UPPER MISSISSIPPI RIVER NWR NARRATIVE REPORT 1971

UPPER MISSISSIPPI RIVER WILD LIFE AND FISH REFUGE

Narrative Report

January - December, 1971

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

WATERFOWL

REFUGE Upper Mississippi River Wildlife and Fish Refuge MONTHS OF September TO December, 19 71

(1) Species	Weeks of reporting period (2) 1	2	3	4	5	6	7	8	9	10
Swans:										
Whistling						15	6		9	560
Trumpeter										
Geese:										
Canada	90	98	115	180	277	1,150	2,350	3,044	4,573	3,729
Cackling						10				
Brant										
White-fronted										
Snow					60	387	331	736	859	291
Blue					20	367	405	627	1,465	588
Other - Hutchins									20	30
Ducks:										
Mallard	15,850	16,950	17,550	18,400	18,780	20,910	32,165	39,745	54,020	55,030
Black	440	570	580	680	1,110	2,015	2,210	2,515	2,620	2,130
Gadwall	10	10	30	345	660	1,100	2,310	3,420	3,060	1,490
Baldpate	4,650	10,595	16,975	26,970	37,240	52,545	59,185	44,610	28,260	12,785
Pintail	360	370	715	1,550	3,785	5,250	7,560	4,985	5,260	3,370
Green-winged teal	1,295	1,350	2,410	2,605	5,990	4,565	3,415	4,660	3,530	2,455
Blue-winged teal	8,700	10,300	9,800	8,670	13,400	10,540	4,045	2,265	1,175	420
Cinnamon teal										
Shoveler	65	50	60	90	245	580	785	1,050	825	420
Wood	18,200	19,400	19,200	15,680	18,550	15,950	9,490	4,985	2,395	1,260
Redhead				5	20	155	3,850	2,930	3,935	2,415
Ring-necked			10	20	45	835	5,625	7,290	14,330	12,360
Canvasback					40	450	8,590	41,055	55,315	32,755
Scaup					700	9,060	26,860	34,120	48,290	55,325
Goldeneye									325	710
Bufflehead						10	150	2,580	3,145	3,745
Ruddy					10	170	445	1,285	1,885	1,845
Other - Merganser	550	550	455	400	445	360	355	310	210	345
w.w. scoter									5	5
old squaw										20
Coot:	1,950	7,500	30,500	48,400	62,000	120,850	174,000	172,700	140,860	46,800

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

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

WATERFOWL
(Continuation Sheet)

REFUGE Upper Mississippi River Wild Life and Fish Refuge MONTHS OF September TO December, 19 71

(1) Species	(2) Weeks of reporting period 11	12	13	14	15	16	17	18	(3) Estimated waterfowl days use	(4) Production Broods seen	Estimated total
Swans:											
Whistling	976	1,054	555	1,418	607	533	156	10	36,335		
Trumpeter											
Geese:											
Canada	3,196	3,270	2,055	1,680	1,109	1,088	291	90	184,981		
Cackling									30		
Brant											
White-fronted											
Snow	312	195	44	5	4				17,100		
Blue	530	300	65	7	5	2			23,112		
Other - Hutchins	20								450		
Ducks:											
Mallard	52,240	43,900	30,425	17,280	25,145	20,630	4,410	2,175	3,272,545		
Black	2,125	1,650	1,000	1,075	1,090	665	125	35	152,805		
Gadwall	1,215	640	160	140	40	20	5		97,665		
Baldpate	8,275	4,825	305	170	50	10			2,123,595		
Pintail	2,225	1,090	980	320	80	40			260,275		
Green-winged teal	1,550	790	185	25	25				239,505		
Blue-winged teal	130	30	10						478,830		
Cinnamon teal											
Shoveler	180	110							28,670		
Wood	530	310	30						866,220		
Redhead	1,365	765	330	80	30	5			109,410		
Ring-necked	11,150	6,840	1,480	1,155	1,430	610	20		431,185		
Canvasback	28,205	29,070	11,100	2,995	1,800	20			1,443,575		
Scaup	55,200	49,800	18,795	6,610	1,900	680	80	5	2,099,185		
Goldeneye	1,650	2,115	1,935	2,160	2,290	1,780	1,010	555	97,250		
Bufflehead	3,410	3,020	1,200	1,130	710	150	25		133,115		
Ruddy	1,225	610	170		35	15			52,520		
Other-Merganser	750	1,040	1,425	6,515	8,655	7,555	4,205	1,450	235,210		
w.w. scoter	20				10				270		
old squaw	20								280		
Coot:	15,750	9,675	1,550	695	380	130			5,730,060		

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans	36,335	1,418	
Geese	225,673	6,917	
Ducks	12,122,110	228,585	
Coots	5,730,060	174,000	

SUMMARY

Principal feeding areas _____

Principal nesting areas _____

Reported by _____

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

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

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

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

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

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

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

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

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

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

MIGRATORY BIRDS
(other than waterfowl)

Refuge Upper Mississippi Months of September to December 19~~4~~71

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date Wk. ended	Number	Date Wk. ended	Number	Date Wk. ended	Number Colonies	Total # Nests	Total Young	Estimated Number
I. Water and Marsh Birds:										
Holboell's Grebe										0
Horned Grebe	5	10/16	12	11/6	5	11/20				294
Eared Grebe										0
Pied-billed Grebe	560	Present	2,100	10/16	55	12/11				98,175
White Pelican	1	9/25	1	9/25&10/9	1	10/9				14
Double-crested Cormorant	80	Present	1,500	10/9	25	11/20				35,000
Great Blue Heron	3,655	Present	3,655	9/4	3	Present				160,846
Green Heron	1,530	Present	1,530	9/4-11	5	11/27				53,585
American Egret	1,300	Present	1,435	9/11	10	11/27				57,729
Black-crowned Night Heron	150	Present	150	9/4	10	10/30				4,655
Least Bittern	120	Present	120	9/4-18	5	11/6				4,165
American Bittern	100	Present	115	9/11	10	11/20				4,445
~~XXXXXXXXX~~ Common Loon	3	10/23	11	10/30	1	12/4				126
Virginia Rail	5	Present	30	9/25	10	10/2				455
Sora Rail	5,780	Present	16,260	9/25	5	11/27				430,325
Yellow-crown night heron	61	Present	61	9/4	5	10/16				1,967
II. Shorebirds, Gulls and Terns:										
Killdeer	1,175	Present	1,380	9/11	5	Present				62,580
Wood cock	70	Present	90	10/2	5	11/6				3,675
Common Snipe	525	Present	1,775	10/2	12	Present				78,722
Yellow-legs sp.	1,080	Present	1,240	9/18	25	11/27				47,250
Herring Gull	505	Present	1,345	11/6	55	Present				88,445
Ring-billed Gull	1,425	Present	5,650	11/6	425	Present				408,870
Franklin's Gull	2	Present	100	9/25	5	12/25				5,159
Common Tern	160	Present	305	9/25	25	11/20				12,390
Caspian Tern	8	Present	37	9/25	2	10/16				812
Black Tern	1,090	Present	1,090	9/4	10	10/30				23,275
Sandpipers sp.	2,050	Present	2,500	9/25	50	11/20				111,895
Avocet	7	9/18	7	9/18	7	9/18				49
Dowitcher	100	10/23	100	10/23-11/6	100	11/6				2,100

(over)

(1)	(2)		(3)		(4)		(5)			(6)
		Wk. ended		Wk. ended		Wk. ended				
III. Doves and Pigeons:										
Mourning dove	3,170	Present	3,170	9/4	255	Present				115,430
White-winged dove										0
IV. Predaceous Birds:										
Golden eagle	1	11/6	2	11/27	1	Present				63
Duck hawk										0
Horned owl	271	Present	271	9/4-11	246	Present				31,521
~~Marsh~~ Osprey	3	Present	14	9/18-25	1	11/6				441
Raven										0
Crow	3,200	Present	4,175	9/25	1,475	Present				351,610
Bald Eagle	1	9/11	260	12/25	227	Present				9,170
Snowy Owl	1	11/27	1	11/27	1	11/27				7
Barred Owl	375	Present	380	9/11	355	Present				45,150
Screech Owl	140	Present	140	9/4	130	Present				16,485
Red-tailed Hawk	220	Present	260	10/9	110	Present				21,525
Red-shouldered Hawk	22	Present	23	9/18-25	4	Present				1,449
Rough-legged Hawk	10	Present	40	11/13	28	Present				2,667
Marsh Hawk	55	Present	95	10/2	42	Present				7,826
~~Turkey Vulture~~	~~165~~	~~Present~~	~~185~~	~~9/11-18~~	~~15~~	~~11/20~~				~~8,645~~
Black Vulture										

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.

3-1750c
Form NR-10
(Sept. 1960)

WATERFOWL HUNTER KILL SURVEY

Refuge Upper Mississippi River Wild Life and Fish Refuge

Year 196 71

(1) Weeks of Hunting	(2) No. Hunters Checked	(3) Hunter Hours	(4) Waterfowl Species and Nos. of Each Bagged	(5) Total Bagged	(6) Crippling Loss	(7) Total Kill	(8) Est. No. of Hunters	(9) Est. Total Kill
10/2-8		2,296 hunted 9,379 hours	1,640 BWTeal; 1,204 Woodies; 765 Mallard; 391 GWTeal; 136 Baldpate; 28 Pintail; 23 Black; 18 Gadwall; 5 Shoveller; 4 Ringneck; 2 ea. Canvasback, Scaup, Merganser; 1 Bufflehead (214 Coot)	2,431 got 4,221 ducks & 214 coot	2,417 lost 902 ducks			
10/9-15		564 hunted 2,322 hours	185 Mallard; 114 Baldpate; 102 BWTeal; 75 Woodies; 53 GWTeal; 27 Pintail; 8 Scaup; 7 ea. Gadwall & Ringneck; 6 Black; 2 Redhead; 1 each Canvasback & Ruddy (85 Coot)	569 got 588 ducks & 85 coot	562 lost 103 ducks			
10/16-22		296 hunted 1,149 hours	66 Mallard; 32 Baldpate; 22 BWTeal; 21 GWTeal; 16 Woodies; 14 Ringneck; 13 Pintail; 8 Gadwall; 5 Scaup; 4 ea. Bufflehead, Redhead & Canvasback; 2 Shoveller; 1 Black (29 Coot)	296 got 212 ducks+ 29 Coot	296 lost 47 ducks			
10/23-29		568 hunted 2,863 hours	181 Woodies; 117 Mallard; 51 GWTeal; 43 BWTeal; 38 Baldpate; 18 Scaup; 13 ea. Pintail & Gadwall; 10 Ringneck; 7 Canvasback; 4 Shoveller; 3 Bufflehead; 2 ea. Ruddy and Black; 1 ea. Redhead & Merganser (35 Coot)	568 got 504 ducks 35 Coot	568 lost 84 ducks			
10/30-11/5		425 hunted 1,624 hours	157 Mallard; 61 Woodies; 45 Scaup; 35 BWT; 33 Baldpate; 28 GWTeal; 23 Ringneck; 12 Canvasback; 11 Pintail; 10 Gadwall; 6 Redhead; 3 Black; 2 Shoveller; 1 ea. Goldeneye and Bufflehead (27 Coot)	425 got 428 ducks 27 coot	419 lost 72 ducks			
11/6-12		314 hunted 1,131 hours	120 Mallard; 47 Scaup; 25 Canvasback; 8 Baldpate; 7 GWTeal; 5 Black; 4 ea. Redhead Merganser & Goldeneye; 3 ea. Gadwall, Pintail & Ringneck; 2 ea. Bufflehead & Woodie 1 BWTeal (22 Coot)	315 got 238 ducks 22 coot	314 lost 48 ducks			

(over)

INSTRUCTIONS

(1) The first week of hunting begins with opening day and ends at the close of hunting 6 days later. Successive weeks follow the same pattern.

(2) The goal is to survey a minimum of 25 percent of refuge hunters each week and to record data only from those who have completed their day's hunting. This information should be collected during each day of the week and in each area hunted in relative proportion to the hunter effort expended. When the 25 percent goal cannot be achieved, particular care should be taken to collect representative data.

(3) Record the total number of hours the hunters spent hunting on the refuge.

(4) List waterfowl species in decreasing order of numbers bagged. Sample entry: Mallard (61), Pintail (36), Redhead (16), Gadwall (11), Widgeon (6), Coot (4), Canada Goose (3), Green-winged Teal (1).

(5) Record total numbers of waterfowl bagged.

(6) Record total numbers of waterfowl reported knocked down but not recovered.

(7) Total of Columns 5 and 6.

(8) Estimate the total number of hunters who hunted on the refuge during the week, including hunters checked (Column 2).

(9) Kill sample projected to 100 percent. Column 9 = $\frac{\text{Column 8}}{\text{Column 2}}$ x Column 7.

3-1750c
Form RF-1C
(Sept. 1960)

WATERFOWL HUNTER KILL SURVEY

Refuge Upper Mississippi River Wild Life and Fish Refuge

Year 19~~6~~71

(1) Weeks of Hunting	(2) No. Hunters Checked	(3) Hunter Hours	(4) Waterfowl Species and Nos. of Each Bagged	(5) Total Bagged	(6) Crippling Loss	(7) Total Kill	(8) Est. No. of Hunters	(9) Est. Total Kill
11/13-19		212 hunted 856 hours	99 Mallard; 25 Scaup; 7 Baldpate; 6 Goldeneye; 4 Ringneck; 3 ea. Pintail & Black; 2 ea. Gadwall, GWTeal, Shoveller, Canvasback & Bufflehead; 1 Redhead (2 Coot)	212 got 158 ducks 2 coot	212 lost 16 ducks			
11/20-26		17 hunted 106 hours	17 Mallard; 4 ea. Scaup & Bufflehead; 2 Pintail; 1 ea. Black, Baldpate and Goldeneye	17 got 30 ducks & 0 coot	17 lost 7 ducks			
Season TOTAL:	4,692 hunted	19,430 hours	1,843 BWTeal; 1,539 Woodies; 1,526 Mallard 553 GWTeal; 369 Baldpate; 154 Scaup; 100 Pintail; 65 Ringneck; 61 Gadwall; 53 Cans; 44 Black; 18 Redhead; 17 Bufflehead; 15 Shoveller; 12 Goldeneye; 7 Merganser; 3 Ruddy	4,833 hunters bagged 6,379 ducks	4,805 lost 1,279 ducks	4,833 killed 7,665 ducks	82,613 Regular Season	130,941 Regular Season

(over)

INSTRUCTIONS

(1) The first week of hunting begins with opening day and ends at the close of hunting 6 days later. Successive weeks follow the same pattern.

(2) The goal is to survey a minimum of 25 percent of refuge hunters each week and to record data only from those who have completed their day's hunting. This information should be collected during each day of the week and in each area hunted in relative proportion to the hunter effort expended. When the 25 percent goal cannot be achieved, particular care should be taken to collect representative data.

(3) Record the total number of hours the hunters spent hunting on the refuge.

(4) List waterfowl species in decreasing order of numbers bagged. Sample entry: Mallard (61), Pintail (36), Redhead (16), Gadwall (11), Widgeon (6), Coot (4), Canada Goose (3), Green-winged Teal (1).

(5) Record total numbers of waterfowl bagged.

(6) Record total numbers of waterfowl reported knocked down but not recovered.

(7) Total of Columns 5 and 6.

(8) Estimate the total number of hunters who hunted on the refuge during the week, including hunters checked (Column 2).

(9) Kill sample projected to 100 percent. Column 9 = $\frac{\text{Column 8}}{\text{Column 2}}$ x Column 7.

3-1752
Form NR-2
(April 1946)

UPLAND GAME BIRDS

Refuge Upper Mississippi Refuge Months of September to December, 19 71

(1) Species	(2) Density	(3) Young Produced			(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres Per Bird	Number broods observed	Estimated Total	Percentage	Hunting	For Re-stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Ring-necked pheasant	1,000					45			189	
Ruffed grouse	5,288					40			345	
Bob-white quail	5,288					40			135	
Gray partridge	5,288					10			30	
Wild turkey	5,000					0			4	

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 Upper Mississippi Refuge Calendar Year 1971

(1) Species	(2) Density	(3) Young Produced	(4) Removals				(5) Losses			(6) Introductions		(7) Estimated Total Refuge Population		(8) Sex Ratio
Common Name	Cover types, total Acreage of Habitat	Number	Hunting	For Re-stocking	Sold	For Research	Predation	Disease	Winter Loss	Number	Source	At period of Greatest use	As of Dec. 31	
White-tailed deer	Bottomland hardwoods and adjacent marshes	235	150				15	3	30			765	450	

Remarks:

Reported by _____

INSTRUCTIONS

Form NR-3 - BIG GAME

(1) SPECIES: Use correct common name; i.e., Mule deer, black-tailed deer, white-tailed deer. It is unnecessary to indicate sub-species such as northern or Louisiana white-tailed deer.

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

(3) YOUNG PRODUCED: Estimated total number of young produced on refuge.

(4) REMOVALS: Indicate total number in each category removed during the year.

(5) LOSSES: On the basis of known records or reliable estimates indicate total losses in each category during the year.

(6) INTRODUCTIONS: Indicate the number and refuge or agency from which stock was secured.

(7) TOTAL REFUGE POPULATION: Give the estimated population of <u>each species</u> on the refuge at period of its greatest abundance and also as of Dec. 31.

(8) SEX RATIO: Indicate the percentage of males and females of each species as determined from field observations or through removals.

17060

3-1755
Form NR-5

DISEASE

Refuge Upper Mississippi Refuge Year 19 71

Botulism NONE

Period of outbreak _____

Period of heaviest losses _____

Losses:

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

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

Areas affected (location and approximate acreage) _____

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

Condition of vegetation and invertebrate life _____

Remarks _____

Lead Poisoning or other Disease NONE

Kind of disease _____

Species affected _____

Number Affected

Species	Actual Count	Estimated

Number Recovered _____

Number lost _____

Source of infection _____

Water conditions _____

Food conditions _____

Remarks _____

INT.-DUP., D.C.- 53818-59

3-1757
Form NR-7
(Rev. June 1960)

(1)

NONAGRICULTURAL COLLECTIONS, RECEIPTS, AND PLANTINGS

Refuge Upper Mississippi Refuge Year 19 71

	Collections and Receipts (Seeds, rootstocks, trees, shrubs)						Plantings (Marsh - Aquatic - Upland)						
Species	Amount (Lbs., bus., etc.)	(2) C or R	Date	Method or Source	Cost	(3) Total Amount on Hand	Location of Area Planted	Rate of Seeding or Planting	Amount Planted (Acres or Yards of Shoreline)	Amount and Nature of Propagules	Date	Survival	Cause of Loss
German Millet							Spring Lake Marsh	20 lbs/ac	12 ac.		6/25-7/12	4 ac.	Washed out by heavy rains

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

Total acreage planted:
Marsh and aquatic 12
Hedgerows, cover patches
Food strips, food patches
Forest plantings

Remarks:

76148

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

Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge Upper Mississippi Refuge County Wabasha State Minnesota

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure, Cover and Water-fowl Browsing Crops Type and Kind	Total Acreage
			Harvested		Unharvested				
	Acres	Bu./Tons	Acres	Bu./ Tons	Acres	Bu. /Tons			
								Fallow Ag. Land.	

No. of Permittees: Agricultural Operations _____ Haying Operations _____ Grazing Operations 1

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	Grazing	Number Animals	AUM'S	Cash Revenue	ACREAGE
				1. Cattle	40	20	$ 20.00 to Corps of Engineers	
				2. Other				
				1. Total Refuge Acreage Under Cultivation				
Hay - Wild				2. Acreage Cultivated as Service Operation				

DIRECTIONS FOR PREPARING FORM NR--8'
CULTIVATED CROPS - HAYING - GRAZING

Report Form NR-8 should be prepared on a calendar-year basis for all crops which were planted during the calendar year and for haying and grazing operations carried on during the same period.

Separate reports shall be furnished for Refuge lands in each county when a refuge is located in more than one county or State.

Cultivated Crops Grown - List all crops planted, grown and harvested on the refuge during the reporting period regardless of purpose. Crops in kind which have been planted by more than one permittee or this Service shall be combined for reporting purposes.

Permittee's Share - Only thenumber of acres utilized by the permittee for his own benefit should be shown under the Acres column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the Bushels Harvested column. Report all crops harvested in bushels or fractions thereof except such crops as silage, watermelons, cotton, tobacco, and hay, which should be reported in tons or fractions thereof.

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Total Acreage Planted - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops Specify the acreage kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

Hay - Improved - List separately the kinds of improved hay grown. Annual plantings should also be reported under Cultivated Crops, and perennial hay should be listed in the same manner at time of planting

Total Refuge Acreage Under Cultivation Report total land area devoted to agricultural purposes during the year.

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

Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge Upper Mississippi Refuge County Houston State Minnesota

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure, Cover and Water-fowl Browsing Crops Type and Kind	Total Acreage
			Harvested		Unharvested				
	Acres	Bu./Tons	Acres	Bu./ Tons	Acres	Bu. /Tons			
								Fallow Ag. Land.	

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

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	Grazing	Number Animals	AUM'S	Cash Revenue	ACREAGE
				1. Cattle	30	90	$ 84.00 to 21.00 to	Corps of Engineers Bureau
				2. Other				
				1. Total Refuge Acreage Under Cultivation				
Hay - Wild				2. Acreage Cultivated as Service Operation				

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CULTIVATED CROPS - HAYING - GRAZING

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Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge Upper Mississippi Refuge County Buffalo State Wisconsin

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure, Cover and Water-fowl Browsing Crops Type and Kind	Total Acreage
			Harvested		Unharvested				
	Acres	Bu./Tons	Acres	Bu./ Tons	Acres	Bu. /Tons			
								Fallow Ag. Land.	

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

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	Grazing	Number Animals	AUM'S	Cash Revenue	ACREAGE
				1. Cattle	60	27½	27.50	to Corps of Eng.
				2. Other				
				1. Total Refuge Acreage Under Cultivation				
Hay - Wild				2. Acreage Cultivated as Service Operation				

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Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge Upper Mississippi Refuge County Vernon State Wisconsin

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure, Cover and Water-fowl Browsing Crops Type and Kind	Total Acreage
			Harvested		Unharvested				
	Acres	Bu./Tons	Acres	Bu./ Tons	Acres	Bu. /Tons			
								Fallow Ag. Land.	

No. of Permittees: Agricultural Operations _____ Haying Operations _____ Grazing Operations 3

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	Grazing	Number Animals	AUM'S	Cash Revenue	ACREAGE
				1. Cattle	82	257½	$257.50 to	Corps of Engineers
				2. Other				
				1. Total Refuge Acreage Under Cultivation				
Hay - Wild				2. Acreage Cultivated as Service Operation				

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CULTIVATED CROPS - HAYING - GRAZING

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Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge Upper Mississippi Refuge County Grant State Wisconsin

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			Harvested		Unharvested				
	Acres	Bu./Tons	Acres	Bu./ Tons	Acres	Bu. /Tons			
Corn	27½	1,650 bu.			7½	450 bu.		alfalfa (cover)	8
alfalfa					8		43		
								Fallow Ag. Land.	0

No. of Permittees: Agricultural Operations 3 Haying Operations 0 Grazing Operations 0

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	Grazing	Number Animals	AUM'S	Cash Revenue	ACREAGE
				1. Cattle				
				2. Other				
				1. Total Refuge Acreage Under Cultivation				
Hay - Wild				2. Acreage Cultivated as Service Operation				

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3-1758
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Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge Upper Mississippi Refuge County Clayton State Iowa

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure, Cover and Water-fowl Browsing Crops Type and Kind	Total Acreage
			Harvested		Unharvested				
	Acres	Bu./Tons	Acres	Bu./ Tons	Acres	Bu. /Tons			
Corn	102	7,220	10	650	14	980	126		126
								Fallow Ag. Land.	40

No. of Permittees: Agricultural Operations 5 Haying Operations 0 Grazing Operations 0

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	Grazing	Number Animals	AUM'S	Cash Revenue	ACREAGE
				1. Cattle				
				2. Other				
				1. Total Refuge Acreage Under Cultivation				126
Hay - Wild				2. Acreage Cultivated as Service Operation				

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Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge Upper Mississippi Refuge County Clinton State Iowa

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure, Cover and Water-fowl Browsing Crops Type and Kind	Total Acreage
			Harvested		Unharvested				
	Acres	Bu./Tons	Acres	Bu./ Tons	Acres	Bu. /Tons			
Corn	12	1,200 bu.	4	400 bu.			16		
								Fallow Ag. Land.	1

No. of Permittees: Agricultural Operations 1 Haying Operations 0 Grazing Operations 0

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	Grazing	Number Animals	AUM'S	Cash Revenue	ACREAGE
None				1. Cattle				
				2. Other				
				1. Total Refuge Acreage Under Cultivation				17
Hay - Wild				2. Acreage Cultivated as Service Operation				0

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CULTIVATED CROPS - HAYING - GRAZING

Refuge Upper Mississippi Refuge County Jackson State Iowa

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure, Cover and Water-fowl Browsing Crops Type and Kind	Total Acreage
			Harvested		Unharvested				
	Acres	Bu./Tons	Acres	Bu./ Tons	Acres	Bu. /Tons			
Corn	8.4	294 bu.			4.2	147 bu.	12.6	Rye	79
								Fallow Ag. Land.	

