Buffalo Counties on privately owned land. Most of the animals were taken on streams tributary to the Mississippi River.

(d) Skunks:

Skunks continue to be scarce on the refuge. High water and flooding of practically the entire refuge hold these animals to a minimum.

(e) Raccoon:

Raccoon continue to be common on the refuge. Normal fluctuation in abundance occurs from year to year. The hunting of these animals has shown little effect in reducing numbers.

(f) Otter:

Otter are reported in normal abundance. A few scattered colonies, including one new one, are reported in the Sni Magill bottoms near McGregor, Iowa. An increase is also reported in the Twelve Mile Island area near Guttenberg, Iowa, and also in the Dago Slough area of Grant County, Wisconsin.

(g) Foxes:

No change in the red and grey fox population noted.

F. Fish:

Fish losses from pool drawdown and winter kill appears to have been less during the report period due to a shorter duration of the winter drawdown, mild weather, January thaw, and early break-up.

IV. ECONOMIC USES.

C. Fur Harvest:

Mink trapping under permit and trap tag identification was authorized on the refuge during the respective open State seasons. We attach a complete report of mink trapping.

D. Timber Removal:

Eleven permittees were authorized to engage in merchantable saw log harvest during the report period, cutting a total of 721,015 board feet of logs, for which there was collected and remitted to the Treasurer $6,091.43.

One permit authorized the cutting of box bolts, and 8 cords were cut, for which $8.00 was collected and remitted to the Treasurer.

Thirteen permits were issued authorizing cutting and removal of firewood. Fifty-five cords were cut, for which $53.50 was collected and remitted to the Treasurer.

E. Other Uses:

1. Cabin:

Two permits for maintaining and occupying cabins for recreational purposes were renewed, one at $25.00 and one at $15.00, for which the sum of $40.00 was remitted to the Treasurer. Five new permits were issued for the maintenance and occupancy of cabins for recreational purposes at a charge of $25.00 each, $125.00 being remitted to the Treasurer therefor.

2. Commercial Fishing Headquarters:

One permit was renewed for intermittently maintaining and operating a commercial fishing headquarters site, for which $25.00 was transmitted to the Treasurer. One new permit was issued for the operation and maintenance of a commercial fishing headquarters site, for which $50.00 was transmitted to the Treasurer.

3. Cottage frontage & boat landing:

One new permit was issued for the maintenance of cottage frontage and boat landing for recreational purposes, $40.00 being transmitted to the Treasurer therefor.

4. Garden:

Two permits were issued during this period for the maintenance of four garden plots, each approximately 50x100 feet. The sum of $4.00 was remitted to the Treasurer for these permits.

V. FIELD INVESTIGATIONS.

Edward G. Wellein continued investigations relative to the effect of pool drawdown on wildlife. Shaler Aldous spent January 8, 9, and 10 on the refuge investigating the muskrat situation, winter mortality, effects of winter drawdown. Several conferences were held with representatives of the War Department regarding pool drawdown, and many meetings with sportsmen were held, to say nothing of conferences with individuals.

David V. Black, who is serving as Forester, was engaged in promoting timber sales and revising the timber use policy.

Harry E. Adams returned to duty from the Navy March 18 and began investigations on the Lower Pools, giving the Keithsburg Drainage project special attention regarding development of the area as a sanctuary.

Clair T. Rollings was assigned to studies and investigation of development of the Carroll County Drainage District unit.

VI. PUBLIC RELATIONS.

B. Refuge Visitors:

On January 8 and 9 Mr. Day, Acting Director, held a conference at Hannibal, Missouri, regarding the Lower Pool land administrative problem, attended by Mr. Feast of Colorado, Mr. Bodie of Missouri, Messrs. Noren and Mottsheard of Bodie's staff, and Steele of the Upper Mississippi Refuge. The party conferred with War Department officials at St. Louis January 10.

January 8, 9 and 10 -- Mr. Shaler Aldous and Mr. Waxlax and Lt. Nord of the Corps of Engineers at St. Paul, visited the refuge, and in company with Messrs Ferguson and Wellein of the refuge staff investigated conditions relative to the effect of pool drawdown on muskrats and other furbearers.

January 24 -- Messrs. Walters and Waxlax, Captain Thompson, Captain Hanney, and Lt. Nord visited the refuge headquarters and conferred regarding the Corps of Engineers Master Recreational Plan.

February 1 -- Mr. Gillett, Refuge Supervisor, and Mr. Bartlett W. Foster of the Des Lacs Refuge visited headquarters regarding the transfer of Mr. Foster to this station.

February 5 -- Messrs. Elkins and Eustis of the Regional Office staff called at the refuge office regarding proposed flood control on the Mississippi River.

February 15 -- Mr. Joe Lingle of the Minnesota Conservation Commission, St. Paul, visited the refuge headquarters and conferred regarding construction plans for patrol boats on the Mississippi River.

February 18-20 -- Messrs. Janzen and Baetkey of the Regional Office made an inspection of the refuge office.

March 6 -- Mr. Gillett, Refuge Supervisor, called at the Refuge office.

March 7 -- Lt. Nord and Mr. Waxlax called at the refuge office regarding the Corps of Engineers Master Recreational Plan for Mississippi River.

March 18 -- Mr. Deerwester of the Wisconsin Conservation Commission, Madison, called at the refuge office regarding proposed licensing of War Department land.

April 15 -- Mr. Harold Peters, Flyway Biologist, Atlanta, Georgia, delivered Vultee L5 plane #720 at Winona. Mr. John Ball of the Central Office also arrived, and during the day instructed

pilots Wellein, Smith, Peters, and Ferguson regarding the operation and care of the planes, checking each of the pilots on test flights.

April 15 -- Harold Regan of the Central Office called at the office during the evening.

April 16 -- John Ball and the Superintendent flew to Minneapolis in the Vultee 720, returning to Winona later in the evening after conferring with the Regional Director and his staff.

April 22 -- Edward G. Wellein, pilot-biologist, left Winona with the Vultee 720 for permanent station at the Souris Refuge, North Dakota.

April 26 -- Doren E. Woodward of the Portland, Oregon, Regional Office, called at the office. Mr. Woodward was at one time engaged in land acquisition on the Refuge. Mrs. Woodward is also a former employee of the refuge office.

April 29 -- Robert M. Rutherford of the Central Office called at the office. Mr. Rutherford was a pioneer on the Upper Mississippi Refuge, being one of the original land acquisition employees.

C. Refuge Participation:

January 2 -- The Superintendent conferred with the Badger State Sportsmen's Club and Congressman Stevenson at La Crosse, Wisconsin, regarding the winter pool drawdown by the War Department.

March 19 -- The Superintendent, Messrs. Wellein, Black, and Ferguson, attended an all-day meeting of the Technical Game Committee of the Mississippi River Conservation Committee at La Crosse, Wisconsin, the Superintendent being the executive secretary of the Committee.

March 29 -- The Superintendent attended a conference with officials of the War Department at St. Paul regarding land and water management.

April 1 -- The Superintendent conferred with State officials and addressed the Wisconsin Duck Hunters Association at Milwaukee.

April 10 -- The Superintendent conferred with Iowa conservation officials, representatives of Iowa State College, and Thomas Scott of the Cooperative Unit at the State College, re setting up studies of muskrats under a Pittman-Robertson program.

E. Fishing:

Commercial fishing was carried on as usual, catches being satisfactory during the report period.

F. Violations:

Two offenders were arraigned in Wisconsin State Courts for trapping muskrats out of season and were fined $25.00 and $125.00, respectively, with costs of $7.93 and $8.85.

One offender was fined $50.00 with costs of $4.50 upon arraignment in Wisconsin State Court for shooting muskrat. His companion was not prosecuted due to being on a 3-day Army pass.

Upon arraignment in Wisconsin State Courts, two offenders were fined $50.00 each with $4.25 costs for illegal use of bait nets. The case was appealed to Circuit Court, and a fine of $75.00 and costs of $9.50 was assessed against each violator.