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

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	Grazing	Number Animals	AUM'S	Cash Revenue	ACREAGE
				1. Cattle				
				2. Other				
				1. Total Refuge Acreage Under Cultivation				91.6
Hay - Wild	0			2. Acreage Cultivated as Service Operation				0

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Fish and Wildlife Service Branch of Wildlife Refuges

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Refuge Upper Mississippi Refuge County Carroll State Illinois

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			Harvested		Unharvested				
	Acres	Bu./Tons	Acres	Bu./ Tons	Acres	Bu. /Tons			
Corn	45.5	1,508 bu.			23	660 bu.	68.5	Rye	10
Soybeans	33	660 "					33		
Oats	16	320 "					16		
Potter's cash rental above included:									
	Corn	- 16.5 acres							
	Soybeans	- 23 "							
	Rye	- 10 "							
	Oats	- 16 "							
								Fallow Ag. Land.	

No. of Permittees: Agricultural Operations 3 Haying Operations 2 Grazing Operations 1

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	Grazing	Number Animals	AUM'S	Cash Revenue	ACREAGE
Alfalfa	8	4.	0	1. Cattle	10	Potter's cash rental		
"	0	14.6	Potter's cash rental	2. Other	0			
				1. Total Refuge Acreage Under Cultivation				146.1
Hay - Wild	0			2. Acreage Cultivated as Service Operation				0

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3-1570
NR-8a
(4/54)

REFUGE GRAIN REPORT

Refuge Upper Mississippi Refuge Months of January through December, 1971

(1) Variety*	(2) On Hand Beginning of Period	(3) Received During Period	(4) Total	(5) Grain Disposed of				(6) On Hand End of Period	(7) Proposed or Suitable Use*		
				Transferred	Seeded	Fed	Total		Seed	Feed	Surplus
Ear corn	110	0	110	0	0	80	80	30		30	
Proso millet	½		½			½	½	0			
German millet	110		110	10	40	20	70	40	30	10	
Shelled corn	930	400	1,340			320	320	1,020		1,020	

(8) Indicate shipping or collection points

(9) Grain is stored at District grain bins

(10) Remarks Corn to be used for wood duck banding

*See instructions on back.

REFUGE GRAIN REPORT

This report should cover all grain on hand, received, or disposed of, during the period covered by this narrative report.

Report all grain in bushels. For the purpose of this report the following approximate weights of grain shall be considered equivalent to a bushel: Corn (shelled)—55 lb., corn (ear)—70 lb., wheat—60 lb., barley—50 lb., rye—55 lb., oats—30 lb., soy beans—60 lb., millet—50 lb., cowpeas—60 lb., and mixed—50 lb. In computing volume of granaries, multiply the cubic contents (cu. ft.) by 0.8 bushels.

(1) List each type of grain separately and specifically, as flint corn, yellow dent corn, square deal hybrid corn, garnet wheat, red May wheat, durum wheat, spring wheat, proso millet, combine milo, new era cowpeas, mikado soy beans, etc. Mere listing as corn, wheat, and soybeans will not suffice, as specific details are necessary in considering transfer of seed supplies to other refuges. Include only domestic grains; aquatic and other seeds will be listed on NR–9.

(3) Report all grain received during period from all sources, such as transfer, share cropping, or harvest from food patches.

(4) A total of columns 2 and 3.

(6) Column 4 less column 5.

(7) This is a proposed break-down by varieties of grain listed in column 6. Indicate if grain is suitable for seeding new crops.

(8) Nearest railroad station for shipping and receiving.

(9) Where stored on refuge: "Headquarters granary," etc.

(10) Indicate here the source of grain shipped in, destination of grain transferred, data on condition of grain, unusual uses proposed.

INT.-DEP. SEC., WASH., D.C. 17065

3-1761
Form NR-11

TIMBER REMOVAL

Refuge Upper Mississippi Refuge Year 1971

Permittee	Permit No.	Unit or Location	Acreage	No. of Units Expressed in B. F., ties, etc.	Rate of Charge	Total Income	Reservations and/or Diameter Limits	Species Cut
Herbert Bailey Lansing, Iowa	512	Pool 9		Dead & down firewood		$ 5.00		

Total acreage cut over.....

Total income.....

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

Method of slash disposal.....

NARRATIVE REPORT

UPPER MISSISSIPPI RIVER NATIONAL WILDLIFE REFUGE

WINONA OFFICE

JANUARY - DECEMBER, 1971

United States Department of the Interior

Fish and Wildlife Service

Bureau of Sport Fisheries and Wildlife

Winona, Minnesota

REFUGE PERSONNEL

Donald V. Gray	Refuge Manager
Dr. William E. Green	Wildlife Biologist (Management)
Kenneth K. Krumm (Ret. 5/28/71)	Asst. Refuge Manager
Donald G. Young (e.o.d. 8/9/71)	Asst. Refuge Manager
Bartlett W. Foster	Biological Technician
Jay E. Hamernick	Public Use Specialist
Duncan E. Green	Maintenanceman
Benjamin R. Chio (e.o.d. 3/10/71)	Sign Shop Foreman
William W. Shaw	Carpenter
Lorraine A. Joswick	Clerk-Steno

Jerry F. Leinecke	Refuge Manager, Winona District
Eric B. Lawson (Ret. 1/9/71)	Refuge Manager, La Crosse "
Matthias A. Kerschbaum (e.o.d. 1/11/71)	Refuge Manager, La Crosse "
David J. Mickelson	Refuge Manager, Lansing "
Jeffrey P. Smith	Refuge Manager, Guttenberg "
William H. Hutchinson	Refuge Manager, Cassville "
Jay R. Bellinger	Refuge Manager, Savanna "

1971 Summer Student Staff

Janet M. Smith	Biological Aid	Winona District
Lawrence E. Nelson	Biological Aid	Winona "
Robert G. Litke	Conservation Aid	LaCrosse "
James M. Mick	Biological Aid	Lansing "
George T. Moylan III	Biological Aid	Guttenberg "
Mark D. Wagner	Biological Aid	Cassville "
Steven D. Lekwa	Biological Aid	Savanna "

Each District Manager has prepared his own report for his District.

C O N T E N T S

Weather 1971—

Lots of snow and a flood that 'didn't'

Most of 1971's weather news was packed into the first four months of the year, and was concerned mostly, in one way or another, with a flood that didn't.

The weather grabbed front page headlines early in the year when the area was smothered by a blizzard that had left 15 1/5 inches of snow by the morning of Jan. 4, the greatest amount ever to have been measured during a 24-hour period in Winona.

And the snow continued with wearisome regularity until there was an accumulation of 32 inches by month's end.

WHEN Winonans — mindful of previous years when heavy winter snow had spawned spring floods — weren't busy plowing out fresh snowdrifts or talking about the most recent storm, they were contemplating the possibility of the Mississippi River and tributary streams rising to danger levels during the forthcoming breakup period.

By early March, validity was given to the fears of the amateur prognosticators when the U.S. Weather Service issued an advisory warning that the potential for moderate to severe flooding existed along the Root and Zumbro rivers .

This was followed a week later by an even more ominous report by the Minneapolis Weather Bureau's river expert, Joseph Strub Jr., that even under the most favorable conditions that could prevail during the spring runoff period, the Mississippi was almost certain to crest at at least 18 feet, or five feet over flood stage.

Moreover, Strub warned, if the vast basin that feeds the Mississippi were to absorb 1.5 inches or more of moisture during the next few weeks, a stage approximating the alltime high of 20.75 of 1965 was likely.

THE immediate response to this flood alert was a flurry of activity in river communities where planning was initiated to bolster flood defenses and resources mobilized to combat the threat of high water.

But, then, the weather's hitherto vicious mien turned to a gentler mood. An extended period of unseasonably mild temperatures ate away the once towering snow banks and an almost unbelievable combination of ideal conditions made for a gradual runoff and absorption of the snow melt.

Strub's subsequent predictions of river crests became more optimistic — it was discovered, among other things, that the frost depth was not as great as had been estimated and created a greater holding power for the melted snow—and there were successive downward revisions in the forecast peak levels.

As mid-April approached it became increasingly obvious to relieved riverfront communities that predicted high water marks would not be reached and when the crest finally arrived at Winona the Mississippi topped off on the night of April 17 at a compartively modest 14.34 feet, less than 1½ feet over flood stage.

A day earlier, when the river had edged toward the 13-foot flood stage, Mayor Norman Indall had declared a state of flood emergency in the city but it was mostly a procedural formality to conform with regulations which would protect the city's right to establish eligibility for funds should a crisis develop.

WITH THE flood emergency dike patrols were established — but were withdrawn again when the river dropped below flood stage—there was routine pumping at the riverfront but these were about the only high water measures undertaken.

Relatively stable weather conditions prevailed through the remainder of the spring season until June 19 when, after a period of hot, humid conditions, weather made news again with the sighting of two tornadoes, one in the vicinity of Lake Winona and the other about three miles north of the city.

Neither of the funnels touched down, however, and no significant property damage resulted.

Winonans in 1971 were spared the discomfort of any prolonged heat wave with only June producing as many as three consecutive days of temperatures in the 90s.

And even during the three periods in June when 90-degree readings were recorded on three successive days there was, with one exception, relief from the daytime heat when temperatures dipped into the 50s or 60s at night.

JUNE turned out to be the hottest month of the summer with readings of 90, 92 and 90 June 5-7, 95, 96 and 92 on June 12-14 and 96, 94 and 92 on June 28-30.

The fall season was an abnormally wet one with precipitation totalling about double that usually recorded during the period from September through November.

The year closed out with a month that was about average as far as temperatures were concerned but with more precipitation than normal.

December's mean temperature was 22.7, compared with an average mean for that month of 21.25 but precipitation in the form of rain and melted snow was 1.77 inches compared with a normal December precipitation of 1.11.

The February total was 3.33 inches, compared with a .97 normal, and September's 5.03 inches compared with a normal 1.55.

IN AUGUST, on the other hand, little more than a half an inch of rain—.54 of an inch — was measured while the normal rainfall for that month is 3.60 inches.

Despite monthly fluctuations, temperatures for the year averaged out with a tenth of an inch of normal.

The mean temperature for the year was 45.8, compared with a normal 12-month mean of 45.9.

Two major exceptions to an otherwise nearly normal temperature pattern were October when the mean temperature was 65.5, compared with the normal mean of 46.3, and, on the other end of the scale, January, whose 4.7-degree mean was far below the normal mean of 17.3. Snow amounted to 1.77 inches, compared with a normal yield of 1.11 inches.

TEMPERATURES during December didn't range quite as high as they normally do but the mean temperature went above normal because of nighttime temperatures that held, for the most part, above seasonal levels.

The high temperature for the month was only 41 while the low was 3 below. Nighttime below zero readings were recorded on only two days.

In the overall view, 1971 weather probably was most significant for its abnormal amount of precipitation, the second consecutive year that moisture had been substantially above normal.

Total precipitation for the year was 36.84 inches, compared with a normal figure of 29.51.

Eight months produced precipitation above normal with the greatest deviations coming in February and September when monthly totals edged close to four times normal.

TEMPERATURE extremes were a high of 96 recorded in July and a low of 27 below in February.

Degree days — an index of the lower deviation from a base temperature of 65 that gives an indication of relative cold for a season — numbered 7,640, which is about normal for this part of the state.

It averaged out normal

	—Temperatures—					Precipitation Inches	
	Max.	Min.	Mean	Normal	Degree Days	Total	Normal
1971							
December	41	-3	22.7	21.25	1,311	1.77	1.11
November	60	10	35.8	35.1	876	2.60	1.61
October	87	29	65.5	46.3	264	2.78	2.49
September	93	35	62.6	62.5	72	5.03	1.55
August	95	46	68.7	69.5	—	.54	3.60
July	95	47	69.4	75.4	—	4.50	3.70
June	96	49	73.1	68.8	—	3.44	4.70
May	82	30	54.3	56.5	332	6.06	4.68
April	80	17	48.5	47.7	405	1.96	2.31
March	71	6	27.6	32.2	1,159	1.11	1.62
February	49	—27	16.7	18.2	1,352	3.33	.97
January	40	—19	4.7	17.3	1,869	3.72	1.17
Totals for 1971					7,640	36.84	29.51
1970							
December	60	—9	19.5	21.25	1,410	1.54	1.11
November	57	4	34	35.1		3.64	1.61
October	84	27	52.1	46.3	400	4.79	2.49
September	87	36	62.3	62.5	81	4.08	1.55
August	95	47	71.2	69.5	....	3.69	3.60
July	95	49	75.5	75.4	....	4.55	3.70
June	98	44	70.1	68.8	....	4.46	4.70
May	91	35	58.8	56.5	192	4.2	4.68
April	89	19	46.2	47.7	564	1.99	2.31
March	48	9	29.3	32.2	1,017	.80	1.62
February	48	-19	18.2	18.9	1,310	.58	.97
January	42	-28	14.7	17.3	1,559	1.08	1.17
Totals for 1970					7,463	35.40	29.51

2. Food and Cover: Conditions were critical for upland species during the early months of this year. Snow cover was abnormally heavy, causing much of the available cover and foods to be hidden. Reduced oxygen levels in many shallow pools caused some fish kills. The pool water levels were reached in early June, and the aquatic vegetation began to grow with vigor. Excelldnt stands of lotus, cattail and sagittaria were noted in many areas. Submergents, too, showed a substantial increase. Wild rice beds were common in many districts.

   The aquatic food supply was supplemented by a robust mast crop in several districts. Mallards, wood ducks and upland species put this to good use as they foraged in backwater sloughs of bottomland timber areas. Waterfowl utilization of the natural foods produced on the refuge was excellent. Cover remained adequate.

II. WILDLIFE

(Note: All specific dates should be interpreted as "week ending...")

A. Migratory Birds

1. Waterfowl

Ducks: Mallards, goldeneyes and mergansers totaled 3,820 at the beginning of the year. Populations declined to 1,600 February 13 and started on the upward swing February 20 with the appearance of the first spring migrants. Most species were present by March 13, and a peak population of 200,525 ducks--over 50% scaup--was present April 10. January through April use represented a 5% decrease in peak population and a 13% decrease in use days compared to 1970.

Summer resident nesting population was approximately 10,000, including 4,760 wood ducks and 3,545 mallards. Production was estimated at 16,035, with woodies providing 9,717, mallards 4,986, hooded mergansers 583, blue-wings 470, and blacks and green-wings the balance.

Baldpates and pintails announced the beginning of the fall trek southward August 7 and 14 respectively. Numbers climbed steadily to a peak of 228,585 on October 30 and lost ground steadily through November and December, with 32,180 present December 18 and only 4,220 at the end of the year. Individual peaks of note were 59,185 baldpates October 16, 55,325 scaup November 6, 55,315 canvasback October 30, and 55,030 mallards November 6.

Fall peak duck population was estimated at 23% above 1970, 36% above the previous five year average, and 25% above the previous 10 year average. Fall duck day use was computed at 41% above 1970, 45% above the previous five year average and 27% above the previous 10 year average.

Geese: The spring flight peaked at 4,640 Canadas--about half of the previous year--and 185 snows and blues. Production was estimated at 38 Canadas. Fall Canada flight peaked at 4,593, a small increase over the previous fall. Snows and blues peaked at 859 and 1,465, along with the Canadas and ducks on October 30.

Coot: Peaked at 77,340 April 17 and 174,000 October 16, both peaks being a moderate decrease from 1970. Production was estimated at 449.

Gallinules: Common gallinules peaked at 275 in the spring and 645 in the fall.

Rails: Soras appeared April 10 and peaked in the spring at 1,000. Over 500 spent the summer with us. The fall flight peaked September 18-25 with over 16,000 present. Up to 35 Virginia rails were reported during the spring and fall.

Swans: Whistling swans peaked at 5,125 April 10 and 1,418 December 4. 1971 use represented the third highest spring peak and the highest fall peak in 11 years.

2. Other Water Birds

Egrets: American egrets arrived March 27, peaked near 1,500 August 7 and were last noted November 27.

Herons: Heron peaks were estimated at 4,380 great blues with 656,940 days use for the year, 1,830 little green herons with 191,275 days use, 150 black-crowns with 14,100 days use, 61 yellow-crowns with 6,573 days use. Eleven rookeries produced 1,632 great blue herons and 322 American egrets.

Bitterns: American bitterns were present from April through November, with a peak estimated at 115 birds in September. Least bitterns peaked at 120 in mid-August.

Grebes: Spring flight programming of the pied-bills obviously went awry with arrivals appearing the week ending February 20. Spring and fall peaks were 695 and 2,100. Up to 12 horned, two red-necked and 90 eared grebes were recorded during the migration periods.

Cormorants: Present from March 27 through November 20, with peaks of 365 in spring and 1,500 October 9. Majority of use occurs in the Savanna District.

Gulls and Terns: Herring gulls appeared March 20 and were present throughout the balance of the year. Spring peak was 1,680, and fall peak was estimated at 1,345. Ring-bills were present throughout the year, with a small wintering population in the Savanna District. Spring concentration totaled 13,200, and the fall influx peaked at 5,650. Up to 305 common, 1,780 black, and 37 caspian terns were recorded during the year. Occasional Franklin's gulls are noted.

Pelicans and Loons: Single common loons were noted in the Winona and Prairie Districts in spring, and during the fall a single was again noted in the Winona District and ten in the Savanna District. Eight white pelicans were noted in the Winona District in May, and singles in the Guttenberg and Savanna Districts in fall.

3. Shorebirds

Common Snipe: Occasional snipe are seen throughout the winter. Spring peak was estimated at 360, decreasing to about 235 during the summer, and fall peaking at 1,775 October 2.

Woodcock: Population ranged from one reported appearing March 27 to 35-50 during the summer, and a fall peak of 90. Woodcock survey routes assigned by the Bureau were again run.

Other Shorebirds: Greater and lesser yellow-legs appeared April 10, with peaks of 725 in June and 1,060 in late August. Two black-bellied plover were recorded in May in the Winona District, seven avocets were recorded in the Guttenberg District in September, and 100 dowitchers were noted in the LaCrosse District in late October. Killdeer presented a spring peak of 1,070 and a fall peak of 1,380, with approximately 700 present during the summer. Least,spotted, solitary, and pectoral sandpipers and dunlins make up the majority of the small shorebird populations with a peak of 2,500 recorded September 25.

4. Doves

Approximately 200 mourning doves wintered with us, with numbers increasing to about 800 nesters. Numbers climbed with young appearing and migrants to a peak of 3,170 estimated present August 28, 2,000 of these on the Savanna District. At the end of December, 250 were still with us. This bird carries songbird status in Minnesota, Wisconsin and Iowa, while it is hunted in Illinois where our major concentration occurs.

1965
UM-9A

Refuge:
Period: Calendar Year 1971

B. Upland Game Birds

SPECIES	POPULATION JAN. 1	YOUNG PRODUCED	NUMBER STOCKED	GREATEST NO. PRESENT	TAKE	LOSS	POPULATION DEC. 31
Ring-necked Pheasant	171	80	40	296	45	57	189
Ruffed grouse	235	145		475	75	75	290
Bob-white quail	147	50		227	40	15	150
Gray partridge	25	20		40	10		30
Wild turkey	5	0		10	0		4

Upland game bird populations and reproduction are limited by annual flooding, extremely marginal habitat types and the extremely severe winter experienced this year.

C. Big Game Animals (White-tailed deer)

REFUGE DISTRICT	POPULATION JAN. 1	YOUNG PRODUCED	GREATEST NO. PRESENT	HUNTER TAKE	LOSSES	POPULATION DEC. 31
WINONA	60	80	155	35	13	85
LA CROSSE	80	35	150	25	30	75
LANSING	30	20	75	5	0	25
GUTTENBERG	25	10	35	15	0	20
CASSVILLE	30	30	80	20	0	45
SAVANNA	215	60	270	50	5	200
TOTALS	440	235	765	150	48	450

The white-tail population fluctuates with water levels. Considerable movement occurs between the refuge river bottomland and the adjacent hills. The refuge was hunted in accordance with the seasons of the four states in which it is located. Minnesota for the first time in several years had closed season in 1971. Population, take, and carry-over are about the annual average.

UM-14
Rev.
1965

Refuge:
Period: Calendar Year 71

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

SPECIES	POPULATION JAN. 1	YOUNG PRODUCED	GREATEST NO. PRESENT	TAKE	CON-TROL	LOSS	POPULATION DEC. 31
Muskrat	87,650	366,100	292,800	141,767	10	196,290	97,633
Mink	520	540	1,010	97		205	738
Beaver	3,875	2,295	6,205	1,128		635	5,057
Otter	150	65	210	17		29	134
Raccoon	7,833	4,800	12,183	778	13	2,122	8,690
Red Fox	575	560	1,120	1,020		215	515
Gray Fox	85	112	137	23		38	136
Skunk	345	315	585	65		165	400
Cotton-tail Rabbit	1,205	2,000	3,005	485		830	1,815
Opossum	1,115	1,295	2,310	175		885	1,250
Gray & Fox Squirrels	5,530	4,830	10,160	1,390		1,750	7,220
Woodchuck	224	181	400	7	28	102	263
Badger	34	18	52			19	33

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

Hawks: Some 15 diurnal birds of prey range the Upper Mississippi. Of the accipiters, the Cooper's and sharp-shinned are noted as occasional, permanent residents. Commonest Buteos are the red-tailed, red-shouldered, and broad-winged. The rough-legged is an occasional winter visitor. The sparrow hawk is the most common of the falcon group and year-round resident. The duck hawk, once nesting along the Mississippi bluffs now appears only as a rare straggler. Refugewide numbers for 1971 commonly observed species ranged up to 260 red-tails, 26 red-shouldered, 36 rough legs, and 95 marsh hawks.

On October 3, a major hawk migration was noted at Reno, Minnesota. Between 10 a.m. and noon a conservative estimate of 650-700 hawks was noted. Birds were moving at various altitudes from the bluff tops up to several thousand feet. A light overcast covered the sky in the morning, gradually dispersing until noon when the sky was clear. As the clearing progressed, the hawks appeared to move higher and higher. By far, the majority of the birds were broad-winged hawks moving singly and in kettles of up to 100. Also present were numerous sharp-shins, smaller numbers of Cooper's many red-tails (including three Kriders) six osprey, a Swainsons, a marsh hawk and a peregrine. All in all it was quite a sight, especially with many birds moving along the brink of the bluff within a few yards of the observer.

Eagles: The Upper Mississippi Valley serves as a major migration route and a wintering grounds for a substantial part of the remaining North American bald eagle population. The Upper Mississippi Valley Eagle Survey coordinated at Rock Island estimates that 700-800 of these birds may move through the area during seasonal migrations. Variable numbers may remain to winter locally wherever ice and water conditions permit obtaining of their favored fish food below the dams or in open water sectors. Mid-winter counts at the refuge indicate that 50 to nearly 300 bald eagles may winter on the upper river according to seasonal conditions. Fall migration occurs from around September 1 to December 9, with the main spring movement occurring from about February 15 to March 15. Five nesting attempts, of which three were successful, have been recorded since 1963. In 1971 two eaglets were raised to flight in the Pool 9 nest that produced two in 1969 and one in 1970. We are encouraged to feel that the bald eagles are at least "holding their own" here on the Upper Mississippi. Peak population was 260 the week ending December 25.

The golden eagle appears here as a straggling winter visitor along the river. This fall sightings of single birds were reported three weeks in the Winona District and the last five weeks of the year in the Savanna District. One injured adult received from nearby state refuge was transported to Como Park Zoo at St. Paul for care.

Owls: One snowy owl was reported in February and another (right in Winona) in late November.

Vultures: The turkey vulture is a common resident throughout most of the year, except the colder months. Numbers were estimated at 185 refugewide at the peak population. The black vulture has been recorded in the lower river reaches.

Osprey: Occasional observations noted in 1971 along the river. No nesting attempts have been observed. Peak population for fall was 14.

F. Other Birds

A note of interest to birders--a curve-billed thrasher has taken up residence at a feeder in Buffalo City, Wisconsin just adjacent to the refuge. Amazingly,the bird first appeared as a juvenile with a brood of young brown thrashers and two adult brown thrashers early in the summer. The one young bird was different not only in appearance but in behaviour as well right from the start. After a few days, the parent birds rejected the odd youngster. The bird has been at the feeder almost every day since, right up to the point of the writing of this NR in February. Interestingly, the curve-billed appears from the range map in Robbins et al to be non-migratory.

Miscellaneous notes of interest: the pine grosbeak likely should be removed from the accidental status on the bird list and included in the regular list as an occasional or rare winter visitor. Two species inadvertently left off the regular list that should be there are the Philadelphia vireo and the white-winged crossbill. Also, avocets have been sighted on the refuge's lower reaches for four years in a row now and likely belong on the bird list. The same seems true for cattle egrets which have now been seen a number of years. This year a pair remained within the city limits of Winona for several days in early May. One was also at the Genoa National Fish Hatchery, adjacent to the refuge.

G. Fish

See District Reports

H. Reptiles and Amphibia

The reptile and amphibia list for the refuge lists some 35 species, including two salamanders, one toad, nine frogs, nine turtles, one lizzard and 13 species of snakes. Three additional species of salamanders, three other snakes, two lizzards and two more turtles are recorded in immediately adjacent county areas.

I. Rare and Endangered Species

None

III. REFUGE DEVELOPMENT AND MAINTENANCE

A. Physical Development

1. Winona Service Facility Complex

a. Oil House: After many years of endeavor, funds were made available to construct an approved oil house for housing flammable and other dangerous materials. Located adjacent to other buildings here, it serves the equipment maintenance shop and the sign shop. Cost of the building complete amounted to $2,735.

b. Materials Storage Building: The decision to establish the National Sign Shop at the Winona location forced the refuge to clear its warehouse space so that the conversion to sign shop activities could be pursued. The continuation of our warehousing duties was not affected, so in order to perform, a materials storage building was built, and operations are now being conducted from there. The 60' x 30' concrete block building and accoutrements totaled $10,671.

c. Warehouse Floors: The maple flooring in the warehouse was ruined in the flood of 1965 and removed during that summer. Not until 1971 was the floor replaced with maple so that operations in the Sign Shop could be continued. Total cost of finished floor replacement amounted to $4,773.

2. National Sign Shop

Shortly after the first of the year (1971) the decision was made in RO and CO that the Regional Sign Shop in Winona would be converted to national scope. The regional shop had contributed materially over about four years in upgrading the signing of Region III refuges with routed signs of all sizes, standard and custom designs. In the last year or so, additional emphasis was placed on turning out silk-screened signs for interpretive programs and various tour routes.

To accomplish conversion to national status, surveys were made and plans drawn on how to rehabilitate available space. The type of equipment to be houses, kinds of signs, numbers of employees and much other deliberation was made.

The first move was to transfer Ben J. Chio from Treasure Lake Job Corps Center where he was in charge of sign shop operation. Ben arrived on board March 10, 1971 and plunged in with operating personnel--Bill Shaw and Pete Smith--to continue the efforts to clear the backlog of sign orders on hand and work toward rehabilitation activities. At the close of the year, most orders were completed and sufficient funds available to start the major rehabilitation work.

1971 was a busy year for the Regional Sign Shop. The wood working shop has taken on a new look--a few walls were removed to allow an additional 450 sq. ft. of working area. The warehouse was vacated in order to make room for major changes taking place in our sign program.

Building materials are on hand for the renovation of the warehouse for sign shop purposes--a new boiler for heating, overhead lighting, dust removal equipment, exhaust fans to remove paint odors,and many other items to improve and make it a safer place in which to work.

New equipment was transferred from Treasure Lake Job Corps in Oklahoma--two trips by truck necessary to secure all items. When put in use, this equipment will permit creation of just about any type sign required by the Bureau, whether it be by wood routing, silk screening method, or photographic reproduction.

Sign Shop Production: This past year we employed two full time and at different intervals two temporary employees. We also participated in the Neighborhood Youth Corps and Youth Opportunity Corps programs, employing six high school youths--three boys and three girls for the summer months.

Man hours worked in 1971 totaled 8,200. We used 5,095 sq. ft. of redwood in routing 617 signs. 720 sq. ft. of redwood and white cedar was used in silk screening trail signs; 432 sq. ft. of dura plywood used on interpretive silk-screened signs designated for public use and wildlife production areas.

3. Repair Shop Activities

Maintenanceman Duncan Green had no trouble keeping occupied, as advancing age and mile and hour piled up on O & M equipment. Following are some of the major items of his concern:

1. Received, inspected and placed into service two new station wagons and four new sedan delivery vehicles. The receipt of these vehicles late in the year cut considerably the maintenance and repair duties.

2. Installed rollbars on IH 460 tractor and moved unit to Guttenberg District on 12-Mile Island.

3. Assumed full production of all the steel rods used in sign manufacture.

4. Serviced, repaired, straightened axles and jacks on nine boat trailers.

5. Innumerable minor repairs to chain saws, pumps, power lawn mowers and miscellaneous power tools.

6. Continual repairs to outboard motors from 3 to 75 hp, including complete overhauls on four 35 hp engines.

7. Major motor overhauls on three truck engines and replacement of seven clutches in straight stick vehicles. This latter is being taken care of by ordering vehicles with automatic transmissions as the boat trailering is better handled that way.

8. Acted as inspector on the oil house and materials storage building contracts.

9. One trip to Witchita Mountains NWR for property and several to DOD installations to screen and/or pick up excess property.

10. Attended IMEAC meeting in St. Louis, Missouri and picked up many valuable tips on vehicle and equipment maintenance.

11. And other duties as assigned!!!

B. Plantings

1. Acquatic and Marsh Plants - See Savanna District Report

2. Trees and Shrubs: None

3. Upland Herbaceous Plants: None

4. Cultivated Crops: See Guttenberg, Cassville and Savanna reports.

C. Collections and Receipts

1. Seed and other Propagules: None

2. Specimens: Two dead eagles salvaged for Patuxent

D. Control of Vegetation

See La Crosse, Cassville and Savanna reports

E. Planned Burning

See Winona District

F. Fires

None

IV. RESOURCE MANAGEMENT

A. Grazing: Eight permits netted $389.00 to Corps of Engineers and $21.00 to the Bureau.

B. Haying: None

C. Fur Harvest: Trappers reports show 857 trappers took 106,897 muskrats during the Fall 1970-Spring 1971 as opposed to the previous year's catch of 136,081 rats by 922 trappers. Average price was 91¢ as compared to $1.20 average a year ago and probably accounts for the decrease in numbers of trappers and rats taken. During the 70-71 season 104 mink, 1,105 beaver, 376 raccoon, 77 fox, 1 otter, and 12 oppossum were all harvested by trappers. Total value of take was $111,765. Total sales $3,570.60.

The Fall 1971-Spring 1972 trapping returns just coming in show the first 386 trappers to report caught 68,900 muskrats for an average of 178 rats per trapper. Based on 915 permits issued to date, total muskrat catch should exceed 163,000 for the regular seasons. Wisconsin for the first time is permitting the unlimited taking of rats during the current beaver season, and Iowa has announced a spring rat season, the first in many years. These will add to the total take estimated for the regular season. Fur prices are the highest for many years, with rats running up to $1.80 and higher, a most opportune time for a near record harvest. 39,722 tags @ 10¢ sold to end of year.

D. Timber: No receipts in 1971. One firewood permit--$5.00.

E. Other Uses: About 400 Corps of Engineer licenses exist on the refuge in Pools 4 thru 10, which comprise the St. Paul Corps District. These licenses are checked by refuge personnel for compliance with refuge and Corps regulations as required by agreements with the Corps, but provide no dollar return to the Bureau.

Bureau permits covering miscellaneous boat docks, boat liveries, fish float concessions, cabins, farm buildings, gardens, scout camps, and other uses total approximately 175 with fees ranging from $10 to $300 per year, plus one campground concession returning $715.90.

During 1971 a policy was adopted on approved flotation materials used in conjunction with all structures under permit on or adjacent to Bureau lands. This was a long overdue curb on the use of thousands of metal barrels, many of which eventually were discarded in the river on rusting through or lost in floods.

F. Payment to Counties: The 19 counties of the refuge received a total of $18,146.08 in 1971 under the Revenue Sharing Act.

Fall 1970-Spring 1971

Species	State	No. Trappers	Total Fur Take	Average Fur Take	Av. Price	Total Value
MUSKRAT	Minn.	163	19,438	119	$ .86	$ 16,655.82
	Wisc.	472	66,398	141	.92	61,322.24
	Iowa	167	16,997	102	.90	15,295.83
	Ill.	55	4,064	74	.97	3,924.78
Total		857	106,897	124	.91	97,198.67
MINK	Minn.	163	3	.02	6.00	18.00
	Wisc.	472	48	.10	6.13	294.00
	Iowa	167	43	.25	4.91	211.28
	Ill.	55	10	.18	4.86	48.58
Total		857	104	.12	5.50	571.86
BEAVER	Minn.	172	123	.72	10.75	1,321.90
	Wisc.	472	889	1.88	12.45	11,069.43
	Iowa	167	93	.55	4.95	460.59
	Ill.	Closed				
Total		811	1,105	1.36	11.63	12,851.92
RACCOON	Minn.	163	38	.23	2.62	99.59
	Wisc.	472	72	.15	1.87	134.85
	Iowa	167	224	1.34	1.73	388.37
	Ill.	55	42	.76	1.79	75.04
Total		857	376	.44	1.86	697.85
OTTER	Wisc.		1		24.00	24.00
OPPOSSUM	Minn.		3			(
	Wisc.		2			(
	Iowa		5		.25	(3.00
	Ill.		2		.25	(
Total			12		.25	3.00
FOX	Minn.	172	40	.25	5.02	200.64
	Wisc.	472	20	.04	5.80	116.00
	Iowa	167	16	.09	6.00	96.00
	Ill.	55	1		5.36	5.36
Total		866	77	.09	5.36	418.00

TOTAL FUR VALUE $111,765.30

In addition, two beaver were taken during Illinois closed season.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE

UPPER MISSISSIPPI RIVER WILD LIFE AND FISH REFUGE
405 EXCHANGE BUILDING, WINONA, MINNESOTA 55987

IN REPLY REFER TO

FLOTATION DEVICE REGULATIONS

Applicable to
Boathouses, Docks, Floats, Piers, etc.
Upper Mississippi River Wild Life and Fish Refuge

In order to reduce Mississippi River pollution, generally upgrade the river environment, and to eliminate hazards to people and property, the following regulation on flotation devices is effective January 1, 1971.

All new structures, including boathouses, houseboats, docks, piers, and floats authorized by permit to be moored, anchored, or secured along the shoreline and on the waters of the Mississippi River within the Upper Mississippi River Wild Life and Fish Refuge will be required to use flotation methods and devices of a type constructed of polyurethane, high-impact polyethylene fiberglass material, wood timbers, or other inert materials to provide flotation.

The use of any iron or steel container not fabricated originally for flotation purposes, including barrels, tanks and other containers originally constructed for the purpose of containing fluids, powders or similar products is prohibited for new structures <u>or for replacement of flotation devices in existing structures unless filled with polyurethane.</u>

Flotation devices in use as of January 1, 1971 must be completely converted to conform to these requirements by January 1, 1975.

Rev. 7/71

1-23-72

Barge traffic up

City industries brought in more bargeloads of materials in 1971 than they did the previous year, a roundup of shippers shows. Last year 256 barges were unloaded while the year before the total was 243. There were no barge shipments originating here either in 1970 or 1971.

The city's commercial dock alone recorded more than 2½ times as many shipments unloaded in 1971 as in 1970. There 73 barges were handled compared with 27 in the preceding year.

Tonnages and revenues showed about the same proportionate increases. All told the city collected $10,632 for dockage fees and ground rentals combined.

VICTORIA Elevator Co., which has its own mooring facilities upstream on Crooked Slough from the city facility, shipped 125 barges — 6,323,755 bushels — of corn and soybeans. The figure was nearly the same as the 126 shipped in 1970 but company officials said an extended longshoremen's strike at the nation's coastal ports had prevented Victoria from dispatching the 200 bargeloads on which its sights had been set early in the season.

A disastrous fire Dec. 26 has put the firm's future prospects in doubt. Should a rebuilding program be instituted, however, the company would be shooting for a May completion of construction so as not to lose the major portion of the shipping season.

Bay State Milling Co., which received 45 barges in 1970, shipped in 16 for 1971. One carried rye and the rest wh eat. The total shipment was 720,000 bushels. Bay State sources said that the mill's production of flour was up last year but that more use had been made of truck transportation than in 1970. The company ships all its flour by rail or truck.

Northern State Power Co. unloaded 10 barges of coal at its generating plant yard here in 1971, just half the 20 barges unloaded in 1970.

THE REASON, according to NSP sources, is a shift to low-sulfur lignite coal being made necessary by state air-pollution control reguations. In 1971 NSP received 38 railroad cars — 1,900 tons each — of lignite from western North Dakota.

This year the firm will receive greater quantities of lignite and a special rail spur is being built to handle the shipments. Depending on its output the plant consumes from 300 to 1,000 tons of fuel a week.

At Continental Oil Co. terminal, where 22 barges were received in 1970, a total of 26 barges discharged cargoes in 1971. Of this total, 13 carried petroleum products and the other 13 carried chemical products for storage in lease space by Allied Chemical Co. and USS Agri-Chemicals. One of the barges was for Agri-Chemicals and the rest were for Allied.

In addition to liquid material, Agri-Chemicals received 20 bargeloads of dry phosphatic materials unloaded at the city dock on Crooked Slough.

Four barges of coal were received in 1971 by Joswick Fuel & Oil Co., double the two barges the firm received in 1970.

Peerless Chain Co. brought in two barges of steel rod for chainmaking and wire forms uses in 1971. The steel was imported from Japan and added up to 1,126 tons. In 1970 Peerless received a single barge of raw steel.

★ ★ ★

WINONA COMMERCIAL HARBOR TONNAGES AND REVENUE

	Barges Unloaded		—Tons—		—Receipts—	
	1970	1971	1970	1971	1970	1971
Cement		22		28,626	$	$ 2,863
Fertilizer	4	2	4,371	2,350	437	235
Phosphate	5	21	6,854	29,600	685	2,960
Salt	18	28	22,774	35,745	2,277	3,574
Totals	27	73	33,999	96,321	$3,399	$ 9,632
Ground rental					250	1,000
Total income					$3,649	$10,632

3-1750
Form NF
(Rev. March 1953)

WATERFOWL

REFUGE Upper Mississippi Refuge

MONTHS OF January TO April, 19 71

(1) Species	Weeks of reporting period (2) 1	2	3	4	5	6	7	8	9	10
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada							10	200	2,050	2,050
Cackling										
Brant										
White-fronted										
Snow										10
Blue										6
Other										
Ducks:										
Mallard	1,070	1,075	1,040	1,015	1,020	1,035	1,092	1,154	1,349	3,124
Black	5	10	12	29	25	34	37	42	49	94
Gadwall										10
Baldpate										100
Pintail								10	50	506
Green-winged teal										
Blue-winged teal										
Cinnamon teal										
Shoveler										10
Wood		1	1	1	2	1	3	11	50	110
Redhead										100
Ring-necked									5	170
Canvasback										110
Scaup								5	52	1,130
Goldeneye	1,693	1,635	1,667	1,027	836	328	482	805	1,630	2,276
Bufflehead									2	50
Ruddy										
Other -Merganser	1,052	1,052	1,035	520	525	201	201	285	585	635
Coot:										

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

V. FIELD INVESTIGATION OR APPLIED RESEARCH

A. Upper Mississippi River National Recreation Area Study: The Upper Mississippi River National Recreation Study ground to a sort of end with the holding of five informational meetings on the river, submission of the final draft of the Task Force report, and a subsequent boiling down or condensation of both the size of the report and size of the area.

The Task Force report set up an area in extent as follows:

Total land and water	979,100 acres
Total publicly-owned land	214,600 "
Proposed acquisition-fee	300,800 "
Proposed acquisition-scenic easement	37,000 "
Land acquisition costs (fee & easement)	$251,000,000
Development (recreational, fish & wildlife	$108,000,000
Cost of total package	$359,000,000

In its report, the Task Force recommended, over the objections of the BSF&W representative, that the area be administered by the U. S. Army, Corps of Engineers.

On March 3, 1971, Congressman John Kyl of Iowa introduced HR 5468 which would have established the concept of the NRA as described above.

On May 19, a meeting between Congressman Kyl and the Steering Committee members brought out these points:

a. Complimentary of work into and completeness of report.

b. He stated he could not sell a package as large as the Task Force proposed in its report. Congressional appropriations committee not receptive to land acquisition costs of $350 million for a single project.

c. He suggested then that a final report be prepared to identify:

(1) Land & water acreage already in federal ownership

(2) Federal acreage acquisition needed to add to existing federal land and water to create a viable NRA.

(3) Kinds of recreation facilities and activities to be provided at these areas.

A special assignment for this purpose was given to a number of the field staff from C of E, NPS, BOR and BSF&W. It was completed and submitted to the Steering Committee on June 11 with the following salient points of difference:

1. A minimum additional acquisition of 55,300 acres fee and 3,500 acres scenic easement recommended as an addition to existing federal ownership to form a viable NRA. Total cost of this package, acquisition and development, is $81,805,000.

2. Revision of and list of recreational developments and costs and wildlife development costs.

3. Area initially included in Task Force package placed in a category of "area of concern," to be acquired and developed in future years.

4. No recommendation made as to administration as word was such to be made at Secretarial level.

On September 8, 1971, Congressman Kyl, Iowa introduced HR 10529, very similar to his previous bill except that it endorsed the smaller package. This bill, too, was referred to the Committee on Interior and Insular Affairs. No word on any further action, if any, has been made known.

As to the Steering Committee report, the latest information is that it is being reviewed by the Secretary of the Interior and the Chief, Corps of Engineers. At this time there is no indication as to when their review will be completed.

B. Banding: See table for 1971 birds banded. Of interest was our first wood duck return south of the U.S. in over 4,000 returns—this from the West Indies.

1971 BANDING

UPPER MISSISSIPPI RIVER WILD LIFE AND FISH REFUGE

SPECIES	State	LF	LM	LU	HYF	HYM	HYU	AHYF	AHYM	UNK	TOTAL
Wood duck	Ill.	2	3			1		2			8
	Ia.	6	5		444	472		18	23	3	971
	Minn.	7	5		78	84		3	36		213
	Wisc.	34	23	3	19	30		2	37		148
		49	36	3	541	587		25	96	3	1,340
Mourning dove	Ill.						55	19	27		101
	Wisc.								1		1
							55	19	28		102
Y. H. Blackbird	Wisc.				2	15		4	17		38
Black duck	Wisc.					2					2
Pintail	Wisc.							1			1
TOTAL		49	36	3	543	604	55	49	141	3	1,483

VI. PUBLIC RELATIONS

A. Recreational Use

Total visitors to the UMR dropped from 1,762,000 in 1970 to 1,502,000 in 1971. The bulk of the decrease came in fishing and wildlife observation. A large part of the decrease can be attributed to the 1971 flood; there was non in 1970. While most of the districts had developed an initial plan for inventorying their public use, two districts were realigned necessitating restructuring of their plans. Another district was using the plan for the first time and probably reported better data than in the past. Finally, one district manager was new to the UMR on a district not having a plan when he arrived. All of these factors are likely responsible in combination for the drop in reported public use.

The River-of-Lakes concession campground had its fourth successful year and is undoubtedly a going concern. 1971 was the first year that they were charged a percentage of receipts. The first three years a flat fee of $200. was assessed. In 1971, the 5% of receipts amounted to $715.90.

B. Refuge Visitors

Secretary's Advisory Committee Visit

On October 11, Messrs. DuPont and Buffe of the Secretary's Advisory Committee visited the UMR to survey public use and its relationship to wildlife values. Refuge Manager Gray accompanied them on a flight of the river from the foot of Lake Pepin to Lansing, Iowa. Various features of the refuge, such as the closed areas, hunting areas, heavily hunted marshes, wood duck production areas, rookery sites, inter-relationships of Bureau and private lands and public access sites were pointed out to the gentlemen.

Upon returning to Winona, the committee members posed questions to Manager Gray, Dr. Green (Area Biologist) and Assistant Manager Don Young regarding present visitor load, needs if this should suddenly increase by 50% or more, and anticipated facility needs to meet expected or sharply accelerated use by the public. Both men were appreciative of the uniqueness of the Upper Mississippi. Their concern as to whether or not public use was interfering with our basic purposes of waterfowl management was brought out, discussed and, apparently, answered to their satisfaction.

REFUGE VISITORS

Refuge: Upper Mississippi River Wild Life and Fish Refuge
Period: January-December, 1971

DATE	PERSONS	PURPOSE
1/6/71	Dave Ostergaard, Genoa NFH	Lawcon Project
7	Gerald Updike, Necedah NWR	Courtesy
15	Reg. Supv. Carpenter & Asst. Reg. Supv. Monnie, R.O.	Staff meeting & Lawson retirement
20	Asst. Reg. Supv. Monnie & Pub. Use Spec. Key, R. O.	Objectives and Sign Shop
20	C. D. Anderson, L. G. Schneider, Wisc. Hwy. Dept.	Hwy. 18 crossing at Prairie du Chien, Wisc.
21	Al Johnson, Forester	Proposed timber sale Prairie du Chien
26	Sam Poma, Shiawasee NWR	Drop off motor
2/2	Joe Richey, RO Engineer	MARS report
3	Gerald Updike, Necedah NWR	Courtesy
3	Larry Thomas, RBS-RO	12' Channel
3/11-12	Karen Smith & Bill Sontag, RO	Refuge tour
3/29-30	Asst. Reg. Supv. Monnie, Horicon & Necedah reps.	Objectives workshop
4/15-16	John Keeley & Jack Stowe, C of E, Vicksburg, Miss.	12' Channel environmental impact statement data collection
4/21	Karen Smith, RO	Sign shop & I-90 exhibit
29	Bob Ellingson, Wisconsin DNR	EE program
5/ 3	Messrs. Johnson & Fall, RO engineers	Trempealeau sewer rehabilitation
5	" " " "	La Crosse warehouse site resurfacing

REFUGE VISITORS

Refuge: Upper Mississippi River Wild Life and Fish Refuge
Period: January-December, 1971

DATE	PERSONS	PURPOSE
5/24/71	Larry Thomas, RB, RO	12' Channel
6/ 2	Gordon Hanson, C of E. Chicago	12' Channel
6/ 4	Iver Benson, C of E. St. Paul	Inspection of leases
14-16	Asst. Reg. Supv. Monnie, RO	Objectives
7/ 1-2	Earl Eliason, Engr., RO	Inspect warehouse construction
7	Chuck Griffith, RO, & Ed Landin, Environmental Science Center, Golden Valley	Rookery tour & EE handbook
16	Earl Eliason & Don Powell, Engrs., RO	Inspect sign shop floor & Trempealeau sewer rehab. work
20	Mrs. Fritz, River Trails Girl Scouts	Phase out of camp at Trempealeau
23	Reg. Supv. Carpenter, Assoc. Reg. Supv. Gritman and Staff Spec., Acq., Dundas	Ken Krumm's retirement
8/12-13	Earl Eliason, Engr., RO	Inspect construction sites--Trempealeau Sewer rehabilitation and La Crosse I-90 access.
16-17	Kent Keenlyne, Dean Schneider & Larry Thomas, RB, RO	Dredge spoil survey & 12' channel
23-25	Andrew H. Payne & Harry T. McClain, Reg. II Audit Operations	Audit
27	Earl Eliason, Engr. RO	Inspect construction work at Trempealeau
8/31-9/ 1	Earl Eliason, Allan Thorson, John Telfer, and William Miller, RO	Sign shop rehabilitation
9/2	Earl Eliason, RO Engr.	Pre-construction conference
10/5-8	Pete Bryant, Les Beatty, reps. Horicon, Necedah, Tamarac, Seney & Upper Miss.	PPBE Workshop
10/11	Messrs. DuPont & Buffe, Secretary's Advisory Comm.	Flight of river areas re public use

REFUGE VISITORS

Refuge: Upper Mississippi River Wild Life and Fish Refuge
Period: January-December, 1971

DATE	PERSONS	PURPOSE
10/11	GMA Pilot Glen Orton, Mankato, Mn.	USDI Advisory Committee Flight
10/18-20	Gil Key, RO, & Dwight McCurdy, So., Ill. Univ.	Public use inventory
10/21	Earl Eliason, Engr., RO	Final inspection of Trempealeau construction
10/28	Dean Schneider, RBS, RO	Dredge spoil
11/2	Earl Eliason, Engr., RO	I-90 inspection
11/3	Arthur G. Huey, Reg. I Engr. now retired	Courtesy visit - tour of refuge (Winona District)
30	Jerry Stoude, Aberdeen Research Biologist	Canvassback build-up in Pools 7 & 8
12/4	FBI agents Hally and Stull	Black walnut timber theft, Lansing District
15	Wm. Ellerbrock, Minn. GMA	Return radio & re law enforcement matters

C. Refuge Participation

The Bureau and refuge were represented at numerous meetings with other public and private agencies interested in resource management in the Upper Mississippi Valley. Included were the Corps of Engineers, Upper Mississippi River Conservation Committee, Bureau of Outdoor Recreation, Mississippi River Research Consortium and others. Subjects discussed included the 12-foot channel study, Upper Mississippi River National Recreation Area study, general plan coordination and resource management.