Two offenders were charged in Minnesota State Courts with taking of blue geese out of season and paid fines of $25.00 each and costs of $3.25 each.

Not previously reported were two cases tried in Minnesota State Courts for taking of waterfowl after sunset, which resulted in fines of $25.00 each being assessed, with costs of $5.10 and $6.10.

VII. OTHER ITEMS

B. Photographs:

See attached pages.

Dictated by: Ray C. Steele
Signed in his absence.

APPROVED:
REGIONAL DIRECTOR
JUN 19 1946

Herbert Webster
Clerk, Acting in Charge.

June 10, 1946.

E. G. Wellein, pilot, gassing up the NC-720 at Winona, Minn. 4/22/46.

Insignia on the NC-720 at Winona, Minn. 4/22/46.

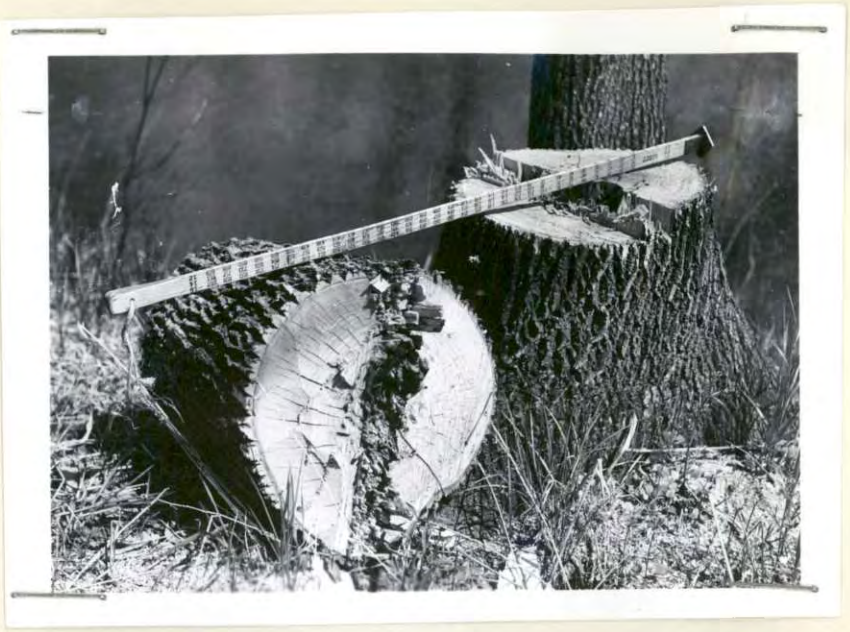
NC-720 at Winona, Minn. 4/22/46.

NC-720 at Winona, Minn. 4/22/46.

NC-720 taking off for Minot, North Dakota
4/22/46.

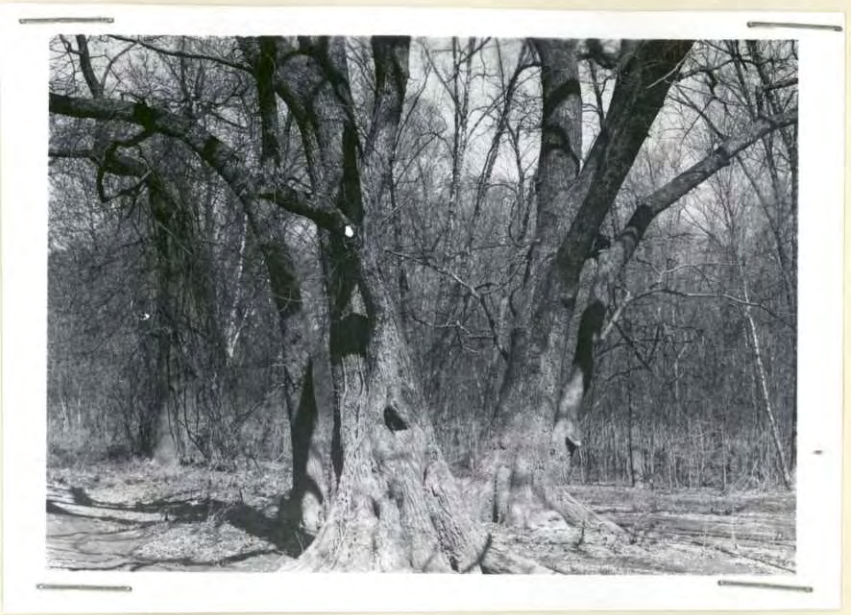
Log pile, mill, and pile of railroad ties manufactured and ready for shipment at Hutchison Bros. mill, Prairie du Chien, Wis. It is contemplated this outfit will log the Glen Park area this coming season. March 1946.