The radio program "Conservation in Action" put on by the Winona office completed its eighth year. This year it was changed from a weekly 25-minute broadcast to three 5-minute broadcasts at 6:00 a.m. Monday, Wednesday and Friday. Numerous responses indicate that it has a fairly wide listening audience.

Biologist W. E. Green, in addition to assisting in various field study trips and illustrated lectures with the refuge program, also conducted teacher training sessions and participated in various environmental teach-ins and workshops for both elementary school systems and several local colleges. He also appeared on programs for several scientific societies and conservation associations. He prepared a Conservation Resource Directory for the Winona County Association of Professional Conservationists. This is designed to provide county teachers and youth workers with a list of local resource people available for programs and other forms of assistance.

A summary of the major appearances of Winona office personnel follows, with the type of organization or agency concerned.

Staff Member	Total	Inter-agency Meetings	Schools	Nature Clubs	Service Clubs	Sports-mens Clubs	Other
Gray	19	15				1	3
Green	32	4	21	1		1	5
Young	9	3	2		2	1	
Krumm	7		3			1	3
Foster	2	1				1	
Hamernick	15	1	8		3		3
Total	84	24	34	1	6	5	14

The above totals do not adequately reflect the amount of time incurred by staff participation, particularly in the inter-agency category. Refuge Manager Gray's 15 such meetings were primarily devoted to the NRA and actually involved about 18 days of meetings (not including preparation for them) in Ann Arbor, Chicago, Washington, D. C. and St. Louis, as well as other meetings and hearings along the River. Also, in 1970 there were 30 such days. This brings our total contributed, non-recompensed (to the UMR)

time to about 186 man days. The tremendous amount of time devoted to the NRA and to refuge objectives and PPBE had a noticeable effect on our participation in off-site programs.

The UMR contributed to the Horicon Highway 49 public relations program for the third consecutive year, though this year at a reduced rate. Our public use specialist was detailed to this effort for two weekends (in past years we have had two men there for three or four weekends).

Public Use Specialist Hamernick was also sent to Crab Orchard NWR for a week in October for a workshop on public use censusing techniques. A handbook worked up by Dr. Dwight McCurdy of SIU on assignment to the Bureau was discussed in advance of its implementation on selected refuges in each region. Following the workshop, Dr. McCurdy and Gil Key, Region 3, Public Use Specialist, visited UMR to discuss public use inventory methods and their application here. In November, Hamernick was detailed for a week to Swan Lake and Squaw Creek NWRs on the inventory technique application there.

The Winona Girl Scout group camp at Trempealeau closed out its operations there in 1971. They have built their own camp and will no longer use the refuge. Although there have been difficulties of a relatively minor nature at various times, the arrangement had produced a valuable experience to many local girls. Long-range plans call for turning the lodge they had occupied into a visitor center.

Recreation developments continued on a modest scale with the construction of a much needed and excellent access point at the I-90 brdige in the La Crosse District, an interpretive foot trail at Miller's Lake in the Savanna District. This trail was developed in cooperation with the Palisades State Park which is adjacent to the area. Comfort stations were also constructed at access points in the La Crosse and Cassville districts. See the district reports for these developments.

National Wildlife Week

National Wildlife Week's theme, "Have you seen any wildlife lately?", served as a means of emphasizing the wildlife conservation message to the Mississippi River Valley residents. As usual, the activities were kicked off with the La Crosse Sport-O-Rama where the refuge exhibit of live waterfowl, films, waterfowl art and decoys and literature was viewed by over 10,000 visitors. During NWW films and slide programs were shown to about 9,000 students at 39 schools in four states to grades K through 12 in public and parochial schools. This was augmented by radio programs and newspaper releases as well as a liberal distribution of posters for display to local libraries, book stores, sporting good stores, etc.

Environmental Education

Although the emphasis on Refuge Objectives necessitated a curtailment of our off-refuge involvement, the Albert Lea, Minnesota outdoor education program was again assisted by the annual visit to the heron-egret rookery in Pool 8 in July. This model program features an inter-disciplinary approach to teaching natural resource conservation. The UMR's contribution is the wildlife aspect of the Mississippi River.

In May this same rookery tour was conducted for the National Audubon Society following their annual convention held at Milwaukee. Eighty members arrived by bus and were boated to the rookery in two shifts. While half of the group were at the rookery, the others were introduced to some of the fine birding opportunities of the UMR at Goose Island and at the Shore Acres yellow-crown night-heron rookery.

Holding an annual open house on the UMR is degenerating into a battle of wits between the refuge staff and the weather, with the latter holding the upper hand to date. It may be that we are out of ammo in this struggle. At any rate, the refuge migration days were scheduled for April 3-4, which by all odds should catch the peak of our waterfowl migration in all the glory of breeding plumage. The auto trail at Trempealeau was still under 18" of snow. This, plus the rain, made it necessary to call off our plans on the upper end of the refuge. However, from La Crosse to Savanna 715 people turned out. This was most gratifying as quite a bit of effort had been devoted to promotion and preparation.

The UMR again participated in the Wisconsin Girls' Conservation Camp, as we have since its inception four years ago. The main difference this year was the omission of the visit to the heron rookery on 12-Mile Island. The refuge does not have adequate watercraft to transport the 50-60 people the several miles from the warehouse to the rookery in a reasonable time. This year the group was ferried the short distance to the island just below the closing dam on the Wisconsin side. They then walked around the ponds turned over to the UMR by the now defunct Guttenberg Hatchery. The management of these impoundments for waterfowl was explained. However, this was a less satisfactory arrangement than the rookery tour which has always been the high point of the girls' week. Mist netting and waterfowl banding were again a part of the program.

Mississippi River Survey—St. Paul to St. Louis

From September 21 to 28 Refuge Manager Gray participated in a survey of the river on board the CE boat M/V North Central. Besides the Bureau and the Corps, people from the various states were on board when the survey was in their stretch of the Mississippi. A representative of the Audubon Society was also present for part of the trip. Purposes of the trip were (1) discuss the 12' Channel, (2) review dredge spoil disposal and (3) receive contributions from the states and others regarding projects or subjects of special

interest to them. Mr. Gray delineated points of interest vital to the UMR and Mark Twain Refuges, recreational use areas, problems generated as to sanitation, litter pickup and patrol, spoil placement--maintenance dredging and 12' Channel generated spoil--effects on habitat, effects on harvest of waterfowl, etc. All the UMR district managers and some of the Winona office staff also spent all or part of one day on the trip, the district managers on their particular responsibility of the river.

D. Hunting

Hunting of migratory birds, upland game species, big game, foxes, groundhogs, raccoons, and crows on the Upper Mississippi Refuge in Illinois, Iowa, Minnesota and Wisconsin is permitted on the areas designated by signs as PUBLIC HUNTING AREA, in accordance with state regulations and concurrent with state seasons, BUT ONLY during the period beginning the first day of the earliest state GAME bird or GAME animal season for the geographic area concerned through March 1. Discharge of firearms from March 1 to the first day of the first open hunting season is prohibited. Acreage of the public hunting category total 156,718.

Restricted gun and bow hunting of upland game species, deer, foxes, groundhogs, raccoons and crows on the Upper Mississippi Refuge is permitted on the areas designated by signs as CLOSED AREA in accordance with state regulations and concurrent with state seasons during the period beginning the first day after the close of the duck season for the geographic area concerned through March 1. Acreage in the Closed Area category totals 41,105.

Waterfowl hunting was up substantially for the second straight year, with another "rosy fall flight forecast, a 50-day season and a four-bird limit on mallards in Minnesota and Wisconsin--the states with the heaviest hunting pressure on the refuge. The following shows the number of visits for all waterfowl hunting to the UMR since 1961:

1961	32,555	1966	86,810
1962	18,690	1967	63,588
1963	62,735	1968	32,943
1964	78,445	1969	51,835
1965	64,240	1970	70,745
1971	83,198		

In contrast to 1970, this year's bright forecast for the fall flight was borne out on the UMR. Peak numbers of all species except goldeneyes and scoter (which decreased very slightly) and ringnecks (which were the same as last year) were up, some--like mallards--very substantially. Days use was also up for everything except shovelers and scoters. None of the excepted species are of much significance in the bag on the UMR. Overall days use rose from 8,500,000 to 12,100,000.

In spite of more ducks, the average bag remained about the same--1.32 ducks/trip as compared to 1.35 in 1970. The average loss was also about the same--.27 in 1971 and .28 in 1970. With 82,613 regular duck hunting season visits, the retrieved kill and crippling loss amounted to 130,941 ducks. However, this may be somewhat misleading as to what the season was like. The combined opening day retrieved kill for the four states was 2.04, while for the balance of the season the average bag/visit was 1.00.

Iowa and Illinois were on the point system, while Minnesota and Wisconsin had a basic four-bird bag with no added restrictions on on mallards. Season length in all four states was 50 days. Illinois opened its regular season October 23; the other three states opened their seasons October 2. Illinois also had a special teal season, and Minnesota and Wisconsin had teal and scaup bonuses during the regular season. In Minnesota 5.6% took bonus birds; in Wisconsin 33% took bonus birds. In Iowa 5.7% were able to take over four birds with the point system; in Illinois 1.4% took over four birds with the point system.

For the first time in 25 years, blue-winged teal were the number one bird in the bag, followed closely by wood ducks and mallards. These three species accounted for over 75% of the UMR duck harvest. Baldpate, which are usually an important bird in the bag, fell off to a relatively small 5.8%.

For the first time in over 20 years, Minnesota had no gun deer season. The deer season in Wisconsin was again very good over-all; and the river counties are among those with the highest kill, although most hunting takes place on the uplands off the refuge. Iowa also had a very good deer season along the river, and a number of deer were taken on the refuge.

UM-13

Bag Check Summary of Species Taken
Upper Mississippi River Wildlife and Fish Refuge
Period: September-December, 1971

	1969	1970	1971
No. hunters checked	2,681	3,555	4,833
No. ducks checked	3,784	4,809	6,379
Average ducks per day	1.41	1.35	1.32

Species	No.	%	No.	%	No.	%
Mallard	910	24.0	1,329	27.6	1,526	23.9
Black	35	.9	24	.5	44	.7
Gadwall	91	2.4	49	1.0	61	.9
Baldpate	563	14.9	569	11.8	369	5.8
Pintail	59	1.6	95	2.0	100	1.6
G.w.teal	211	5.6	454	9.4	553	8.7
B.w.teal	581	15.4	849	17.7	1,843	28.9
Shoveller	44	1.2	34	.7	15	.2
Wood duck	994	26.3	1,088	22.6	1,539	24.1
Redhead	12	.3	18	.4	18	.3
Ring-neck	71	1.9	87	1.8	65	1.0
Canvas-back	114	3.0	72	1.5	53	.8
Scaup	65	1.7	89	1.9	154	2.4
Golden-eye	2	.1	9	.2	12	.2
Buffle-head	19	.5	20	.4	17	.3
Ruddy	3	.1	13	.3	3	.1
Mergansers	4	.1	9	.2	7	.1
Scoter	6	.2	1	-	0	-
Old squaw	-	-	-	-	-	-

Hunters took ducks as follows:

9 & 10			1	.03	0	0
~~xxx~~ 8			5	.14	4	.08
~~xxx~~ 7			12	.34	1	.02
~~xxx~~ 6	6	.22	32	.90	95	1.97
~~xxx~~ 5	19	.71	58	1.63	92	1.90
~~xxx~~ 4	213	7.94	191	5.37	184	3.81
3	328	12.23	376	10.58	382	7.90
* 2	462	17.23	657	18.48	987	20.42
1	765	28.53	987	27.76	1,454	30.09
0	865	32.26	1,236	34.77	1,634	33.81

1971 - Point system Illinois & Iowa — Scaup & teal bonus Minn. & Wisc.

For the first time in 25 years, BWTeal were the #1 bird in the bag at 28.9%, followed by wood ducks at 24.1%, Mallards at 23.9%, and GWTeal at 8.7%.

SUMMARY OF WATERFOWL BAG CHECK DATA
Upper Mississippi River Wildlife and Fish Refuge
Period: Regular 1971 Fall Season

District	Bag checked			Loss data		Coot killed	Hunting hour data		
	No. hunters	Ducks killed	Average kill	Hunters asked	Ducks lost		Hunters asked	Ducks killed	Hours hunted
Winona	751	993	1.32	746	202	100	746		3,533
La Crosse	2,346	2,787	1.19	2,331	640	266	2,330		8,324
Lansing	834	1,260	1.51	831	258	23	831		3,854
Guttenberg ~~Prairie~~	115	132	1.15	112	11	0	115		343
Cassville	331	568	1.71	331	110	23	214		847
Sav.-Clinton	456	639	1.40	456	58	2	456		2,579
TOTALS	4,833	6,379	1.32	4,807	1,279	414	4,692		19,480
				Average loss .27			Average hrs. per duck - 3.05 Average hrs. hunted - 4.03		
TOTALS PREVIOUS YEAR	3,555	4,809	1.35	3,473	989	541	3,513		17,357
				Average loss .28			Average hrs. per duck - 3.60 Average hrs. hunted - 4.94		

Comments: 1971 opening day check: 1,496 got 3,053 ducks for average of 2.04
Balance of season: 3,337 got 3,326 ducks for average of 1.00

E. Violations

1971 cases involving refuge personnel were closed as follows:

4	Take protected songbirds	$ 59.00	
3	Take grebe or cormorant	58.00	
2	Hunting w/o non-resident license	100.00	
16	Late shooting--waterfowl	424.00	
3	Erect blinds before hrs.	42.00	
2	Place decoys before hrs.	28.00	
8	Early shooting	232.00	
10	Transport uncased gun in motorboat	269.00	
1	Transport loaded gun in motorboat	59.00	
2	Hunt waterfowl from motorboat	58.00	
9	Unplugged shotgun waterfowl hunting	282.00	
3	Short plugs	100.00	
2	Hunt waterfowl in open water	28.00	
1	Illegal bait (game fish) on set lines	59.00	
3	Fish with too many lines	60.00	
2	Fish with bow during closed season	50.00	
1	Destroy trees on refuge	50.00	
2	Illegal removal of walnut trees	2 yrs. suspended & 3 yrs. suspended and probation	
1	Purchase trapping license while revoked	25.00	+ 1 yr. license suspension
19	Littering	640.00	
1	Trapping in closed rat season	50.00	+ yr. license suspen.
5	Hunt waterfowl in closed area	339.00	
1	Transport unlawfully killed ducks	29.00	
2	Over limit wood ducks	63.00	
2	Over limit ducks	69.00	
1	Transport loaded gun in car	59.00	
5	Moor boat on posted access	75.00	
16	Park car on posted access	246.00	
2	Criminal destruction of property-signs	100.00	
3	Wanton waste of coot	117.00	
1	Untagged catfish box traps	30.00	
1	Commercial fish w/o permit	20.00	+3 yr. permit suspen.
3	Hunt waterfowl outside blind--Ill.	90.00	
1	Unsigned unattached duck stamp	30.00	
1	No duck stamp	29.00	
2	Take or possess waterfowl closed season	145.00	
3	No boat lights	43.00	
2	No life preservers	29.00	
1	Trap within 3 feet of rat house	25.00	
147		$4,211.00	

1971 Juvenile Cases & Disposition

3 Take muskrats out of season with rifle.
6 months probation w/no use of firearms & $4. restitution

2 Probation violation of two of above for use of guns
Probation w/no guns extended additional three months

1971 Juvenile Cases (continued)

1 Hunt ducks w/unplugged shotgun
  Assigned to litter pickup for four hours by court
2 Park car in posted access area
  Assigned litter pickup for four hours by court

3 Hunt ducks in closed area
  La Crosse County court declined cases
1 Transport loaded gun in motorboat
  La Crosse County court declined case
2 Late shooting plus no duck stamp
  Clayton County court dismissed case
14

Pending 1970 Cases Closed 1971

1	Trap in closed season	$35.00 + 1 yr. lic. susp.
1	Trap in closed season	Case lost
2	Trap in closed season - juveniles	3 mos. probation each & 1 yr. license suspension
2	Late waterfowl shooting	78.00
1	Possess grebe	14.00

1970 Cases Not Previously Reported

3	No boat lights at night	$104.85
2	Late shooting waterfowl	100.00 + 1 yr. lic. susp.
3	No non-resident license	82.00

F. Safety

One more year added to the outstanding safety record of the staff of this refuge. As of December 31, 1971, 5,150 days have gone by without a lost time accident. We are all proud of this record and believe it possible because we all "THINK SAFETY" and "ACT SAFELY."

Not that we haven't had some near misses during the year, but fortunately they remained misses. One vehicular accident, however, marred the safety record when a student Wildlife Aid had a property damage accident by turning in front of a school bus and had the boat he was towing slightly damaged when struck.

VII. OTHER ITEMS

A. Items of Interest

1. Personnel Changes: As was reported in the 1970 narrative report, District Refuge Manager Eric B. Lawson retired January 9, 1971. Remaining in La Crosse, Wisconsin, he has been of assistance to the refuge many times during his first year of retirement.

Succeeding Lawson and reporting for duty January 11, 1971 was Matthias A. Kerschbaum from Shiawassee Refuge, by way of the U.S. Army. Matt moved into as tough a job as there is on the refuge and has done exceedingly well in picking up the reins and going on down the road. His fresh approaches and vigor with which he attacks the jobs ahead are most impressive.

As mentioned previously in this report, Ben Chio transferred to Upper Miss. on March 10, 1971 to fill the position as Sign Shop Foreman. Ben headed up similar duties at Treasure Lake JCCC, and through his efforts has increased the diversity of the signs being put out by the shop. He has had considerable experience and training in the many procedures that will be coming up and is thoroughly involved in the rehabilitation work at the warehouse.

The next change was on May 28, 1971 when Kenneth K. Krumm, Asst. Refuge Manager, Winona office, decided he, too, would lay up the paddles and see what was doing on the other side of the fence. After 36 years of federal service, all of which (except for his military duty) were spent in Region III, Ken could look back on some real accomplishments while in the system. A whing-ding of a retirement party was held on July 23 with 61 persons in attendance honoring Ken. He is remaining in the vicinity, and he drops by occasionally to check up on us. (See Photo Section)

To replace Ken Krumm in the Assistant slot, North Dakota's loss was certainly Upper Miss.'s gain when Don Young reported for duty on August 9. Don comes with a lot of good experience under his belt, and a savvy that portends a knowledgeable contribution to the management and problems facing us here. He dug right in on all the jobs given him and learned what hunting pressure and enforcement is like right quick. He almost "out-Fostered" Bart on some real good cases made during the season.

It looked for awhile last spring that we couldn't finance the Wildlife Aids we usually have during the summer months, but luckily funds held out and seven students hired. For the first time in all the years we have had student hires, we had a woman and a black on the staff--Janet Smith, a junior Wildlife Management student at Colorado State, and Larry Nelson, a sophomore Agronomy student at Arkansas AM&N College. Both were assigned to the Winona District and made fine additions to the work force. Manager Leinecke covers in more detail their specific assignments and accomplishments. The activities of the other five Aids are covered in the district reports.

2. Awards: Tempus keeps fugit-ing all over the place, and it caught up with Dave Mickelson and Don Young--each achieving 10 years of service and the pin award. Dave received his on December 1, 1971 at a PPBE meeting for the staff at the Guttenberg district office. Don's was given him December 28 at the Winona office with Winona staff present. We wish them both continued success in their careers.

3. Training: Mrs. Joswick attended DIPS workshop at Minneapolis January 27.

Bart Foster attended a law enforcement seminar sponsored by Southern Illinois University at Crab Orchard Refuge March 8-12.

The UMR staff attended Refuge Objectives and PPBE workshops held at Winona Holiday Inn on March 29-30 and October 5-8.

District Managers Leinecke, Mickelson, Bellinger and Public Use Specialist Hamernick attended the Civil Service Management II training workshop at Omaha, Nebraska August 23-28.

Hamernick attended Public Use Workshop at Crab Orchard October 12-15 and Public Use Measurement Techniques Workshops at Swan Lake November 1-2 and Squaw Creek November 3-5.

Ben Chio attended the Civil Service training course, Introduction to Supervision, at Des Moines, Iowa September 20-24.

Duncan Green attended Interagency Motor Equipment Conference sponsored by GSA at St. Louis, Mo. on October 6-7.

4. District Realignment: As the rest of the districts were beginning to get on the river, the district manager at Prairie du Chien, Wisconsin was spending his time moving the district office to Guttenberg, Iowa. The Guttenberg National Fish Hatchery had phased out their operations and transferred all buildings and holding ponds to the Upper Mississippi River Wild Life and Fish Refuge.

Following this move, the districts were realigned to form the Guttenberg and Cassville districts. The Cassville district now comprises all lands and waters in the State of Wisconsin within Pools 10 and 11. The Guttenberg responsibilities lie on the Iowa side of Pools 10 and 11.

The Guttenberg district manager now resides in the former Hatchery Manager's quarters and maintains his office in the aquarium building. The aquarium operations were continued this year, and plans are to upgrade and develop it into a visitor center.

And So -- An Observation

Here it is--the last one of these--and the wonderment is that I am here to see it out. Not being a philosophical person, I can't philosophize on my career in this great field. I can say, however, that I have truly been an honored person in that I was privileged to work with and for great men in our Bureau--Gabrielson, Cottam, Day, Salyer, Jim Silver, Janzen, Bill Taylor--to note a few by name, and to mention as in the same category the many, many more I have come to know.

It has been a career that spread from the beginnings of the blossoming of the refuge system and wildlife management as a profession to PPBE and other sophisticated operations. The passing of the practice of handing a guy a purchase order book and a badge when he reported signifying "He are now a Refuge Manager" is a happy demise. But, it still was a lot of fun to see how one could run a refuge and not go over the $50.00 limitation on open market spending.

So, it is with much feeling that I pen my signature to this last contribution of mine, documenting the excellent accomplishments of the UMR staff. This has got to be one of the best of any crews ever put together on any one refuge. My hat is off to them in grateful thanks. The "Boss" in refuges and his staff, and all other Regional and Central Office people who have been so kind to me--"Thanks!" to you also.

I close with the admonishment to "hang in there"--it's still worth fighting for. I hope to be on the sidelines watching and, hopefully, helping whenever I can to achieve our goals.

SIGNATURE PAGE

Submitted by:

Donald V. Gray
(Signature)

Donald V. Gray
Refuge Manager
Title

Date: March 10, 1972

Approved, Regional Office:

Date: MAR 10 1972

James B. Monnie
(Signature)

ASST

Regional Refuge Supervisor

FEB 72

Manager Gray presenting William W. Shaw, Carpenter, a Special Achievement Award of $150. for special efforts and excellent handling of the Sign Shop operation at Winona the past several years.

"With very few guidelines to go by, much experimenting was done when you first reported for duty in October 1964. From the start, you made many valuable additions and modifications to existing equipment, all of which increased the output and quality of the signs. This included making or copying intricate designs and manufacturing templates not available elsewhere.

The excellent and accident-free sign production work by temporary employees whom you trained, including YOC and NYC high school-age youths, attests to your capable supervision of this activity. We commend you also for your cooperation in helping all who sought advice on signs and in meeting the many requests for special signs and memorials."

The award was made on October 5, 1971 before the PPBE class session being held at Winona with 20 representatives from five refuges.

FEB 72

Manager Gray presents 10-year Service Award to Refuge Manager Don Young

FEB 72

Listening closely to the words of PPBE'se were these "eager" students. Session at the Holiday Inn, Winona, October 5 to 8, 1971

FEB 72

FEB 72

And our honorable teachers--Les Beatty and Charles "Pete" Bryant. They bore up well throughout.

FEB 72

FEB 72

The first of the two new buildings at the Service Facility complex at Winona. The oil house is a truly welcome addition and eliminated a serious fire hazard.