Truck converted for use at mill, handling slabs. This type vehicle is also used to handle logs, cross-ties and other material. It can be used in the woods to assist in the logging operation. Hutchison Bros. mill. March 1946.



Ash stump cut on Pine Island logging operation. About 18" of log was butted to clear the log of-stump rot, showing that the rot did not extend very far in this tree. April 1946.

Logs piled for scaling and subsequent removal to the mill. Pine Island logging operation. April 1946.



Typical old elm den trees on Pleasant Creek Bottoms area. April 1946.

Showing low-cut elm stump on Pine Island logging operation. Stump is 24" across and has 70 annual growth rings. April 1946.

Slash after 1945-46 logging operation in Pleasant Creek Bottoms area on private land. Action of water and subsequent drying when water level drops will hasten rotting process. April 1946.

Slash of cottonwood tree in Pleasant Creek Bottoms. Picture taken April, 1946--2 months after tree was cut.

An unusual sight, caused by the current scarcity of lumber. The owner of this property, who is building his own home, has set up a sawmill, visible in the picture, and sawed out his building lumber on the site from logs he had purchased. He is using oak lumber, and it will not have to be air-dried before use because the logs had been cut about 2 years before he sawed them. Near Whitman, Minn. April 1946.

A partial view of the sawmill of Fred Wyss at Cochrane, Wis. on the Burlington R.R. Mr. Wyss is the operator logging the refuge Pine Island timber area. April 1946.

Willow timber that has died due to overflow conditions. Refuge land in vicinity of Whitman, Minn. Average size 8" d.b.h.

Mixed dead timber of merchantable size, dead because of prolonged flooding. South of Weaver, Minn. The logging of such timber before it is killed will eliminate such waste. April 1946.

Overmature cottonwood that has died. Similar size green timber is now being cut to produce a revenue to the Government. Pine Island area. April 1946.

Double stump cut about 36" above ground level. This is often necessary where trees grow in this manner. The stump illustrated is of soft maple. Pine Island area. April 1946.

Typical timber stand in Pine Island area before cutting. April 1946.

Stand remaining after cutting has taken place in Pine Island Timber area.

Biltmore stick markings on marking axe to facilitate measuring tree diameters when marking trees for cutting.

Biltmore stick markings on marking axe to facilitate measuring tree diameters when marking trees for cutting.

Deck of logs covered with ice. Black River Bottoms, Wis. February 25, 1946.

Digging logs out with "cat". Note thickness of ice, top of pile showing through ice. Black River Bottoms, Wis. February 25, 1946.

Bucking logs out of ice with "cat". Black River Bottoms, Wis. Feb. 25, 1946.

Digging logs out of ice with "cat". Top of pile showing through ice. Black River Bottoms, Wis. Feb. 25, 1946.

Digging logs out of ice. This is all ice--no snow left on ground. Black River Bottoms. Feb.25,1946.

Deck of logs covered with ice as result of flood. Black River Bottoms, Wis. Feb. 25, 1946.

Digging logs out of ice with "cat". Black River bottoms. February 25, 1946.

Bucking logs out of ice with "cat". Black River bottoms. February 25, 1946.