FEB 72

The other was a four-stall material storage building constructed to house materials and supplies displaced by the expanding sign shop.

KEN KRUMM RETIREMENT PARTY - May 28, 1971

"Urrrup! No thanks, but er, well, all right."

"Who said nobody never got nothing but bad news from no Game Agent." GMA Bill Ellerbrock in background.

The fellow birders showed appreciation for Ken's efforts in helping establish the Hiawatha Valley Bird Club. Karl Lipsohn, representing the Club, wishes the best for Ken and Emily.

A couple of ol' time buddies got together, and Refuge Chief Carpenter made a presentation for the Regional Director.

"Now if you'd got me a hearing aid to go with these, I could really tell you that it is a gilly-ga-loo bird." Standing behind is a projection screen for Ken's slides.

And a small sum for diet foods!

Staff Conference--Winona, Mn.--May 28, 1971

L-R (seated)--Jim Gritman, Bill Hutchinson, Jim Mick, Jay Hamernick, Don Gray, Janet Smith, Bob Litke, Forrest Carpenter. (standing)--Jay Bellinger, Mark Wagner, George Moylan, Jeff Smith, Dave Mickelson, Matt Kerschbaum, Bill Shaw, Bart Foster and Larry Nelson.

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

WATERFOWL
(Continuation Sheet)

REFUGE Upper Mississippi Refuge MONTHS OF January TO April, 1971

(1) Species	(2) Weeks of reporting period: 11	12	13	14	15	16	17	18	(3) Estimated waterfowl days use	(4) Production: Broods seen	Estimated total
Swans:											
Whistling		105	535	5,126	3,520	195	2		53,601		
Trumpeter											
Geese:											
Canada	2,605	4,640	1,805	1,680	1,155	245	152		111,674		
Cackling											
Brant											
White-fronted		4			1	2			43		
Snow	17	10	9	125	12	22			1,121		
Blue	100	76	64	310	75	80			717		
Other											
Ducks:											
Mallard	10,255	19,195	21,885	25,130	19,700	10,225	5,625		831,603		
Black	465	825	2,075	2,800	2,530	1,130	100		68,411		
Gadwall	25	271	1,290	800	850	630	330		28,008		
Baldpate	405	1,426	5,010	7,450	7,740	4,050	1,300		181,173		
Pintail	630	1,750	2,550	1,390	735	455	110		56,320		
Green-winged teal			935	1,795	2,445	1,975	1,230		54,000		
Blue-winged teal		310	880	2,275	4,775	5,040	3,800		112,140		
Cinnamon teal	1								5		
Shoveler	260	415	1,450	1,845	2,450	1,860	1,485		64,745		
Wood	125	465	1,470	1,815	4,400	4,700	4,633		129,767		
Redhead	590	600	2,745	2,050	2,340	220	5		54,055		
Ring-necked	780	790	11,720	11,430	8,030	2,270	345		217,570		
Canvasback	680	1,730	7,115	18,420	17,610	1,280	25		252,030		
Scaup	2,425	12,875	79,830	106,560	92,040	22,350	7,400		2,038,293		
Goldeneye	3,050	3,290	5,680	6,350	4,970	550	55		208,297		
Bufflehead	150	400	625	1,545	1,570	230	30		28,180		
Ruddy	42	270	425	420	555	290	65		12,985		
Other-Merganser	2,420	2,425	6,160	8,450	8,070	2,560	680		235,477		
Coot:	250	1,010	10,800	36,180	77,340	45,100	17,100		1,190,168		

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans	53,601	5,126	
Geese	113,555	32,514	
Ducks	4,583,059	200,525	
Coots	1,190,168	77,340	

SUMMARY

Principal feeding areas _____

Principal nesting areas _____

Reported by _____

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

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

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

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

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

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

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

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

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

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

MIGRATORY BIRDS
(other than waterfowl)

Refuge Upper Mississippi Months of Jan. 1 to April 30 19/71

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date Wk. ended	Number	Date Wk. ended	Number	Date Wk. ended	Number Colonies	Total # Nests	Total Young	Estimated Number Use Days
I. Water and Marsh Birds:										
Holboell's Grebe	2	4/17	2	4/17	1	4/24				21
Horned Grebe	1	4/10	3	4/17	2	Present				56
Eared Grebe	5	3/27	90	4/24	50	Present				2,170
Pied-billed Grebe	1	2/20	695	4/24	500	Present				16,149
White Pelican										0
Double-crested Cormorant	1	3/27	255	5/1	255	Present				4,361
Great Blue Heron	2	Present	2,650	4/24	2,540	Present				64,386
Green Heron	20	4/10	224	5/1	224	Present				3,087
American Egret	10	3/27	445	5/1	445	Present				11,417
Black-crowned Night Heron	7	4/10	47	4/24	43	Present				819
Least Bittern										0
American Bittern	6	4/17	45	5/1	45	Present				203
King Rail										0
Virginia Rail										0
Sora Rail	50	4/10	475	5/1	475	Present				7,861
Yellow crowned night heron	1	4/10	2	4/24	1	Present				28
II. Shorebirds, Gulls and Terns:										
Common Moorhen	1	4/10	1		1	Present				14
Killdeer	8	3/13	1,070	4/17-24	810	Present				30,170
Wood cock	1	3/27	25	5/1	25	Present				630
Common Snipe	9	Present	265	4/17-24	245	Present				8,603
Yellow-legs sp.	75	4/10	580	5/1	580	Present				10,584
Herring Gull	50	3/20	1,600	4/10	860	Present				43,575
Ring-billed Gull	105	Present	13,200	4/10	4,025	Present				462,063
Franklin's Gull	3	4/3	6	4/10	1	Present				91
Common Tern	20	4/10	145	4/24	130	Present				2,905
Caspian Tern										0
Black Tern	1	4/10	2	5/1	2	Present				21
Sandpipers sp.	25	3/20	469	4/17	370	Present				14,518

(over)

(1)	(2)		(3)		(4)		(5)			(6)
		Wk. ended		Wk. ended		Wk. ended				
III. Doves and Pigeons:										
Mourning dove	205	Present	765	5/1	765	Present				39,011
White-winged dove										0
IV. Predaceous Birds:										
Golden eagle										
Duck hawk										
Horned owl	221	Present	266	4/17-5/1	266	Present				27,979
~~Marsh~~ Osprey	2	3/27	8	5/1	8	Present				161
Raven										0
Crow	1,350	Present	2,540	4/3	1,950	Present				208,670
Bald Eagle	142	Present	198	3/13	2	Present				12,376
Snowy Owl	1	2/13	1	2/13	1	2/13				7
Barred Owl	300	Present	340	4/17-5/1	340	Present				37,205
Screech Owl	93	Present	123	4/10	113	Present				12,117
Red-tailed Hawk	130	Present	220	4/3	185	Present				19,040
Red-shouldered Hawk	15	Present	26	4/3	18	Present				2,044
Rough-legged Hawk	28	Present	35	4/17	10	Present				3,213
Marsh Hawk	35	Present	60	4/17-24	68	Present				4,413
~~Turkey Vulture~~	5	3/27	116	4/24	105	Present				3,005
Black Vulture										0

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-[illegible]2
Form NR-2
(April 1946)

UPL[illegible]D GAME BIRDS

Refuge [redacted] Months of January to April 30, 19 71

(1) Species	(2) Density	(3) Young Produced			(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres Per Bird	Number broods observed	Estimated Total	Percentage	Hunting	For Re-stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Ring-necked pheasant	1,000								140	
Ruffed grouse	5,288								20	
Bob-white quail	5,288								120	
Gray partridge	5,288								25	
Wild turkey	5,000								5	

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.

3-1754
Form N..-4
(June 1945)

SMALL MAM S

Refuge Upper Mississippi Year ending April 30, 1971

(1) Species	(2) Density		(3) Removals					(4) Disposition of Furs						(5) Total Population
								Share Trapping						
Common Name	Cover Types & Total Acreage of Habitat	Acres Per Animal	Hunting	Fur Harvest	Predator Control	For Re-stocking	For Re-search	Permit Number	Trappers Share	Refuge share	Total Refuge Furs Shipped	Furs Donated	Furs Destroyed	
Muskrat				106,897				866 Permits issued						69,215
Mink				104				1970-71 trapping season.						525
Beaver				1105				Trap tag sales $3,570.66 @ 10¢ ea.						2,845
Otter					1									125
Raccoon			455	376										6,920
Gray & red fox			70	77										455
Striped skunk			5											245
Cottontail Rabbit			385											900
Opossum			30	12										785
Gray & Fox squirrels			[illegible]											4,055
Woodchuck					10									230
Badger														10
List removals by Predator Animal Hunter														

REMARKS:

Reported by _____

INSTRUCTIONS

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

(1) SPECIES: Use correct common name. Example: Striped skunk, spotted skunk, short-tailed weasel, gray squirrel, fox squirrel, white-tailed jackrabbit, etc. (Accepted common names in current use are found in the "Field Book of North American Mammals" by H. E. Anthony and the "Manual of the Vertebrate Animals of the Northeastern United States" by David Starr Jordan.)

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

(3) REMOVALS: Indicate the total number under each category removed since April 30 of the previous year, including any taken on the refuge by Service Predatory Animal Hunter. Also show any removals not falling under headings listed.

(4) DISPOSITION OF FUR: On share-trapped furs list the permit number, trapper's share, and refuge share. Indicate the number of pelts shipped to market, including furs taken by Service personnel. Total number of pelts of each species destroyed because of unprimeness 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.

32/15

3-1750
Form NF
(Rev. March 1953)

WATERFOWL

REFUGE Upper Mississippi MONTHS OF May TO August, 19 71

(1) Species	Weeks of reporting period (2) 1	2	3	4	5	6	7	8	9	10
Swans:										
Whistling	2									
Trumpeter										
Geese:										
Canada	54	52	52	52	52	60	100	100	130	130
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	4,490	4,015	3,965	3,965	3,545	3,730	3,750	3,825	4,225	8,780
Black	65	40	40	40	45	45	45	50	50	55
Gadwall	60	20	15	10						
Baldpate	255	70	30	15						
Pintail	20	5	5							
Green-winged teal	415	270	175	145	145	150	150	160	175	180
Blue-winged teal	3,075	2,185	1,650	1,385	1,230	1,225	1,030	935	1,070	1,080
Cinnamon teal										
Shoveler	805	310	180	100	75	65	55	60	40	45
Wood	5,210	4,960	4,860	4,760	5,040	5,135	5,235	5,535	6,060	8,475
Redhead	9									
Ring-necked	85	35	5						3	3
Canvasback	4									
Scaup	2,205	520	130	40	5					
Goldeneye	10									
Bufflehead	20									
Ruddy										
Other - Merganser	515	399	359	340	345	375	330	330	331	381
	8,550	4,150	2,750	2,150	1,125	1,050	880	715	825	875
Coot:										

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

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

WATERFOWL
(Continuation Sheet)

REFUGE Upper Mississippi MONTHS OF May TO August, 19 71

(1) Species	(2) Weeks of reporting period 11	12	13	14	15	16	17	18	(3) Estimated waterfowl days use	(4) Production Broods seen	Estimated total
Swans:											
Whistling									14		
Trumpeter											
Geese:											
Canada	130	130	130	83	80	90	90		10,599	6	38
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard	10,250	10,315	11,400	12,475	13,750	14,200	15,000		917,225	61	4,986
Black	75	80	85	85	170	345	375		11,640	2	80
Gadwall						5	10		820		
Baldpate				20	20	200	1,925		17,495		
Pintail					20	120	240		2,805		
Green-winged teal	185	490	200	255	360	475	1,150		35,265	0	199
Blue-winged teal	1,240	960	1,370	1,780	3,345	5,750	7,275		253,435	5	470
Cinnamon teal											
Shoveler	45	45	50	50	50	55	60		14,470		
Wood	11,865	11,965	14,115	14,915	15,850	16,950	17,450		1,098,655	96	9,717
Redhead									90		
Ring-necked	3								883		
Canvasback									20		
Scaup									20,050		
Goldeneye									70		
Bufflehead									140		
Ruddy											
Other - Merganser									50,360	8	583
									2,423,423		
Coot:	1,100	1,120	1,160	1,180	1,185	1,285	1,610		219,725	5	449

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans	14	2	
Geese	10,599	130	38
Ducks	2,423,423	44,015	16,035
Coots	219,725	8,550	449

SUMMARY

Principal feeding areas _____

Principal nesting areas _____

Reported by _____

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

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

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

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

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

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

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

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

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

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

MIGRATORY BIRDS
(other than waterfowl)

Refuge Upper Mississippi Months of May to August 1971

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date Wk. ended	Number	Date Wk. ended	Number	Date Wk. ended	Number Colonies	Total # Nests	Total Young	Estimated Number Days Use
I. Water and Marsh Birds:										
Holboell's Grebe										
Horned Grebe	10	Present	10	5/8	2	5/22				119
Eared Grebe	20	Present	20	5/8	5	5/22				235
Pied-billed Grebe	490	Present	490	5/8	320	Present				29,120
White Pelican	2	5/15	8	5/22	2	5/29				84
Double-crested Cormorant	365	Present	365	5/8	70	Present				13,160
Great Blue Heron	2,580	Present	4,380	8/21	3,780	Present	11	1,310	1,632	431,711
Green Heron	321	Present	1,830	8/14	1,530	Present				134,603
American Egret	490	Present	1,474	8/7	1,250	Present	8	210	322	112,147
Black-crowned Night Heron	57	Present	145	8/21-28	145	Present				8,624
Least Bittern	10	Present	120	8/14-28	120	Present				4,557
American Bittern	45	Present	70	8/14	60	Present				6,580
King Rail										
Virginia Rail	35	Present	35	5/8-22	5	Present				1,505
Sora Rail	650	Present	1,630	8/28	1,630	Present				115,465
Yellow-crowned night herons	31	Present	55	8/14-28	55	Present	1	5	4	4,578
II. Shorebirds, Gulls and Terns:										
Killdeer	870	Present	1,030	8/21	900	Present				97,860
Wood cock	25	Present	70	8/14-28	70	Present				5,495
Common Snipe	335	Present	520	8/28	520	Present				36,960
Yellow-legs sp.	460	Present	1,060	8/28	1,060	Present				69,370
Herring Gull	800	Present	960	5/22	205	Present				32,900
Ring-billed Gull	3,800	Present	4,200	5/15	1,220	Present				121,450
Franklin's Gull	1	Present	2	6/12	1	Present				42
Common Tern	165	Present	165	5/8	75	Present				8,932
Caspian Tern	6	P 8/7	6	8/7	6	8/7				42
Black Tern	27	Present	1,700	8/7	1,220	Present				119,854
Sandpipers sp.	685	Present	2,475	8/28	2,475	Present				165,914
Black-bellied Plover	2	Present	2	5/8-15	1	5/22				35

(over)

(1)	(2)		(3)		(4)		(5)			(6)
		Wk. ended		Wk. ended		Wk. ended				
III. Doves and Pigeons:										
Mourning dove	865	Present	3,100	8/28	3,100	Present				182,700
White-winged dove										
IV. Predaceous Birds:										
Golden eagle										
Duck hawk										
Horned owl	251	Present	281	6/26-7/17	246	Present				32,214
~~Marsh~~ Osprey	8	Present	8	5/8	2	Present				196
Raven										
Crow	1,950	Present	3,200	8/21-28	3,200	Present				295,505
Bald Eagle	2	Present	5	8/7	4	Present		1	2	343
Snowy Owl										
Barred Owl	340	Present	375	7/10-8/28	375	Present				42,770
Screech Owl	125	Present	140	" "	140	Present				16,030
Red-tailed Hawk	185	Present	250	7/31	210	Present				23,793
Red-shouldered Hawk	18	Present	22	summer	22	Present				2,485
Rough-legged Hawk	10	Present	13	6/12-7/3	10	Present				1,225
Marsh Hawk	59	Present	63	5/15	44	Present				5,586
~~Turkey Vulture~~	104	Present	175	8/21-28	175	Present				14,371
Black Vulture										

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.

3-1750b
Form NR-1B
(Rev. Nov. 1957)

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

WATERFOWL UTILIZATION OF REFUGE HABITAT

Refuge Upper Mississippi For 12-month period ending August 31, 1971

Reported by Donald V. Gray Title Refuge Manager

(1) Area or Unit Designation	(2) Habitat Type	Acreage		(3) Use-days	(4) Breeding Population	(5) Production
WINONA	Crops		Ducks	2,430,926	1,250	2,900
	Upland		Geese	45,502		
	Marsh		Swans	63,366		
	Water		Coots	2,645,255	75	190
	Total		Total	5,185,049	1,325	3,090
LA CROSSE	Crops		Ducks	4,921,240	3,400	4,710
	Upland		Geese	110,543	20	8
	Marsh		Swans	16,770		
	Water		Coots	1,821,810	150	75
	Total		Total	6,873,363	3,570	4,793
LANSING	Crops		Ducks	3,335,206	1,920	5,010
	Upland		Geese	6,855		
	Marsh		Swans	595		
	Water		Coots	1,485,750	400	200
	Total		Total	4,828,406	2,320	5,210
GUTTENBERG	Crops		Ducks	627,006	600	1,515
	Upland		Geese	149		
	Marsh		Swans	28		
	Water		Coots	427,878		
	Total		Total	1,055,061	600	1,515
CARSVILLE	Crops		Ducks	1,281,315	1,000	1,530
	Upland		Geese	2,518		
	Marsh		Swans	84		
	Water		Coots	327,100	100	24
	Total		Total	1,611,017	1,100	1,554
SAVANNA	Crops		Ducks	2,976,760	1,680	370
	Upland		Geese	155,496	50	30
	Marsh		Swans	120		
	Water		Coots	484,520		
	Total		Total	3,616,896	1,730	400
REFUGE-WIDE	Crops		Ducks	15,575,453	9,850	16,035
	Upland		Geese	321,063	70	38
	Marsh		Swans	80,963		
	Water		Coots	7,192,313	725	449
	Total		Total	23,169,792	10,645	16,522

(over)

INSTRUCTIONS

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

(1) Area or Unit: A geographical unit which, because of size, terrain characteristics, habitat type and current or anticipated management practices, may be considered an entity apart from other areas in the refuge census pattern. The combined estimated acreages of all units should equal the total refuge area. A detailed map and accompanying verbal description of the habitat types of each unit should be forwarded with the initial report for each refuge, and thereafter need only be submitted to report changes in unit boundaries or their descriptions.

(2) Habitat: Crops include all cultivated croplands such as cereals and green forage, planted food patches and agricultural row crops; upland is all uncultivated terrain lying above the plant communities requiring seasonal submergence or a completely saturated soil condition a part of each year, and includes lands whose temporary flooding facilitates use of non-aquatic type foods; marsh extends from the upland community to, but not including, the water type and consists of the relatively stable marginal or shallow-growing emergent vegetation type, including wet meadow and deep marsh; and in the water category are all other water areas inundated most or all of the growing season and extending from the deeper edge of the marsh zone to strictly open-water, embracing such habitat as shallow playa lakes, deep lakes and reservoirs, true shrub and tree swamps, open flowing water and maritime bays, sounds and estuaries. Acreage estimates for all four types should be computed and kept as accurate as possible through reference to available maps supplemented by periodic field observations. The sum of these estimates should equal the area of the entire unit.

(3) Use-days: Use-days is computed by multiplying weekly waterfowl population figures by seven, and should agree with information reported on Form NR-1.

(4) Breeding Population: An estimate of the total breeding population of each category of birds for each area or unit.

(5) Production: Estimated total number of young raised to flight age.

Interior Duplicating Section, Washington, D. C. 27580

3- 52
Form NR-2
(April 1946)

UPL D GAME BIRDS

Refuge Upper Mississippi Months of May to August, 1971

(1) Species	(2) Density	(3) Young Produced			(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres Per Bird	Number broods observed	Estimated Total	Percentage	Hunting	For Re-stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Ring-necked pheasant	1,000		1	30					246	
Ruffed grouse	5,288		3	33					275	
Bob-white quail	5,288		3	44					185	
Gray partridge	5,288		1	20					40	

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.

3-1750
Form NF
(Rev. March 1953)

WATERFOWL

REFUGE Upper Mississippi River Wildlife and Fish Refuge MONTHS OF September TO December, 1971

(1) Species	Weeks of reporting period (2) 1	2	3	4	5	6	7	8	9	10
Swans:										
Whistling						15	6		9	560
Trumpeter										
Geese:										
Canada	90	98	115	180	277	1,150	2,350	3,044	4,573	3,729
Cackling						10				
Brant										
White-fronted										
Snow					60	387	331	736	859	291
Blue					20	367	405	627	1,465	588
Other - Hutchins									20	30
Ducks:										
Mallard	15,850	16,950	17,550	18,400	18,780	20,910	32,165	39,745	54,020	55,030
Black	440	570	580	680	1,110	2,015	2,210	2,515	2,620	2,130
Gadwall	10	10	30	345	660	1,100	2,310	3,420	3,060	1,490
Baldpate	4,650	10,595	16,975	26,970	37,240	52,545	59,185	44,610	28,260	12,785
Pintail	360	370	715	1,550	3,785	5,250	7,560	4,985	5,260	3,370
Green-winged teal	1,295	1,350	2,410	2,605	5,990	4,565	3,415	4,660	3,530	2,455
Blue-winged teal	8,700	10,300	9,800	8,670	13,400	10,540	4,045	2,265	1,175	420
Cinnamon teal										
Shoveler	65	50	60	90	245	580	785	1,050	825	420
Wood	18,200	19,400	19,200	15,680	18,550	15,950	9,490	4,985	2,395	1,260
Redhead				5	20	155	3,850	2,930	3,935	2,415
Ring-necked			10	20	45	835	5,625	7,290	14,330	12,360
Canvasback					40	450	8,590	41,055	55,315	32,755
Scaup					700	9,060	26,860	34,120	48,290	55,325
Goldeneye									325	710
Bufflehead						10	150	2,580	3,145	3,745
Ruddy					10	170	445	1,285	1,885	1,845
Other - Merganser	550	550	455	400	445	360	355	310	210	345
w.w. scoter									5	5
old squaw										20
Coot:	1,950	7,500	30,500	48,400	62,000	120,850	174,000	172,700	140,860	46,800

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

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

WATERFOWL
(Continuation Sheet)

REFUGE Upper Mississippi River Wild Life and Fish Refuge MONTHS OF September TO December, 19 71

(1) Species	(2) Weeks of reporting period 11	12	13	14	15	16	17	18	(3) Estimated waterfowl days use	(4) Production Broods seen	Estimated total
Swans:											
Whistling	976	1,054	555	1,418	607	533	156	10	36,335		
Trumpeter											
Geese:											
Canada	3,196	3,270	2,055	1,680	1,109	1,088	291	90	184,981		
Cackling									30		
Brant											
White-fronted											
Snow	312	195	44	5	4				17,100		
Blue	530	300	65	7	5	2			23,112		
Other - Hutchins	20								450		
Ducks:											
Mallard	52,240	43,900	30,425	17,260	25,145	20,630	4,410	2,175	3,272,545		
Black	2,125	1,650	1,000	1,075	1,090	665	125	35	152,805		
Gadwall	1,215	640	160	140	40	20	5		97,665		
Baldpate	8,275	4,825	305	170	50	10			2,123,595		
Pintail	2,225	1,090	980	320	80	40			260,275		
Green-winged teal	1,550	790	185	25	25				239,505		
Blue-winged teal	130	30	10						478,830		
Cinnamon teal											
Shoveler	180	110							28,670		
Wood	530	310	30						866,220		
Redhead	1,365	765	330	80	30	5			109,410		
Ring-necked	11,150	6,840	1,480	1,155	1,430	610	20		431,185		
Canvasback	28,205	29,070	11,100	2,995	1,800	20			1,443,575		
Scaup	55,200	49,800	18,795	6,610	1,900	680	80	5	2,099,185		
Goldeneye	1,650	2,115	1,935	2,160	2,290	1,780	1,010	555	97,250		
Bufflehead	3,410	3,020	1,200	1,130	710	150	25		133,115		
Ruddy	1,225	610	170		35	15			52,520		
Other-Merganser	750	1,040	1,425	6,515	8,655	7,555	4,205	1,450	235,210		
w.w. scoter	20				10				270		
old squaw	20								280		
Coot:	15,750	9,675	1,550	695	380	130			5,730,060		

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans	36,335	1,418	
Geese	225,673	6,917	
Ducks	12,122,110	228,585	
Coots	5,730,060	174,000	

SUMMARY

Principal feeding areas _____

Principal nesting areas _____

Reported by _____

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

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

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

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

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

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

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

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

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

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

MIGRATORY BIRDS
(other than waterfowl)