3-1750
Form NR-1
(Nov. 1945)

WATERFOWL

Refuge Upper Mississippi Months of January to April, 1946

(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. Swans:									
Whistling swan	6	3/19	190	4/1	74	4/15			190
II. Geese:									
Canada goose	150	3/5	1,500	4/4	35	4/18			1,500
Cackling goose									
Brant									
White-fronted goose									
Snow goose	200	3/13	200	3/13	20	4/20			200
Blue goose	50	3/13	50	3/13	8	4/20			50
III. Ducks:									
Mallard	200	3/5	45,000	3/27	Still here				298,000
Black duck	300	3/13	20,000	3/27	Still here				40,000
Gadwall	20	3/19	5,000	4/24	Still here				20,000
Baldpate	500	3/13	30,000	3/27	150	4/25			75,000
Pintail	200	3/13	35,000	3/27	Still here				80,000
Green-winged teal	15	3/13	4,500	3/27	3	4/25			10,000
Blue-winged teal	100	4/1	5,000	4/5	Still here				50,000
Cinnamon teal									
Wood duck	4	3/13	20,000	3/27	Summer resident				20,000
Red head	125	3/19	1,500	3/27	10	4/18			7,000
Ring-necked duck	1,000	3/13	21,000	3/27	500	4/18			50,000
Canvas-back	50	3/19	500	3/27	40	4/10			1,000
Scaup	500	3/13	18,000	3/27	300	4/18			140,000
Golden-eye	12	1/7	2,500	1/26	20	3/30			2,500
Buffle-head	25	3/13	25	3/27	5	4/18			150
Ruddy duck	6	3/25	150	3/29	4	4/19			5,000
IV. Coot:	2	3/13	25,000	4/1	100	4/29			100,000

(over)

SUMMARIES

Total Production:

Geese.....

Ducks.....

Coots.....

Total waterfowl usage during period.....840,590.....

Peak waterfowl numbers.....235,115.....

Areas used by concentrations.....Pools 4 to 15.....

.....

Principal nesting areas this season.....Pools 13,10,9,8,7.....

.....

Reported by.....

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 <u>during the period</u>. 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 <u>Summaries</u> receive careful attention since these 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 Upper Mississippi Months of January to April, 1946

(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. Water and Marsh Birds:										
American egret	1	4/14	Late summer residents							
White pelican	None reported during period									
II. Shorebirds, Gulls and Terns:										

(over)

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

Reported by.....

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.

3-1750
Form NR-1
(Nov. 1945)

WATERFOWL

Refuge Lower Mississippi Pools Months of January to April, 1948.

(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. Swans:									
Whistling swan									
II. Geese:									
Canada goose	25	1/2	55	2/19	25	3/4			130
Cackling goose									
Brant									
White-fronted goose									
Snow goose									
Blue goose	50	1/2	55	2/19	55	2/19			105
III. Ducks:									
Mallard	5,000	1/2	200,000	2/27	25	4/17			509,260
Black duck									
Gadwall									
Baldpate	50	2/17	25,000	2/27	5	3/27			45,000
Pintail	100	1/24	300,000	2/27	6	4/8			396,500
Green-winged teal									
Blue-winged teal	50	4/3	5,000	4/16	200	4/30			10,900
Cinnamon teal									
Wood duck	20	2/27	4,000	3/12	4,000	summer residents			5,000
Red head									
Ring-necked duck									
Canvas-back	300	3/20	300	3/20	50	3/26			350
Scaup	25	1/2	5,000	2/19	10	4/30			10,700
Golden-eye									
Buffle-head									
Ruddy duck									
IV. Coot:	25	3/7	400,000	3/29	2	4/30			500,000

(over)

SUMMARIES

Total Production:

Geese.....

Ducks.....

Coots.....

Total waterfowl usage during period.....1,277,945.....

Peak waterfowl numbers.....939,410.....

Areas used by concentrations.....Pool 26.....

.....

Principal nesting areas this season.....

.....

Reported by.....

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 <u>during the period</u>. 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 <u>Summaries</u> receive careful attention since these 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 Lower Mississippi Poole Months of January to April, 1946

(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. Water and Marsh Birds:										
American egret	1	3/29	7	4/18	summer residents					8
II. Shorebirds, Gulls and Terns:										

(over)

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

Reported by.....

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.

Form NR-2 UPLAND GAME BIRDS 1613

Refuge Upper Mississippi Months of January to April, 1946

(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.
Ring-necked pheasant	5000	22.2							175	
Bob-white quail	5000	14							350	
Ruffed grouse									60	

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.

Form NR-2

UPLAND GAME BIRDS

Refuge Lower Mississippi Peals Months of January to April, 1946

(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.
Ring-necked pheasant	Marginal marsh								500	
Bob-white quail	Marginal marsh								5,000	

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.

Form NR-4

SMALL MAMMALS

Refuge Upper Mississippi April 30, 194 6

(1) Species	(2) Density		(3) Removals					(4) Disposition of Fur						(5)
								Share Trapping						
Common Name	Cover Types & Total Acreage of Habitat	Acres Per Animal	Hunting	Fur Harvest	Predator Control	For Re-stocking	For Research	Permit Number	Trappers' Share	Refuge Share	Total Refuge Furs Shipped	Refuge Income	Furs Donated	Furs Destroyed	Total Popula-tion
Muskrat	50,000	10													5,000
Mink	50,000	16.66													3,000
Beaver	20,000	22													900

REMARKS:

1615

INSTRUCTIONS

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

(1) SPECIES: Use correct common name. Example: Striped skunk, spotted skunk, short-tailed weasel, gray squirrel, fox squirrel, white-tailed jackrabbit, etc. (Accepted common names in current use are found in the "Field Book of North American Mammals" by H. E. Anthony and the "Manual of the Vertebrate Animals of the Northeastern United States" by David Starr Jordan. "List of North American Recent Mammals" by G. S. Miller, Jr., a very good reference, is now out of print, although a revision is scheduled for publication in the near future.)

(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, bottom land hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) REMOVALS: Indicate the total number under each category removed since April 30 of the previous year. Also show any removals not falling under heading listed.

(4) DISPOSITION OF FUR: On share-trapped furs list the permit number, trapper's share, and refuge share. Indicate the number of pelts shipped to market and the total income to the refuge by species, including share-trapped furs and furs taken by Service personnel. Total number of pelts of each species destroyed because of poor primness or damaged condition, and furs donated to institutions or other agencies should be shown in the column provided.

(5) TOTAL POPULATION: Estimated total population of each species reported on as of April 30.

REMARKS: Indicate inventory method(s) used, size of sample area(s), introductions, and any other pertinent information not specifically requested.

MINK TRAPPING DATA -- 1945-46 SEASON
Seasons: Minnesota-12/1/45-1/29/46; Wisconsin-12/1/45-2/28/46; Illinois-12/1/45-1/15/56.