Refuge Upper Mississippi Months of September to December 19~~4~~71

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date Wk. ended	Number	Date Wk. ended	Number	Date Wk. ended	Number Colonies	Total # Nests	Total Young	Estimated Number
I. Water and Marsh Birds:										
Holboell's Grebe										0
Horned Grebe	5	10/16	12	11/6	5	11/20				294
Eared Grebe										0
Pied-billed Grebe	560	Present	2,100	10/16	55	12/11				98,175
White Pelican	1	9/25	1	9/25&10/9	1	10/9				14
Double-crested Cormorant	80	Present	1,500	10/9	25	11/20				35,000
Great Blue Heron	3,655	Present	3,655	9/4	3	Present				160,846
Green Heron	1,530	Present	1,530	9/4-11	5	11/27				53,585
American Egret	1,300	Present	1,435	9/11	10	11/27				57,729
Black-crowned Night Heron	150	Present	150	9/4	10	10/30				4,655
Least Bittern	120	Present	120	9/4-18	5	11/6				4,165
American Bittern	100	Present	115	9/11	10	11/20				4,445
~~XXXXXXXX~~ Common Loon	3	10/23	11	10/30	1	12/4				126
Virginia Rail	5	Present	30	9/25	10	10/2				455
Sora Rail	5,780	Present	16,260	9/25	5	11/27				430,325
Yellow-crown night heron	61	Present	61	9/4	5	10/16				1,967
II. Shorebirds, Gulls and Terns:										
Killdeer	1,175	Present	1,380	9/11	5	Present				62,580
Wood cock	70	Present	90	10/2	5	11/6				3,675
Common Snipe	525	Present	1,775	10/2	12	Present				78,722
Yellow-legs sp.	1,080	Present	1,240	9/18	25	11/27				47,250
Herring Gull	505	Present	1,345	11/6	55	Present				88,445
Ring-billed Gull	1,425	Present	5,650	11/6	425	Present				408,870
Franklin's Gull	2	Present	100	9/25	5	12/25				5,159
Common Tern	160	Present	305	9/25	25	11/20				12,390
Caspian Tern	8	Present	37	9/25	2	10/16				812
Black Tern	1,090	Present	1,090	9/4	10	10/30				23,275
Sandpipers sp.	2,050	Present	2,500	9/25	50	11/20				111,895
Avocet	7	9/18	7	9/18	7	9/18				49
Dowitcher	100	10/23	100	10/23-11/6	100	11/6				2,100

(over)

(1)	(2)		(3)		(4)		(5)			(6)
		Wk. ended		Wk. ended		Wk. ended				
III. Doves and Pigeons:										
Mourning dove	3,170	Present	3,170	9/4	255	Present				115,430
White-winged dove										0
IV. Predaceous Birds:										
Golden eagle	1	11/6	2	11/27	1	Present				63
Duck hawk										0
Horned owl	271	Present	271	9/4-11	246	Present				31,521
~~Marsh~~ Osprey	3	Present	14	9/18-25	1	11/6				441
Raven										0
Crow	3,200	Present	4,175	9/25	1,475	Present				351,610
Bald Eagle	1	9/11	260	12/25	227	Present				9,170
Snowy Owl	1	11/27	1	11/27	1	11/27				7
Barred Owl	375	Present	380	9/11	355	Present				45,150
Screech Owl	140	Present	140	9/4	130	Present				16,485
Red-tailed Hawk	220	Present	260	10/9	110	Present				21,525
Red-shouldered Hawk	22	Present	33	9/18-25	4	Present				1,449
Rough-legged Hawk	10	Present	40	11/13	28	Present				2,667
Marsh Hawk	55	Present	95	10/2	42	Present				7,826
~~Turkey Vulture~~	~~165~~	~~Present~~	~~185~~	~~9/11-18~~	~~15~~	~~11/26~~				~~8,045~~
Black Vulture										

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.

3-1750c
Form -10
(Sept. 1960)

WATERFOWL HUNTER KILL SURVEY

Refuge **Upper Mississippi River Wild Life and Fish Refuge** Year 196 71

(1) Weeks of Hunting	(2) No. Hunters Checked	(3) Hunter Hours	(4) Waterfowl Species and Nos. of Each Bagged	(5) Total Bagged	(6) Crippling Loss	(7) Total Kill	(8) Est. No. of Hunters	(9) Est. Total Kill
10/2-8		2,296 hunted 9,379 hours	1,640 BWTeal; 1,204 Woodies; 765 Mallard; 391 GWTeal; 136 Baldpate; 28 Pintail; 23 Black; 18 Gadwall; 5 Shoveller; 4 Ringneck; 2 ea. Canvasback, Scaup, Merganser; 1 Bufflehead (214 Coot)	2,431 got 4,221 ducks & 214 coot	2,417 lost 902 ducks			
10/9-15		564 hunted 2,322 hours	185 Mallard; 114 Baldpate; 102 BWteal; 75 Woodies; 53 GWTeal; 27 Pintail; 8 Scaup; 7 ea. Gadwall & Ringneck; 6 Black; 2 Redhead; 1 each Canvasback & Ruddy (85 Coot)	569 got 588 ducks & 85 coot	562 lost 103 ducks			
10/16-22		296 hunted 1,149 hours	66 Mallard; 32 Baldpate; 22 BWTeal; 21 GWTeal; 16 Woodies; 14 Ringneck; 13 Pintail; 8 Gadwall; 5 Scaup; 4 ea. Bufflehead, Redhead & Canvasback; 2 Shoveller; 1 Black (29 Coot)	296 got 212 ducks+ 29 Coot	296 lost 47 ducks			
10/23-29		568 hunted 2,863 hours	181 Woodies; 117 Mallard; 51 GWTeal; 43 BWTeal; 38 Baldpate; 18 Scaup; 13 ea. Pintail & Gadwall; 10 Ringneck; 7 Canvasback; 4 Shoveller; 3 Bufflehead; 2 ea. Ruddy and Black; 1 ea. Redhead & Merganser (35 Coot)	568 got 504 ducks 35 Coot	568 lost 84 ducks			
10/30-11/5		425 hunted 1,624 hours	157 Mallard; 61 Woodies; 45 Scaup; 35 BWT; 33 Baldpate; 28 GWTeal; 23 Ringneck; 12 Canvasback; 11 Pintail; 10 Gadwall; 6 Redhead; 3 Black; 2 Shoveller; 1 ea. Goldeneye and Bufflehead (27 Coot)	425 got 428 ducks 27 coot	419 lost 72 ducks			
11/6-12		314 hunted 1,131 hours	120 Mallard; 47 Scaup; 25 Canvasback; 8 Baldpate; 7 GWTeal; 5 Black; 4 ea. Redhead; Merganser & Goldeneye; 3 ea. Gadwall, Pintail & Ringneck; 2 ea. Bufflehead & Woodie; 1 BWTeal (22 Coot)	315 got 238 ducks 22 coot	314 lost 48 ducks			

(over)

INSTRUCTIONS

(1) The first week of hunting begins with opening day and ends at the close of hunting 6 days later. Successive weeks follow the same pattern.

(2) The goal is to survey a minimum of 25 percent of refuge hunters each week and to record data only from those who have completed their day's hunting. This information should be collected during each day of the week and in each area hunted in relative proportion to the hunter effort expended. When the 25 percent goal cannot be achieved, particular care should be taken to collect representative data.

(3) Record the total number of hours the hunters spent hunting on the refuge.

(4) List waterfowl species in decreasing order of numbers bagged. Sample entry: Mallard (61), Pintail (36), Redhead (16), Gadwall (11), Widgeon (6), Coot (4), Canada Goose (3), Green-winged Teal (1).

(5) Record total numbers of waterfowl bagged.

(6) Record total numbers of waterfowl reported knocked down but not recovered.

(7) Total of Columns 5 and 6.

(8) Estimate the total number of hunters who hunted on the refuge during the week, including hunters checked (Column 2).

(9) Kill sample projected to 100 percent. Column 9 = $\frac{\text{Column 8}}{\text{Column 2}}$ x Column 7.

80348-60

3-1750c
Form [illegible]-1C
(Sept. 1960)

WATERFOWL HUNTER KILL SURVEY

Refuge **Upper Mississippi River Wild Life and Fish Refuge** Year 19~~6~~71

(1) Weeks of Hunting	(2) No. Hunters Checked	(3) Hunter Hours	(4) Waterfowl Species and Nos. of Each Bagged	(5) Total Bagged	(6) Crippling Loss	(7) Total Kill	(8) Est. No. of Hunters	(9) Est. Total Kill
11/13-19		212 hunted 856 hours	99 Mallard; 25 Scaup; 7 Baldpate; 6 Goldeneye; 4 Ringneck; 3 ea. Pintail & Black; 2 ea. Gadwall, GWTeal, Shoveller, Canvasback & Bufflehead; 1 Redhead (2 Coot)	212 got 158 ducks 2 coot	212 lost 16 ducks			
11/20-26		17 hunted 106 hours	17 Mallard; 4 ea. Scaup & Bufflehead; 2 Pintail; 1 ea. Black, Baldpate and Goldeneye	17 got 30 ducks & 0 coot	17 lost 7 ducks			
Season TOTAL:	4,692 hunted	19,430 hours	1,843 BWTeal; 1,539 Woodies; 1,526 Mallard 553 GWTeal; 369 Baldpate; 154 Scaup; 100 Pintail; 65 Ringneck; 61 Gadwall; 53 Cans; 44 Black; 18 Redhead; 17 Bufflehead; 15 Shoveller; 12 Goldeneye; 7 Merganser; 3 Ruddy	4,833 hunters bagged 6,379 ducks	4,805 lost 1,279 ducks	4,833 killed 7,665 ducks	82,613 Regular Season	130,941 Regular Season

(over)

INSTRUCTIONS

(1) The first week of hunting begins with opening day and ends at the close of hunting 6 days later. Successive weeks follow the same pattern.

(2) The goal is to survey a minimum of 25 percent of refuge hunters each week and to record data only from those who have completed their day's hunting. This information should be collected during each day of the week and in each area hunted in relative proportion to the hunter effort expended. When the 25 percent goal cannot be achieved, particular care should be taken to collect representative data.

(3) Record the total number of hours the hunters spent hunting on the refuge.

(4) List waterfowl species in decreasing order of numbers bagged. Sample entry: Mallard (61), Pintail (36), Redhead (16), Gadwall (11), Widgeon (6), Coot (4), Canada Goose (3), Green-winged Teal (1).

(5) Record total numbers of waterfowl bagged.

(6) Record total numbers of waterfowl reported knocked down but not recovered.

(7) Total of Columns 5 and 6.

(8) Estimate the total number of hunters who hunted on the refuge during the week, including hunters checked (Column 2).

(9) Kill sample projected to 100 percent. Column 9 = $\frac{\text{Column 8}}{\text{Column 2}}$ x Column 7.

3-1,52
Form NR-2
(April 1946)

UPLAND GAME BIRDS

Refuge **Upper Mississippi Refuge** Months of **September** to **December**, 19 **71**

(1) Species	(2) Density	(3) Young Produced			(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres Per Bird	Number broods observed	Estimated Total	Percentage	Hunting	For Re-stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Ring-necked pheasant	**1,000**					**45**			**189**	
Ruffed grouse	**5,288**					**40**			**345**	
Bob-white quail	**5,288**					**40**			**135**	
Gray partridge	**5,288**					**10**			**30**	
Wild turkey	**5,000**					**0**			**4**	

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- 53
Form NR-3
(June 1945)

BIG GAME

Refuge **Upper Mississippi Refuge** Calendar Year **1971**

(1) Species	(2) Density	(3) Young Produced	(4) Removals				(5) Losses			(6) Introductions		(7) Estimated Total Refuge Population		(8) Sex Ratio
Common Name	Cover types, total Acreage of Habitat	Number	Hunting	For Re-stocking	Sold	For Research	Predation	Disease	Winter Loss	Number	Source	At period of Greatest use	As of Dec. 31	
White-tailed deer	**Bottomland hardwoods and adjacent marshes**	**235**	**150**				**15**	**3**	**30**			**765**	**450**	

Remarks:

Reported by _____

INSTRUCTIONS

Form NR-3 - BIG GAME

(1) SPECIES: Use correct common name; i.e., Mule deer, black-tailed deer, white-tailed deer. It is unnecessary to indicate sub-species such as northern or Louisiana white-tailed deer.

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

(3) YOUNG PRODUCED: Estimated total number of young produced on refuge.

(4) REMOVALS: Indicate total number in each category removed during the year.

(5) LOSSES: On the basis of known records or reliable estimates indicate total losses in each category during the year.

(6) INTRODUCTIONS: Indicate the number and refuge or agency from which stock was secured.

(7) TOTAL REFUGE POPULATION: Give the estimated population of <u>each species</u> on the refuge at period of its greatest abundance and also as of Dec. 31.

(8) SEX RATIO: Indicate the percentage of males and females of each species as determined from field observations or through removals.

17060

3-17
Form [illegible]-5

DISEASE

Refuge Upper Mississippi Refuge Year 19 71

Botulism NONE

Period of outbreak _____

Period of heaviest losses _____

Losses:

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

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

Areas affected (location and approximate acreage) _____

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

Condition of vegetation and invertebrate life _____

Remarks _____

Lead Poisoning or other Disease NONE

Kind of disease _____

Species affected _____

Number Affected

Species	Actual Count	Estimated

Number Recovered _____

Number lost _____

Source of infection _____

Water conditions _____

Food conditions _____

Remarks _____

INT.-DUP., D.C.- 53818-59

3-175
Form NR-7
(Rev. June 1960)

(1)

NONAGRICULTURAL COLLECTIONS, RECEIPTS, AND PLANTINGS

Refuge Upper Mississippi Refuge Year 19 71

	Collections and Receipts (Seeds, rootstocks, trees, shrubs)						Plantings (Marsh - Aquatic - Upland)						
Species	Amount (Lbs., bus., etc.)	(2) C or R	Date	Method or Source	Cost	(3) Total Amount on Hand	Location of Area Planted	Rate of Seeding or Planting	Amount Planted (Acres or Yards of Shoreline)	Amount and Nature of Propagules	Date	Survival	Cause of Loss
German Millet							Spring Lake Marsh	20 lbs/ac	12 ac.		6/25-7/12	4 ac.	Washed out by heavy rains

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

Total acreage planted:
Marsh and aquatic 12
Hedgerows, cover patches
Food strips, food patches
Forest plantings

Remarks:

76148

3-175[8]
Form -8
(Rev. Jan. 1956)

Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge Upper Mississippi Refuge County Grant State Wisconsin

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure, Cover and Water-fowl Browsing Crops Type and Kind	Total Acreage
			Harvested		Unharvested				
	Acres	Bu./Tons	Acres	Bu./ Tons	Acres	Bu. /Tons			
Corn	27½	1,650 bu.			7½	450 bu.		alfalfa (cover)	8
alfalfa					8		43		
								Fallow Ag. Land.	0

No. of Permittees: Agricultural Operations 3 Haying Operations 0 Grazing Operations 0

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	Grazing	Number Animals	AUM'S	Cash Revenue	ACREAGE
				1. Cattle				
				2. Other				
				1. Total Refuge Acreage Under Cultivation				
Hay - Wild				2. Acreage Cultivated as Service Operation				

DIRECTIONS FOR PREPARING FORM NR--8'
CULTIVATED CROPS - HAYING - GRAZING

Report Form NR-8 should be prepared on a calendar-year basis for all crops which were planted during the calendar year and for haying and grazing operations carried on during the same period.

Separate reports shall be furnished for Refuge lands in each county when a refuge is located in more than one county or State.

Cultivated Crops Grown - List all crops planted, grown and harvested on the refuge during the reporting period regardless of purpose. Crops in kind which have been planted by more than one permittee or this Service shall be combined for reporting purposes.

Permittee's Share - Only thenumber of acres utilized by the permittee for his own benefit should be shown under the Acres column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the Bushels Harvested column. Report all crops harvested in bushels or fractions thereof except such crops as silage, watermelons, cotton, tobacco, and hay, which should be reported in tons or fractions thereof.

Government's Share or Return - Harvested Show the acreage and number of bushels harvested for the Government of crops produced by permittees or refuge personnel. Unharvested Show the exact acreage and the estimated number of bushels of grain available for wildlife. If grazing is made available to waterfowl through the planting of grain, cover, green manure, grazing or hay crops, estimate the tonnage of green food produced or utilized and report under Bushels Unharvesed column.

Total Acreage Planted - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops Specify the acreage kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

Hay - Improved - List separately the kinds of improved hay grown. Annual plantings should also be reported under Cultivated Crops, and perennial hay should be listed in the same manner at time of planting

Total Refuge Acreage Under Cultivation Report total land area devoted to agricultural purposes during the year.

3-1758
Form NR-6
(Rev. Jan. 1956)

Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge Upper Mississippi, Guttenberg District County Clayton County State Iowa

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure, Cover and Water-fowl Browsing Crops Type and Kind	Total Acreage
			Harvested		Unharvested				
	Acres	Bu./Tons	Acres	Bu./Tons	Acres	Bu./Tons			
Corn	102	7220	10	650	14	980	126		126
								Fallow Ag. Land	40

No. of Permittees: Agricultural Operations 5 Haying Operations 0 Grazing Operations 0

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING	Number Animals	AUM'S	Cash Revenue	ACREAGE
				1. Cattle				
				2. Other				
				1. Total Refuge Acreage Under Cultivation				126
Hay - Wild				2. Acreage Cultivated as Service Operation				

DIRECTIONS FOR PREPARING FORM NR-8
CULTIVATED CROPS - HAYING - GRAZING

Report Form NR-8 should be prepared on a calendar-year basis for all crops which were planted during the calendar year and for haying and grazing operations carried on during the same period.

Separate reports shall be furnished for Refuge lands in each county when a refuge is located in more than one county or State.

Cultivated Crops Grown - List all crops planted, grown and harvested on the refuge during the reporting period regardless of purpose. Crops in kind which have been planted by more than one permittee or this Service shall be combined for reporting purposes.

Permittee's Share - Only the number of acres utilized by the permittee for his own benefit should be shown under the Acres column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the Bushels Harvested column. Report all crops harvested in bushels or fractions thereof except such crops as silage, watermelons, cotton, tobacco, and hay, which should be reported in tons or fractions thereof.

Government's Share or Return - Harvested - Show the acreage and number of bushels harvested for the Government of crops produced by permittees or refuge personnel. Unharvested - Show the exact acreage and the estimated number of bushels of grain available for wildlife. If grazing is made available to waterfowl through the planting of grain, cover, green manure, grazing or hay crops, estimate the tonnage of green food produced or utilized and report under Bushels Unharvested column.

Total Acreage Planted - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops - Specify the acreage, kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

Hay - Improved - List separately the kinds of improved hay grown. Annual plantings should also be reported under Cultivated Crops, and perennial hay should be listed in the same manner at time of planting.

Total Refuge Acreage Under Cultivation - Report total land area devoted to agricultural purposes during the year.

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

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

Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge Upper Mississippi Refuge County Jackson State Iowa

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure, Cover and Water-fowl Browsing Crops Type and Kind	Total Acreage
			Harvested		Unharvested				
	Acres	Bu./Tons	Acres	Bu./ Tons	Acres	Bu. /Tons			
Corn	8.4	294 bu.			4.2	147 bu.	12.6	Rye	79
								Fallow Ag. Land.	

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

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	Grazing	Number Animals	AUM'S	Cash Revenue	ACREAGE
				1. Cattle				
				2. Other				
				1. Total Refuge Acreage Under Cultivation				91.6
Hay - Wild	0			2. Acreage Cultivated as Service Operation				0

DIRECTIONS FOR PREPARING FORM NR--8'
CULTIVATED CROPS - HAYING - GRAZING

Report Form NR-8 should be prepared on a calendar-year basis for all crops which were planted during the calendar year and for haying and grazing operations carried on during the same period.

Separate reports shall be furnished for Refuge lands in each county when a refuge is located in more than one county or State.

Cultivated Crops Grown - List all crops planted, grown and harvested on the refuge during the reporting period regardless of purpose. Crops in kind which have been planted by more than one permittee or this Service shall be combined for reporting purposes.

Permittee's Share - Only thenumber of acres utilized by the permittee for his own benefit should be shown under the Acres column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the Bushels Harvested column. Report all crops harvested in bushels or fractions thereof except such crops as silage, watermelons, cotton, tobacco, and hay, which should be reported in tons or fractions thereof.

Government's Share or Return - Harvested Show the acreage and number of bushels harvested for the Government of crops produced by permittees or refuge personnel. Unharvested Show the exact acreage and the estimated number of bushels of grain available for wildlife. If grazing is made available to waterfowl through the planting of grain, cover, green manure, grazing or hay crops, estimate the tonnage of green food produced or utilized and report under Bushels Unharvesed column.

Total Acreage Planted - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops Specify the acreage kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

Hay - Improved - List separately the kinds of improved hay grown. Annual plantings should also be reported under Cultivated Crops, and perennial hay should be listed in the same manner at time of planting

Total Refuge Acreage Under Cultivation Report total land area devoted to agricultural purposes during the year.

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

Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge Upper Mississippi Refuge County Carroll State Illinois

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure, Cover and Water-fowl Browsing Crops Type and Kind	Total Acreage
			Harvested		Unharvested				
	Acres	Bu./Tons	Acres	Bu./ Tons	Acres	Bu. /Tons			
Corn	45.5	1,508 bu.			23	660 bu.	68.5	Rye	10
Soybeans	33	660 "					33		
Oats	16	320 "					16		
Potter's cash rental above included:									
	Corn	- 16.5 acres							
	Soybeans	- 23 "							
	Rye	- 10 "							
	Oats	- 16 "							
								Fallow Ag. Land.	

No. of Permittees: Agricultural Operations 3 Haying Operations 2 Grazing Operations 1

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	Grazing	Number Animals	AUM'S	Cash Revenue	ACREAGE
Alfalfa	8	4.	0	1. Cattle	10	Potter's cash rental		
"	0	14.6	Potter's cash rental	2. Other	0			
				1. Total Refuge Acreage Under Cultivation				146.1
Hay - Wild	0			2. Acreage Cultivated as Service Operation				0

DIRECTIONS FOR PREPARING FORM NR--8'
CULTIVATED CROPS - HAYING - GRAZING

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Total Acreage Planted - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops Specify the acreage kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

Hay - Improved - List separately the kinds of improved hay grown. Annual plantings should also be reported under Cultivated Crops, and perennial hay should be listed in the same manner at time of planting

Total Refuge Acreage Under Cultivation Report total land area devoted to agricultural purposes during the year.

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

Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge **Upper Mississippi Refuge** County **Clinton** State **Iowa**

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure, Cover and Water-fowl Browsing Crops Type and Kind	Total Acreage
			Harvested		Unharvested				
	Acres	Bu./Tons	Acres	Bu./ Tons	Acres	Bu. /Tons			
Corn	**12**	**1,200 bu.**	**4**	**400 bu.**			**16**		
								Fallow Ag. Land.	**1**

No. of Permittees: Agricultural Operations **1** Haying Operations **0** Grazing Operations **0**

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	Grazing	Number Animals	AUM'S	Cash Revenue	ACREAGE
None				1. Cattle				
				2. Other				
				1. Total Refuge Acreage Under Cultivation				**17**
Hay - Wild				2. Acreage Cultivated as Service Operation				**0**

DIRECTIONS FOR PREPARING FORM NR--8'
CULTIVATED CROPS - HAYING - GRAZING

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Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge Upper Mississippi Refuge County Buffalo State Wisconsin

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure, Cover and Water-fowl Browsing Crops Type and Kind	Total Acreage
			Harvested		Unharvested				
	Acres	Bu./Tons	Acres	Bu./ Tons	Acres	Bu. /Tons			
								Fallow Ag. Land.	

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

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	Grazing	Number Animals	AUM'S	Cash Revenue	ACREAGE
				1. Cattle	60	27½	27.50	to Corps of Eng.
				2. Other				
				1. Total Refuge Acreage Under Cultivation				
Hay - Wild				2. Acreage Cultivated as Service Operation				

DIRECTIONS FOR PREPARING FORM NR--8'
CULTIVATED CROPS - HAYING - GRAZING

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Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge **Upper Mississippi Refuge** County **Houston** State **Minnesota**

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure, Cover and Water-fowl Browsing Crops Type and Kind	Total Acreage
			Harvested		Unharvested				
	Acres	Bu./Tons	Acres	Bu./ Tons	Acres	Bu. /Tons			
								Fallow Ag. Land.	