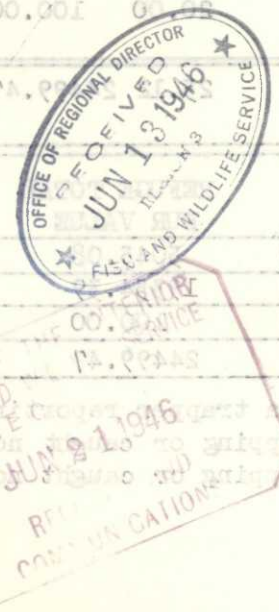
COUNTY	NO. OF REPORTS	MINK TAKEN	TRAPPERS TAKING MINK	AVERAGE PRICE	TOTAL PRICE	REFUGE TOTAL FUR VALUE	NO. TAGS USED**	TRAP TAG** FEES	AVERAGE TRAPS PER MINK**	AVERAGE TRAPS PER TRAPPER**	AVERAGE CATCH PER TRAPPER**	AVERAGE INCOME PER TRAPPER**	AVERAGE COST TAGS PER TRAPPER**	TOTAL TAGS	TOTAL COST TAGS
Wabasha	21	34	12	27.17	924.00	924.00	285	28.50	8.3	23.8	2.8	77.00	2.38	285	28.50
Winona	26	64	19	29.92	1915.10	1915.10	450	45.00	7.0	23.7	3.3	100.79	2.37	450	45.00
Houston	30	89	23	24.78	2205.98	2205.98	520	52.00	5.8	22.6	3.8	95.91	2.26	520	52.00
NO REPORT	x x x	x x x	x x x	x x x	x x x	x x x	x x x	x x x	x x x	x x x	x x x	x x x	x x x	50	5.00
NO TRAPPING	x x x	x x x	x x x	x x x	x x x	x x x	x x x	x x x	x x x	x x x	x x x	x x x	x x x	370	37.00
TOTAL FOR MINNESOTA	77	187	54	26.98	5045.08	5045.08	1255	125.50	6.7	23.2	3.4	93.42	2.32	1675	167.50
Buffalo	24	68	16	26.55	1806.00	1806.00	345	34.50	5.0	21.6	4.2	112.87	2.16	345	34.50
Trempealeau	9	19	5	29.87	550.60	550.60	64	6.40	3.3	12.8	3.8	110.12	1.28	64	6.40
Crawford	24	150	20	22.19	3329.83	3329.83	440	44.00	2.9	22.4	7.5	166.49	2.24	440	44.00
Grant	19*	69	13	20.92	1443.49	1443.49	229	22.90	3.3	17.6	5.3	111.03	1.76	229	22.90
LaCrosse	54*	339	45	26.02	8823.70	8823.70	1193	119.30	3.5	26.5	7.5	196.08	2.65	1193	119.30
Vernon	21*	138	16	24.64	3400.77	3400.77	317	31.70	2.2	19.8	8.6	212.54	1.98	317	31.70
NO REPORT	x x x	x x x	x x x	x x x	x x x	x x x	x x x	x x x	x x x	x x x	x x x	x x x	x x x	241	24.10
NO TRAPPING	x x x	x x x	x x x	x x x	x x x	x x x	x x x	x x x	x x x	x x x	x x x	x x x	x x x	646	64.60
TOTAL FOR WISCONSIN	151*	783	115	24.71	19354.39	19354.39	2588	258.80	3.3	22.6	6.8	168.29	2.26	3475	347.50
Carroll	1	0	0	0.00	0.00	0.00	0	0.00	--	--	--	--	--	--	--
Whiteside	2	5	1	20.00	100.00	100.00	20	2.00	4.0	20.0	5.0	100.00	2.00	20	2.00
NO REPORT	x x x	x x x	x x x	x x x	x x x	x x x	x x x	x x x	x x x	x x x	x x x	x x x	x x x	20	2.00
NO TRAPPING	x x x	x x x	x x x	x x x	x x x	x x x	x x x	x x x	x x x	x x x	x x x	x x x	x x x	20	2.00
TOTAL FOR ILLINOIS	3	5	1	20.00	100.00	100.00	20	2.00	4.0	20.0	5.00	100.00	2.00	60	6.00
TOTAL FOR REFUGE	231	975	170	25.12	24499.47	24499.47	3863	386.30	3.96	22.7	5.73	144.11	2.27	5210	521.00

STATE	AVERAGE PRICE	TOTAL PRICE	REFUGE TOTAL FUR VALUE	MINK TAKEN	PERMITS ISSUED	TRAPPING REPORTS	UNUSED PERMITS***	NO REPORT SUBMITTED	UNCLAIMED MAIL DECEASED, ETC.	PERCENTAGE OF RETURN OF REPORTS ON PERMITS
Minnesota	26.98	5045.08	5045.08	187	80	77	23	3	0	96.25
Wisconsin	24.71	19354.39	19354.39	783	155	143	37	12	3	90.32
Illinois	20.00	100.00	100.00	5	5	3	2	2	0	60.00
Refuge Total	25.13	24499.47	24499.47	975	240	223	62	17	3	91.66

* 8 of these reports represent a trapper reporting separately for activities in 2 or more counties.

** All reports indicating no trapping or caught nothing classed as "no trapping" and excluded in tabulations.

*** All reports indicating no trapping or caught nothing included in this category.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