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

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	Grazing	Number Animals	AUM'S	Cash Revenue	ACREAGE
				1. Cattle	30	90	$ 84.00 to Corps of Engineers 21.00 to Bureau	
				2. Other				
				1. Total Refuge Acreage Under Cultivation				
Hay - Wild				2. Acreage Cultivated as Service Operation				

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3-1758
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Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge Upper Mississippi Refuge County Vernon State Wisconsin

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure, Cover and Water-fowl Browsing Crops Type and Kind	Total Acreage
			Harvested		Unharvested				
	Acres	Bu./Tons	Acres	Bu./ Tons	Acres	Bu. /Tons			
								Fallow Ag. Land.	

No. of Permittees: Agricultural Operations _____ Haying Operations _____ Grazing Operations 3

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	Grazing	Number Animals	AUM'S	Cash Revenue	ACREAGE
				1. Cattle	82	257½	$257.50 to	Corps of Engineers
				2. Other				
				1. Total Refuge Acreage Under Cultivation				
Hay - Wild				2. Acreage Cultivated as Service Operation				

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CULTIVATED CROPS - HAYING - GRAZING

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

Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge Upper Mississippi Refuge County Wabasha State Minnesota

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure, Cover and Water-fowl Browsing Crops Type and Kind	Total Acreage
			Harvested		Unharvested				
	Acres	Bu./Tons	Acres	Bu./ Tons	Acres	Bu. /Tons			
								Fallow Ag. Land.	

No. of Permittees: Agricultural Operations _____ Haying Operations _____ Grazing Operations 1

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	Grazing	Number Animals	AUM'S	Cash Revenue	ACREAGE
				1. Cattle	40	20	$ 20.00 to Corps of Engineers	
				2. Other				
				1. Total Refuge Acreage Under Cultivation				
Hay - Wild				2. Acreage Cultivated as Service Operation				

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3-1570
NR-8a
(4/54)

REFUGE GRAIN REPORT

Refuge Upper Mississippi Refuge Months of January through December, 1971

(1) Variety*	(2) On Hand Beginning of Period	(3) Received During Period	(4) Total	(5) Grain Disposed of				(6) On Hand End of Period	(7) Proposed or Suitable Use*		
				Transferred	Seeded	Fed	Total		Seed	Feed	Surplus
Ear corn	110	0	110	0	0	80	80	30		30	
Proso millet	½		½			½	½	0			
German millet	110		110	10	40	20	70	40	30	10	
Shelled corn	930	400	1,340			320	320	1,020		1,020	

(8) Indicate shipping or collection points

(9) Grain is stored at District grain bins

(10) Remarks Corn to be used for wood duck banding

*See instructions on back.

REFUGE GRAIN REPORT

This report should cover all grain on hand, received, or disposed of, during the period covered by this narrative report.

Report all grain in bushels. For the purpose of this report the following approximate weights of grain shall be considered equivalent to a bushel: Corn (shelled)—55 lb., corn (ear)—70 lb., wheat—60 lb., barley—50 lb., rye—55 lb., oats—30 lb., soy beans—60 lb., millet—50 lb., cowpeas—60 lb., and mixed—50 lb. In computing volume of granaries, multiply the cubic contents (cu. ft.) by 0.8 bushels.

(1) List each type of grain separately and specifically, as flint corn, yellow dent corn, square deal hybrid corn, garnet wheat, red May wheat, durum wheat, spring wheat, proso millet, combine milo, new era cowpeas, mikado soy beans, etc. Mere listing as corn, wheat, and soybeans will not suffice, as specific details are necessary in considering transfer of seed supplies to other refuges. Include only domestic grains; aquatic and other seeds will be listed on NR–9.

(3) Report all grain received during period from all sources, such as transfer, share cropping, or harvest from food patches.

(4) A total of columns 2 and 3.

(6) Column 4 less column 5.

(7) This is a proposed break-down by varieties of grain listed in column 6. Indicate if grain is suitable for seeding new crops.

(8) Nearest railroad station for shipping and receiving.

(9) Where stored on refuge: "Headquarters granary," etc.

(10) Indicate here the source of grain shipped in, destination of grain transferred, data on condition of grain, unusual uses proposed.

INT.-DEP. SEC., WASH., D.C. 17065

3-1761
Form -11

TIMBER REMOVAL

Refuge Upper Mississippi Refuge Year 19~~4~~71

Permittee	Permit No.	Unit or Location	Acreage	No. of Units Expressed in B. F., ties, etc.	Rate of Charge	Total Income	Reservations and/or Diameter Limits	Species Cut
Herbert Bailey Lansing, Iowa	512	Pool 9		Dead & down firewood		$ 5.00		

Total acreage cut over..... Total income.....

No. of units removed B. F..... Method of slash disposal.....
Cords.....
Ties.....
.....

(NR-12)
(9/63)

Bureau of Sport Fisheries and Wildlife

ANNUAL REPORT OF PERSTICIDE APPLICATION

Refuge: Upper Mississippi

Proposal Number:

Reporting Year: 1971

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

Date(s) of Application	List of Target Pest(s)	Location of Area Treated	Total Acres Treated	Chemical(s) Used	Total Amount of Chemical Applied	Application Rate	Carrier and Rate	Method of Application
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
5/71	Giant foxtail, pigweed, sedge	Clayton County Turkey River Bottoms	34	Atrazine 80%	51 pounds	1½ lbs/acre	Water 10gal/ac	Boom sprayer
6/71	Giant foxtail, pigweed, sedge	Clayton County Turkey River Bottoms	4	2-4-D 62.5%	4 pints	Pint/acre	Water 10gal/ac	Boom sprayer
6/71	Giant foxtail, pigweed, sedge	Clayton County North Buena Vista	4	2-4-D 55.9%	4 pints	Pint/acre	Water 20gal/ac	Boom sprayer
6/71	Giant foxtail, pigweed, sedge	Clayton County Turkey River Bottoms	56	Atrazine 80%	112 pounds	2 lbs/acre	Water 10gal/ac	Boom sprayer
6/71	Giant foxtail, pigweed, sedge	Clayton County Turkey River Bottoms	28	2-4-D 49.6%	28 pints	Pint/acre	Water 25gal/ac	Band Sprayer 12" wide

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

The above applications were effective in controllong the target pests. Production was good except in low areas where water stood early in the season.

35500

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

Bureau of Sport Fisheries and Wildlife

ANNUAL REPORT OF PERSTICIDE APPLICATION

Refuge: Upper [illegible]s.

Proposal Number:

Reporting Year: 1971

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

Date(s) of Application	List of Target Pest(s)	Location of Area Treated	Total Acres Treated	Chemical(s) Used	Total Amount of Chemical Applied	Application Rate	Carrier and Rate	Method of Application
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
corn 4"	grasses & weeds	AU 11-1 -	8	Atrazine	12 lbs.	20 gal./ac.	water	boomsprayer
1 week before planting	grasses & weeds	AU 11-9	22	Lasso	44 qts.	20 gal./ac.	water	boom-sprayer
corn 4"	grasses & weeds	AU 11-12	5	Atrazine	7½ lbs.	20 gal./ac.	water	boom-sprayer
7/7/71	silver maple, elm dogwood, ash, willow, box elder locust	Spring Lake Levee, Carrol Co. Illinois	2	Isopropyl & butyl esters of 2,4-D	6.4 lbs.	3.2 lbs. active ingred. per acre	water 2 gal/ac.	hand spray

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

The results were fair to good in controlling grasses and weeds in the croplands.

Spot applications were used on brush along top and burm of Spring Lake Dike. Within three days the leaves started turning brown, and a good kill noted after a week's time.

WINONA DISTRICT

NARRATIVE REPORT

UPPER MISSISSIPPI RIVER NATIONAL WILDLIFE REFUGE

WINONA DISTRICT

1971

United States Department of the Interior

Fish and Wildlife Service

Bureau of Sport Fisheries and Wildlife

C O N T E N T S

I. GENERAL

A. Weather Conditions

MONTH	Precipitation Total	Precipitation Normal	Precipitation Snowfall	Temperature Max.	Temperature Min.	Temperature Mean Av.	Normal Mean Av.
January	3.72	1.17	32.20 in.	40	-19	4.7	17.3
February	3.33	.97	29.87 in.	49	-27	16.7	18.2
March	1.11	1.62	5.99 in.	71	6	27.6	32.2
April	1.96	2.31		80	17	48.5	47.7
May	6.06	4.68		82	30	54.3	56.5
June	3.44	4.70		96	49	73.1	68.8
July	4.50	3.70		95	47	69.4	75.4
August	.54	3.60		95	46	68.7	69.5
September	5.03	1.55		93	35	62.6	62.5
October	2.78	2.49		87	29	65.5	46.3
November	2.60	1.61	2.00 in.	60	10	35.8	35.1
December	1.77	1.11	11.09	41	-3	22.7	21.3
Annual Totals	36.84	29.51	81.15	74.1°	18.3°	35.8	45.9

In the overall view, 1971 weather probably was most significant for its abnormal amount of precipitation, the second consecutive year that moisture had been substantially above normal. Total precipitation for the year was 36.84 inches, compared with a normal figure of 29.51. Eight months produced precipitation above normal with its greatest deviations coming in February and September when monthly totals edged close to four times normal. Temperatures reached extremes of a high of 96 recorded in July and a low of 27 below zero in February. The morning of January 4 found the areas record snowfall for a 24 hour period, on the ground. A blizzard left 15.50 inches of snow. By the end of the month the total reached 32 inches. February pitched in to make it a hard winter, by sending temperatures well below zero on many occassions and dumping about another 30 inches of snow on the area. Thoughts of a spring flood crossed everyones mind. But, because there had been very little ground frost, most of the snow melt was consumed by the soil. Flood stage for the river was reached in the Winona Area on April 16. The river reached its crest on the following day at 14.34 feet or less than 1½ ft above the flood stage. June was the hot month of the year. July was relatively cool even though very high temperatures were reached during the month. Decembers temperatures stayed stable throughout the month. Temperatures weren't high in the day, but were not ver low at night. About 12 inches of snow prepared the area for 1972.

B. Habitat Conditions
1. Water

POOL LEVELS

Pool No. 5 at Control Point # 5, Below L/D # 4, Alma, Wi Normal: 667.00

MONTH	HIGHEST LEVEL	LOWEST LEVEL	AVERAGE LEVEL	DATES OF HIGH LEVEL	DATES OF LOW LEVEL
January	660.31	659.92	660.11	1/4/71	1/7/71
February	660.20	659.75	659.98	2/28/71	2/3/71
March	661.90	659.87	660.89	3/31/71	3/12/71
April	666.24	661.97	664.10	4/17/71	4/30/71
May	661.95	660.20	661.07	5/01/71	5/19/71
June	661.64	660.13	660.88	6/01/71	6/30/71
July	660.41	659.80	660.11	7/14/71	7/31/71
August	660.15	659.60	659.87	8/14/71	8/31/71
September	660.19	659.65	659.92	9/27/71	9/21/71
October	660.23	659.79	660.01	10/04/71	10/12/71
November	661.75	660.06	660.90	11/09/71	11/01/71
December	661.07	660.16	660.61	12/01/71	12/18/71

The heavy snowfall during the early winter provided good insulation for the ground beneath. This insulating coat kept the deep frost out of the soil. During the spring thaw, much of the runoff was soaked up. The pool levels remained fairly constant, but much below the normal pool level for the year. The mid-April floods brought the pools to their highest levels of the year. Aquatic plants had a fairly good growing year due to the evenly regulated pool levels. Each year many of the aquatic plants are removed from the pools when the ice flow moves out. Siltation also causes some reduction in the number of plants available for seed production needed for waterfowl maintenance. Seed production of the aquatics was good this year, and provided needed food for the many migrating waterfowl that passed through the district. Deer browse was excellent throughout the district and provided the animals with nourishment during the deep snow and cold winter. Upland crop and cover plants received plenty of moisture throughout the growing season. Yields were excellent and exceeded a very good harvest last year. Bottomland nut trees produced an average crop of acorns and hickory nuts for the squirrel populations. This years yield was below that of last years.

II. WILDLIFE

A. Migratory Birds

1. Waterfowl

DUCKS: There were less than 50 ducks over-wintering on the refuge district in 1971. Only a few Mallards, Black Ducks, and Goldeneye Ducks were on hand for the first seven weeks of the year. The first spring arrivals were small flights of Mallards, Goldeneye, and Ringneck on the week ending March 27th. The major migration, with most species represented, took place during the first and second weeks of April. This major movement was within a few days of the major movements of a year ago. Lesser Scaup were the most numerous during the period, totaling a little over 41,000 birds and accounting for about 27% of the duck use days for the period. Mallard numbers were up and their use day figures were up about 5%. Canvasback use day percentage was down this year from last about 10%. The figure this year represents a normal percentage use for this period. All other birds demonstrated normal numbers and useage for the period, although the numbers are down from high numbers of 1970. Readhead numbers showed the biggest drop in this period, with a drop of 59%. With this large drop, the normal migration numbers for this species was reached. Canvasback, Scaup, and Green-winged Teal also exhibited a drop in total numbers visiting the district. Total overall duck use days for this spring period decreased about 25%, but enough birds passed through the area that a good fall hunt could almost be predicted. There was very little high water, and then for only a short period of time, which enabled the local nesting ducks to get off to a good first hatch.

Wood Ducks, Mallards, and Blue-winged Teal are the species most common to the refuge district during the summer period. A weekly census during the period showed an increase in the number of Mallards, Gadwall, and Shoveller using the area. A decrease in Blacks, Blue-winged Teal, and Baldpate was sufficient enough to mention. Weekly counts of paired Wood Ducks during the spring and early summer gave sufficient evidence that the breeding population was up from 1970. The overall use days for Woodies was down about 4% for the period, from last year. The same counts also revealed that the Mallard and Green-winged Teal breeding populations were up from last year. The low level of spring floods and a fairly constant pool control in the district presented excellent opportunities for the hens to get off good broods and maintain them in good shape. Brood Counts were up by about 5% for total birds counted. This is accountable for in the fact that there was a higher number of breeding pairs and good food and water conditions. In late July and early August, flight stage class broods of Wood Ducks and Mallards started to show up in the bottomland marshes. This was was also an indication that there had been a successfull hatch in the wooded areas and wooded stream valleys near the refuge. The fall Roost Flight Counts were conducted in mid and late September. These counts showed a slight decrease of 5% in total number of birds seen during the observation period. Peak numbers of birds were observed during the week of August 28. A number of migrant species began to turn up during this period, in late August. With the fall migration beginning about a week to ten days ahead of last year, thoughts turned to the hunting season directly ahead. Peak numbers of Hooded Mergansers was down from 1970, with no observations of this bird being made in July.

The fall period brought on a few slight pool fluctuations. These fluctuations were not very great in most instances, and food and cover was not affected by them. Food was available for the migrating birds, and the ones that stopped first were treated to some good wild celery. The Wood Ducks began to leave earlier than usual this year, with only about 3,500 remaining on the district when the hunting season opened. The two species of teal showed a 20% decrease in numbers as they moved through early. District peak numbers for all species occurred on Oct. 30, when 39,900 birds arrived and used the district. This is about a 50% increase over the peak number using the area a year ago. The peak use date was about three week later than in 1970 . The Canvasback numbers were up by 95% over 1970. Most of this increase occurred when 18,500 Cans stopped during the week of Oct. 30. Wood Duck numbers were down from 1970 during this period, as many left for the south early. Baldpate numbers also exhibited a great decline in numbers for this period. The usual large flights from the north of these birds never materialized this year, and the birds that did stop never stayed more than one or two days befor moving down river where the feeding was better and easier. Numbers of birds remained in the district throughout the hunting season, and hunters had a fair season. Most of the food was depleted by the second week in November and the birds responded by leaving the district. The weather this year was not a strong factor in moving the birds out of the area. By Nov. 27 only a little over 3,00 birds remained, and by the end of the calendar year only a few hundred remained. The migration of Mergansers was about a week later than last year, with large numbers moving in about Dec. 12 this year.

GEESE: Only small numbers of Canadas, Blues, Snows, and White Fronts use the refuge river bottoms as resting areas during the spring and fall migrations. Numbers of these birds showed a marked increase over 1970. Canada Goose Use was up about 35% for the year, and the goose use days was up about 5,000 days over last year. Snow and Blue Goose populations and use days were both up by over 100 % for the year. Peak spring migration took place on April 10 when 741 geese were on the district. Peak fall numbers were reached on November 6 when 935 geese were observed. Many observers believe that the geese using the Weaver Marsh Area of the district are just some of the migrants that are resting up before heading for the Silver Lake Area of Rochester, Minn., to join the large wintering flock there.

SWANS: Spring Whistling Swan use was up considerably from the 1970 report. The first arrivals were 5 birds observed in the Weaver Marsh Area during the week of March 27, about two weeks later than last year. The spring peak was reached on April 10, when 3,790 birds were counted. This is up 96% over last years peak. The last of the spring migrants left the district on May 1. There was no swan use during the summer months. Fall migration brought a return of 9 birds on Oct. 30. Swan numbers grew to a near record high of 1,325 birds on Dec. 11. This was an increase of 335 birds over 1970. On Dec. 25, there were still 10 birds using the district. Complete freezup of the marsh area makes it impossible for the birds to stay any longer, since food becomes inaccessable. Refuge personnel again observed a number of brightly collared swans. Observation was made at such a distance to make positive reading of the collars impossible. Information was turned over to Dr. Sladen of Johns Hopkins University.

COOTS, RAILS, AND GALLINULES:

COOTS: Coot use continues to be high on the refuge district during the ice free months. Although, this year there was a drop in number of birds and use days. Spring Coot use was down about 20% and fall Coot use was down about 55%. In 1971 the total Coot use days was close to 1,500,000. Most of this use came during the two migration periods. Strict law enforcement kept hunters from making wanton waste of the birds. A number of the hunters contacted, preferred Coot to ducks.

RAILS: Sora Rails are common in the river bottom marshes, but are seldom observed by the general public. They can be readily heard on any clear morning or quiet evening. The population of this bird is in question, but it is estimated that around 200 rails were on the district at the peak. This number is about stable from the report of a year ago. King Rails and Virginia Rails have been recorded on the district in some of the previous years, but this year none were observed. Their status on the district is uncertain, but assumed as transient.

GALLINULES: Gallinules have been listed as uncommon on the district for a number of years, but the last few years have shown a number of the birds turning up. During 1971 it was not uncommon to see this bird in the Big Lake area and the Delta Fish and Fur Farm. Peak population was 45 birds with a total of 7,225 Gallinule use days for the year.

2. OTHER WATER BIRDS:

EGRETS: American Egrets first arrived on the district in the spring when 5 birds were observed on April 3. The peak local population was reached on June 26, when 475 birds were recorded. The fall migration added to the birds numbers when an additional 300 birds were added to the peak on August 7. Nesting occurrs in three rookeries on the district, with two of the areas having the majority of the birds. The rookery in Pool 5A near the Lock and Dam is the largest with about 225 nesting pairs in the area. No Snowy Egrets were reported this year. A number of sightings of the Cattle Egret were made this year by refuge personnel and other local bird authorities.

HERONS AND BITTERNS: The district provided much good habitat for the Great Blue Heron, and the birds again were abundant. One hundred and twenty nests were counted in the three local rookeries. The hatch was good this year, but very high winds during the early rearing period caused many deaths as the birds fell from the nests. Peak summer populations reached 575 birds and an additional 225 birds on August 21, pushed the number on the district to 800 during the migration period. Only three birds remained on the district at the close of the year, and these were around fast moving sloughs. This year provided many sightings of the Black Crowned Night Heron with as many as twenty five recorded during the first few weeks of June. Sightings of the Yellow Crowned Night Heron were limited to a few isolated sightings. Numerous sightings of the American Bittern were made this year around the district, with an estimated peak of 50 birds. Least Bitterns were also picked up in limited numbers as routine inspections of the district are made. It is hoped that the Bitterns in this area will recover from a loss of numbers and return to high populations.

GREBES: The first Pied-billed Grebes were observed on the district during the week of March 20. Large groups of grebes were observed to be feeding and swimming together. This was observed last year also, with the rafts being much smaller this year. Only 10 to 15 birds were grouped together. On October 16th there were 1,500 grebes using the district. This figure is quite high compared to last years figure of 250 peak. Estimated production of grebes on the district was only about 50. No Horned Grebes were found with the Pied-billed Grebes, but 10 were noted on November 6. Eared Grebes were seen frequently this year, with a peak number of 90 recorded on April 24 during the spring migration.

CORMORANTS: Double Crested Cormorants are frequently seen during the early summer period on the Delta Fish and Fur Farm, but no nest can be found in the area. Young birds are noted in the group of 40 birds that are usually found there. On May 15, 175 birds were reported on the area, with most of these birds found on the Delta F&FF and at Buffalo City. Five birds were observed during the fall migration and were observed on October 23.

PELICANS: The week ending May 15 found 2 pelicans on the district. The peak population was reached the next week when 8 White Pelicans were noted at Weaver Marsh. Only two birds remained on the following week. This years number is down 5 birds from last years figures.

GULLS AND TERNS: Ring-billed and Herring Gulls are common on the refuge throughout the ice free months. Many stay right up to the final freezup of the main channel. A spring peak of 3,000 Ring-bills on May 15 and 900 Herrings on May 22 was recorded this year. Very few gulls remain on the area during the summer months. The fall migration brought 1,500 Ring-bills on Oct. 30, and 750 Herrings on November 6. Five Franklin Gulls were noted on April 11. This number rose to 100 birds during the early fall, September 25. Ten Caspian Terns were recorded on September 18. Common and Black terns are quite easily seen on the district during the summer months. A peak of 550 birds was reached on June 19 and August 21. Common tern numbers were down by 25% from last years numbers.

3. SHOREBIRDS: About 25 species of shorebirds migrate through the refuge, with only three remaining to nest on the refuge. The Killdeer, the Spotted Sandpiper, and the Pectorial Sandpiper remain here to nest. July 31 was the date that 400 Killdeer were recorded. Months of May and September provided the highlights of the shorebird migration. May 24 saw a little over 200 birds on the area, and September saw the fall migration of 500 come through on the 25th. Again, this year a number of unusual sightings of the shorebirds was observed. The Black-bellied Plover, Bairds Sandpiper, and Red-backed Sandpiper were seen during the first week in May.

4. MOURNING DOVES: Dove numbers reached 600 during the middle of July. This number includes about 325 young hatched on the refuge. The birds migrate and reach a number around 750 during the month of September. The Doves winter in small flocks around some open water. There are very few birds on the area during the winter months except around the spring seeps along the dams.

1965
FM-9A

Refuge: Winona District
Period: **Calendar Year** 1971

B. Upland Game Birds

SPECIES	POPULATION JAN. 1	YOUNG PRODUCED	NUMBER STOCKED	GREATEST NO. PRESENT	TAKE	LOSS	POPULATION DEC. 31
Ring-necked Pheasant	95	35	40	175	25	50	100
Ruffed grouse	125	50		210	40	35	135
Bob-white quail	40	10		60		15	45
Gray partridge							
Wild turkey							

The Trempealeau County Sportsmen Clubs received 5,200 day old pheasant chicks and released 4,721 adult birds. A total loss of only 479 birds during the period. Forty of these pen raised birds escaped onto the Trempealeau Refuge from the rearing pens. Only a couple of coveys of the Bob-white Quail were observed during the year. The small population of the local quail seems to be about stable. Ruffed Grouse numbers still seem to be on a gradual increase around the district. Grouse can be readily observed eating buds from Highbush Cranberry bushes and other berry producing shrubs around the Trempealeau Refuge.

C. Big Game Animals (White-tailed deer)

	POPULATION JAN. 1	YOUNG PRODUCED	GREATEST NO. PRESENT	HUNTER TAKE	LOSSES	POPULATION DEC. 31
White-Tailed Deer	60	80	155	35	13	85

The deer populations show a wide fluctuation in the numbers that frequent the refuge. A deep snow fall in January made it necessary to undertake a small feeding program for the deer herd at Trempealeau. The numbers climbed from the usual local herd of 60, to over 100 during the feeding period. Many of these deer moving about two miles from the Perrot State Park. The Spring and Summer periods saw many fawns running around the refuge. Most births on the area, resulted in twins. A number of single births were noted and two sets of triplets were also recorded. The refuge provided the local hunters with many hours of deer hunting during the fall. About 10 deer were removed from the Trempealeau herd by hunters utilizing private lands across the Trempealeau River adjacent to the refuge. Most of the deer hunting around the Trempealeau Refuge is bow hunting. The district bottomlands were well hunted on the Wisconsin side and an estimated 25 deer were removed from this area. Minnesota had not removed many deer this year as there was no open season for rifle or shotgun in the area, and only a short bow season was open. A mild December with little snowfall, allowed the resident deer to browse the open fields in the area, after dark, and pick up much of the local farmers unretrievable corn.

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Refuge: Winona District
Period: Calendar Year 1971

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

SPECIES	POPULATION JAN. 1	YOUNG PRODUCED	GREATEST NO. PRESENT	TAKE	CON-TROL	LOSS	POPULATION DEC. 31
Muskrat	21,950	45,500	60,500	31,900		11,900	23,600
Mink	30	35	65	10		10	45
Beaver	790	300	1,090	350		40	700
Otter	28	5	33	0		4	29
Raccoon	683	500	1.183	300		93	790
Red Fox	295	230	525	275		25	225
Gray Fox	0	0	0	0		0	0
Skunk	110	60	170	15		35	120
Cotton-tail Rabbit	160	120	280	30		70	180
Opossum	65	40	105	10		20	75
Gray & Fox Squirrels	1,950	1,000	2,950	300		400	2,250
Woodchuck	15	15	30	2		5	23
Badger	3	2	5	0		1	4

Muskrat populations were slightly down this year after a few years of gradual increase. The good population of rats caused an increase in the number of trappers to take out permits. Prices were also up this year, with some trappers getting as much as $1.50 per skin. The average price was around $1.29/skin. Good weather and ice conditions allowed the trappers to work until late in December. The projected fur take from the reports now in, indicate that the take will be up by nearly 5,000 skins. The Beaver season held in 1971 was the first in three years. The population was good and the harvest was about as expected. Another season has been set for 1972. Otter and Mink numbers remain very low and show no significant signs of increasing. Raccoon & Squirrel populations increased due to good food conditions in the bottomlands. Fox pelts were at a premium, bringing nearly $10.00 apiece. Pressure on these animals increased as the price of furs for the market increased.

E. HAWKS, EAGLES, OWLS, CROWS, etc.;

HAWKS: No unusual observations were made during the year. The local Buteo population demonstrated a slight trend upward this year. Red-tailed and Rough Legged Hawks seemed to show the biggest increase in numbers. Red-tailed numbers peaked at 150 during the week of July 31. Rough Legged Hawks peaked in numbers on December 25, at nine. Sparrow Hawks were noted to plentyful this year. Observations on this bird could be made at almost any time, with peak populations being reached around mid-summer.

EAGLES: Only 6 eagles spent the winter on the district in 1971. The mid-winter eagle count showed only 7 eagles on January 9. The numbers began to rise as the eagles made their way back north to the nesting grounds, and on March 20 41 adults and 35 immatures were spotted. From this peak, the numbers began to drop until the last birds departed on April 24. There were no eagles on the area during the summer. The first fall birds arrived on Sept. 9. This years warm weather and open water allowed the birds to linger in the area, with 51 birds being recorded on the district on 1/1/72.

OWLS: The exact status of owl populations in the district is not known. However, there is no evidence to suggest that there has been any significant change in numbers this year as compared to previous years. Populations remain about 200 birds during most of the year. During the spring nesting season the numbers rise by about 50. One Snowy Owl was observed by refuge personnel in the city of Winona. Only one other report of the Snowy was received and that from a bird watcher in Wabasha. The most common owls on the district are the Barred Owl, Great Horned, Saw-whet, and Screech Owl.

CROWS: A good number of crows overwinter in the river bottom lands. Nearly 650 were recorded during this winter. During the summer months, the numbers reach well over 1,000 birds. Many of these birds move out of the area as the extreme cold weather and snow hit, but many hang around and scavenge dead animals for food. The crows create no particular problem on the refuge and in fact help keep sandbars and others clear of decaying matter. Many Crows are found on the ice where trappers skin their harvest and leave the carcass.

VULTURES: During the summer months along the river bluff, you may see the soaring vulture looking for a comfortable place to perch and dine. Turkey Vultures are not vary numerous, but remain around all summer long. The peak number observed on the area this year was 15, noted on June 26.

F. OTHER BIRDS: The Osprey is not an abundant bird anywhere in the U.S., but throughout the year small numbers of the bird were recorded in the district. The first sightings were on March 27 with a peak population of 4 birds being noted on April 10. Irregular sightings were made throughout the summer, with the last sighting on November 6.

A tremendous variety and number of small birds funnel up the river valley during the spring migration. About 65 species are assumed to nest on the district. Winter time is an excellent time to observe the birds that have been moving through the area from the fall migration period. A full bird feeder outside the window during the winter can be most interesting.

G. FISH:

The Mississippi River is so laden with nutrients that all species of fish exhibit good growth and much wanted poundage. The state fish management divisions of the Departments of Natural Resources in both Minnesota and Wisconsin realize that the fish resource is underharvested. They urge the commercial fishing of the river to help remove the surplus of rough fish. The most common fish taken from the river are the Carp, Buffalo, Sucker, Bullhead Catfish, Channel Catfish, and Sheepshead. Exact information regarding types of fish nets used, species harvested, poundage caught, and exact number of commercial fishermen on the area could not be obtained before this report was printed. The fishing aspects of the river are mostly handled by the state departments of fish management. This eliminates much of the work that the refuge would otherwise be handling in addition to its regular duties.

H. REPTILES:

Frequent observations are made on several species which includes the Fox Snake, Milk Snake, Garter Snake, Bull Snake, Timber Rattler, and Eastern Massasauga. The snake is one of our frequent predators in both the Wood Duck houses and the pheasant rearing pens. Some of the predators are killed, while others are moved out of the locality. A few people around Nelson, Wisconsin spend much time in the bottoms catching Rattlers for past time. Both the Snapping Turtle and the Soft Shelled Turtles are present in the river and its backwaters. Other turtles frequently observed on the area are the Blanding's Turtle, Box Turtle, Stinkpot, and the Painted Slider. Plans are being formalized for small radios to be attached to some of the soft shelled population for radio-telemetry movement studies. A number of Tiger Salamanders were observed in the bottoms this year. No reason has been given why so many more animals were seen this year than previous years.

I. DISEASE:

There has been no disease of any kind noted or recorded on the district this year, as it pretains to wildlife.

III. REFUGE DEVELOPMENT AND MAINTENANCE

A. Physical Developments:

The following work accomplishments were made under force account, contract, or with NYC labor. The summer Biological Aids this summer were Janet M. Smith, a senior Wildlife Management student at Colorado State University, and Larry E. Nelson a junior Agronomy student from Arkansas AM&N University. Six NYC, Neighborhood Youth Corps, students were assigned to the district this year. One NYC girl was used as an office secretary and assigned duties related to office work. Five boys were assigned duties at the Trempealeau Refuge, Winona Warehouse, and field assignments on the Winona District. These NYC'S were under the direction and direst supervision of the two Biological Aides.

CONTRACT JOBS:

Richard Schlesser of Centerville, Wisconsin was awarded a contract to clear 45 acres of Oak Wilt infested trees and some Locust Trees on the Trempealeau Refuge. Fifteen acres have been completed as of December 31.

Hengel Brothers Construction Co. of LaCrosse, Wisconsin was awarded a contract to renovate and install a new water line, sewer line, and septic system at the Trempealeau Refuge. New water lines were installed to all buildings and a new submersible water pump installed in the pump house. New septic tanks were placed at the office, Residence, and lodge building, and drain fields were added at each site. A hot water heater was added to the office and a water softener was added to the residence. All but a few minor changes was finished by the end of October. The additions were much needed and welcomed by the district manager.

Bennett and Son of Plainview, Minnesota was given the job of repairing the flood damaged landings along the Nelson Dike, near Nelson, Wisconsin. Rip rap was added to one landing to prevent further flood damage, and heavy rock mixed with road gravel was added to three others to build them up for prevention of flood erosion in the spring.

NYC Projects Completed - June 20 to August 30, 1971.

Replaced and upgraded the districts boundry posting.
Posted all sandbars in Pools 4,5,5A, and 6 for littering.
Posted all closed areas by erecting "closed area" signs at appropriate areas.
Cleaned and straightend up all Trempealeau Refuge buildings.
Helped out at the Winona Warehouse by cleaning up and moving many items.
Conducted lawn maintenance at warehouse and at Trempealeau.
Completed most work involved in raising new flag pole at Trempealeau Refuge.
Brushed out dense boundries at Trempealeau Refuge and on Reick's Lake Boundry.
Brushed out an improved Cannon Net sites for Wood Duck Banding.
Helped to some extent on the Wood Duck Banding Program.
Erected new overlook sign at Alma's Buena Vista Park.
Erected new signs that were made for the district.
Cleared Black Locust Trees from the Pine Plantations on the Trempealeau Refuge.
Straightened out Baldwin's landing ramp mat and filled in washout holes on a number of other landings including Indian and Pontoon Slough Landings.
Conducted other general cleanup and maintenance work on the district as directed.

B. Plantings: None

C. Collections and Receipts:

Grain: No grain was delivered to the Trempealeau Refuge this year. Enough corn was left over from last year that it was deemed unnecessary to deliver this year. About 75 bushel of corn was used on the Winona District as bait for the cannon net sites, and the Wood Duck Banding Program. Another 100 bushel of corn was used to help maintain the local deer herd and help them through the winter. The State of Wisconsin did not provide any corn for the deer this year, as has been done in previous years.

D. Control of Vegetation:

No chemical control was applied on the district this year. Only incidental hand cutting of noxious weed on landings, and brush cutting on boundry lines was under taken this year. No prescribed burning was undertaken this year, because of poor weather conditions on the days that were available for burning. A rotary mower could not be found this year, so no mowing of the locust growths on the prairie could be started. It is believed that non-chemical control of Black Locust trees can be obtained by successive mowings and making the plant use up its root reserves before winter sets it.

E. Planned Burning:

One hundred fifty acres was scheduled for prescribed burning during the year. Most of this acreage was in two large plots. Local weather conditions and the unavailability of the area forester caused cancellation of all plans that were made for the burns. No burning was undertaken this year, and the 150 acres were set up for burning in 1972. Slash piles were also prepared for burning, but a timber sale in another area prevented the forester and district manager from getting around to touching off the fires.

F. Fires:

Only one small fire occurred on the district, and that was a small grass fire on the Trempealeau Refuge. When noticed the fire was to big for the district manager to handle alone, so the Trempealeau Fire Department was called in for assistance. Only about three quarters of an acre were burned over. The fire department took about 25 minutes to put the fire completely out.

IV. RESOURCE MANAGEMENT

A. Grazing:

Three grazing permits were issued in 1971. A total of 100 animals were grazed on refuge lands, and a total of 47.5 AUM'S were utilized and $47.50 was received by the refuge. Grazing land on the refuge is limited to flood plain forest and is of marginal quality for grazing. Grazing is limited to permitees and reservation holders. Each animal is estimated to be using the refuge about one tenth of the time being grazed. One dollar is charged for each animal unit month.

B. Haying:

None on the district during this year.

C. Fur Harvest:

There had been no trapping season in 1969 and 1970 for Beaver. Excellent conditions during this time allowed the Beaver to recover to such good numbers that it was thought that a season would be allowed on the refuge during the Spring of 1971. The spring Beaver season allowed trappers to take a total of 350 animals from the refuge. Wisconsin held an early season in January - March 10, and Minnesota held a late season in March and April. Counts have shown that the population held its own after the trapping season and that another season with a bag limit of 10 animals be justified for 1972. It was estimated that about 75 Beaver trappers used the district for the sport. Beaver pelts ranged in price from $12.00 to $30.00 and most pelts were in fine shape. The 1971 fall Muskrat trapping season brought 210 permit trappers to the disrtict for sport and profit. This number of permits is up from the 204 permits issued last year. Fall weather conditions were favorable for the trappers this year. Most trappers had as much time in the marsh as they desired. With the good weather conditions in the trappers favor, early predictions of a record catch were arrived at. At the time of this writing, 88 reports out of 210 possible, or 42% of the reports indicate that 12,858 rats have been taken. With a projection of roughly 30,000 rats indicated, an average of 146 rats per trapper would be a good guess on total catch. Many of the reports that are out are the good trappers that are also going to trap during the 1972 Beaver season. These reports will not be in until April, 1972. The 30,000 rat catch is down from the 36,000 rat projection from last year. When all reports for 1970 were in, only 25,000 rats had been taken for the year. In this instance the projection had been high. Weather and ice conditions kept many of the trappers from even going out on the River. Muskrat pelt prices were much up over any of the last six or seven years. A good pelt was bringing $2.00 at the close of the year. Average price for a fur being about $1.35. If prices remain good during the spring of 1972, the 1971 fur harvest, Muskrat and Beaver, would be roughly worth $69,500 to the local economy.
Fox pelts are averaging about $13.00 per skin. Heavy pressure is being put on this animal during this period. Trapping pressure on all other furbearing species on the refuge is insignificant.

D. Timber Removal:

Three thousand dollars of special Forest Insect and Disease Control funds were made available for TD-9 rental to clear about 55 acres of oak wilt disease infected trees, on the Trempealeau Refuge. The trees are pushed down and placed on slash piles that are to be burned on alternate years until all piles are gone. The cleared land will be replanted with native grasses and shrubs. The timber sale that had been set up for 1970 was completed in the spring of 1971. The permittee estimated that he had taken out roughly 155,00 Board Feet of timber. Other areas in the Lumbro Bottoms have been marked out and set up for future sales, during 1972. Over 200,000 board feet have been cruised out in two locations. No other timber removal was authorized on the district in 1971.

E. Commercial Fishing:

One permit for a commercial holding pond remains in effect, with the revenue totaling $100.00. For other information see the discussion listed under Wildlife-Fish.

F. Other Uses:

Periodic field inspections were conducted in June and July on the Special Use Permits used to cover miscellaneous use on refuge and Corps of Engineer owned lands. The Bureau of Sport Fisheries and Wildlife maintain 152 of these permits in effect on the refuge lands, and this number is up by 12 over last years number in effect. Another 143 Corps permits were in effect in 1971. Most of the use involves maintaining a boat dock or slip, diving platform, or steps to the waters edge. A permit of this type structure costs the adjacent land owner or permitee $10.00 per year. Field inspections are necessary to be on the alert for trespass structures which have bee built without permit. Trespass violators are notified by registered mail and given a specific length of time to correct the situation and obtain a permit or face court charges. Special permits were issued to the Trempealeau County Sportsman's Club free of charge, and to Minnesota City Boat Club for $25.00. The permit issued to the River Trails Girl Scout Council for use of the lodge building at Trempealeau, was cancelled this year as the scouts have moved to a new location in Minnesota.

V. FIELD INVESTIGATION OR APPLIED RESEARCH

A. Wood Duck Banding:

Preparation for banding got underway in July with the brushing out and clearing of the cannon net sites. The NYC's helped in site preparation and setting up of the cannons. Pre-baiting began in middle July, with the nets being set out about the end of July. The first shot with the cannon took place in August, on the 10th. Five days later the last shot was taken and the nets put away. Most of the birds taken and banded this year were captured by bait trapping over water with the folding wire traps. One hundred one Woodies were banded during the banding season, and six other birds were also banded. Most of the banding was done near the Delta Fish and Fur Farm.

B. Graduate Student and Undergraduate Student Projects:

St. Mary's College and District Manager Leinecke continued the radio-telemetry study of the Trempealeau Refuge Deer herd. The study is in its last year of a three year study. Deer have been found as far away as Perrot State Park, about 2½ miles east of the refuge. The study is to be concluded in 1972 with the presentation of a thesis paper regarding the finding of the study.

C. Timber Survey:

The timber survey for the Winona District has been completed and put to use. One timber sale had been taken from an area surveyed, and two more have been planned in surveyed areas.

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VI. PUBLIC RELATIONS

A. Recreational Use

1971	FISHING	MISCEL-LANEOUS	HUNTING			TOTAL DAYS USE
			DUCKS	DEER	OTHER	
Spring	8,190	* 7,160				* 15,350
Summer	38,975	83,356				122,331
Fall	21,915	* 7,639	18,910	450	400	* 49,314
TOTAL DAYS USE	69,080	* 98,155	18,910	450	400	** 186,995 Visits

* Totals do not include 8,290 trapping visits.
** Total does not include 8,290 trapping visits & 2,305 Commercial Fishermen.

Water oriented activities are the most popular forms of outdoor recreation on the Winona District. Cool summer months this year caused a drop in the public use figures for the district. Fishing remained the number one activity on the area with 69,080 visits being recorded for the year. This figure is down about one per cent from 1970. Fishing is carried on year around, and the cool summer months did not affect the fishing numbers. Boating, sandbar picnicing, water skiing, swimming and camping round out the list of group recreation type water activities. All but about 9,000 visits in the miscellaneous category are of the water sport/camping variety. Bird watching, wildlife observation , and wildlife oriented photography make up the bulk of the remaining 9,000 visits. As summer draws to a close and fall colors begin to indicate that winter is not far away, the ducks and other migratory waterfowl begin to build their numbers in the districts bottomlands and marshes. Hunters now take to the field to take out some of their frustrations on the migrating waterfowl. A prediction of a good fall flight of birds brought hunters to the field in large numbers. An extended season of 55 total days in Minnesota and Wisconsin helped account for the increase of over 2,500 hunter visits, over 1970. Many birds in the area for a few weeks helped keep the hunter numbers up for most of the season. Hunting along the Upper Mississippi Refuge districts has one of the highest proportions of use compared to length of season for that activity than any other type of recreation on the river.

Total days use, or visits, for the year was down from 208,407 last year. This drop in numbers is reflected in the fact that for most of June and July the temperatures were quite cool. This cool weather kept the river from warming up to relaxing temperatures. Only in late July and August was the weather suitable for normal recreational activities. Peak load this year was on the lengthy Labor Day holiday, weekend.

The Corps of Engineers has added dredge spoilage to the district in recommended areas and these areas have added to the number of good recreation areas on the district. The only development program for the district was the regular inspection of heavily used sandbar areas. A marked decrease in the amount of litter found on these sandbars was worth mentioning. Litter arrests were cut in half this year. The general public seems to be learning that a nice clean sandbar is nice to arrive at.

B. Refuge Visitors:

See the visitor list prepared for the Winona Office.

C. Refuge Participation:

During the 1971 year, the Winona District Manager participated in various types of programs. Slide presentations, talks, talks which included a movie, refuge tours, cannon net demonstrations, duck banding demonstrations, ecology field trips, discussions with sportsmens groups, attending wardens conferences, attending training schools and teaching hunter safety classes to local young hunters. In March, during the National Wildlife Week programs, the district manager spoke to and presented slides and movies to just over 4,000 grade, jr. high, high school, college, and vocational students, as well as Lions Clubs, Conservation groups, library groups, and science clubs around the district. Press releases and local library exhibits were handled by the Winona office during this period. One small display was set up in the Winona Book Nook window. It is estimated that the local effort resulted in 60,000 people seeing or reading about wildlife and our need for it. The district manager participated in the LaCrosse Sport-o-Rama by helping district manager Kerschbaum man the display for one afternoon and evening. Dr. Wm. Green and the district manager participated in many field ecology and field demonstrations for the pupils of the Albert Lea School System during the summer months. Included in this learning was a trip to the heron and egret rookery on the LaCrosse District. The day consisted of the boat ride on the river to the site of the large Root River Rookery. Discussions with the individuals, river navigation tips, and demonstrations on refuge management techniques were highlighted during the day. The district manager took part in a Civil Service Training Course entitled Basic Management Techniques II. The course was taught during the last week in August at Omaha, Nebraska. Three other members of the UMR staff also participated in the training session. The third week in September brought together State and Federal Conservation Officers at the Yellow River State Park, near Lansing, Iowa. Attending, were wardens from three states, Game Management Agents, Coast Guard, Park Officers, and Refuge Personnel. About 50 persons were in attendance for the meeting to discuss waterfowl regulations and enforcement procedures. A similar meeting was held in the spring at the Whitewater State Park near Altura, Minnesota. The basic plan there was to discuss litter enforcement and have a brief session on oil spills and barge tow holding tanks. Each meeting was followed by dinner and basic refreshments to conservation people. During the winter months, time was taken to talk to local snowmobile groups and let them know exactly what can be done on the refuges in the area. Trap tag sales for the district allowed the district manager to get out and talk to numbers of trappers that are usually encountered in the field. Participation at the Horicon NWR goose interpretation sessions were limited to other staff members this year.

UM-13

Bag Check Summary of Species Taken
Upper Mississippi River Wildlife and Fish Refuge
D. Hunting: Period: Hunting Season 1971
Winona District

	1971	1970	1969
No. hunters checked	751	979	1007
No. ducks checked	993	1146	1235
Average ducks per day	18.1	22.9	29.4

Species	No.	%	No.	%	No.	%
Mallard	125	12.39	272	23.73	139	16.30
Black	12	1.12	1	.09	8	.64
Gadwall	19	1.91	14	1.22	33	7.60
Baldpate	59	5.94	182	15.88	230	18.60
Pintail	25	2.52	16	1.40	16	1.31
G.w.teal	130	13.09	137	11.95	40	3.20
B.w.teal	319	32.13	133	11.61	203	16.40
Shoveller	4	.40	9	.79	8	.64
Wood duck	231	20.28	271	23.68	364	29.52
Redhead	1	.10	6	.52	6	.47
Ring-neck	22	2.22	43	3.75	37	2.93
Canvas-back	16	1.61	35	3.05	50	4.04
Scaup	22	2.22	8	.70	27	2.25
Golden-eye	0	0.00	1	.09	0	0.00
Buffle-head	5	.50	8	.70	4	.32
Ruddy	2	.20	7	.61	2	.16
Mergansers	1	.10	2	.17	4	.32
Scoter	2	.20	1	.09	2	.16
Old squaw						

Hunters took ducks as follows:

4+# Hunters having 4+	63	8.38	96	9.81	74	7.3
3# Hunters having 3	53	7.06	69	7.05	92	9.1
2 # Hunters having 2	146	19.44	112	11.44	152	15.0
1 # Hunters having 1	265	35.29	293	29.42	339	33.6
0 # Hunters having 0	224	29.83	409	41.78	350	34.7

* Wood Ducks are the districts dominate nester, but many pulled out before the hunting season opened. Most of the woodie kill occurred early in the season. Even though the Mallard law was for a liberal bag, fewer mallards were taken in the average bag than in previous years. The Baldpate passed through the district quickly this year resulting in a lower kill than usual. The Teal continue to be found in a great number of bags, with Blue Winged Teal being the most abundant target for the many hunters. Hunter success was 1.32 birds/hunter; upwfrom last years 1.17. Hunters averaged 4.74 hrs/hunt/day and 3.56 hrs/bird. The hours/bird figure is down 1.29 hours from 1970 figures. The average kill in pool 5 was again low this year. Pool 5A averaged 1.58 birds/hunter.

E. Violations:

The following is a summary of the cases made on the Winona District during the 1971 calendar year, and prosecuted in either state or federal court:

OFFENSE:	NO. OF CASES:	FINES:
Taking & Poss. of Protected Migratory Birds	5	$73.00
Late Shooting - Duck Season -	15	395.00
Late Shooting - Duck Season -	2 Juveniles	Juv. Court Warning
Erect Early Blinds - Duck Season -	3	42.00
Display Decoys Early - Duck Season -	2	28.00
Transport Uncased Firearm in Motorboat -	6	160.00
Unplugged Shotgun -Duck Season-	6	183.00
Unplugged Shotgun-Duck Season-	2 Juveniles	Juv. Court Warning
Short Plugged Shotgun - Duck Season -	2	60.00
Hunting Waterfowl over Open Water	2	28.00
Take Furbearers With Firearm in Closed Season-	3 Juveniles	12.00 Restitut. 18 Mo. Probation
Trapping in ClosedSeason (Cont. from 1970) - *	1	35.00
Trapping in Closed Season(Cont. from 1970) - *	2 Juveniles	12 Mo. Probation
Trapping in Closed Season - *	1	50.00
Vehicle Parking Illegally on Refuge Landings -	19	288.00
Vehicle Parking Illegally on Refuge Landings -	3 Juveniles	6 hrs. Cleanup of Refuge Landings
Mooring Boats Illegally on Refuge Landings -	5	75.00
Fishing with too many lines -	2	30.00
Fishing with Bow and Arrow during closed Season -	2	50.00
Destroying Trees on Federal Refuge -	1	50.00
Defacing Government/Refuge Signs -	2	100.00
Fraudulent Purchase of Trapping Permit -	1	25.00
Violation of Probation -	2 Juveniles	Extension of Prob.
Littering -	5	227.00
Totals:	94	$1,839.00

*All convicted trappers also receive 3 year suspension of trapping previleges on the refuge. There was an 86% decrease in the number of litter cases from last year.

VII. OTHER ITEMS

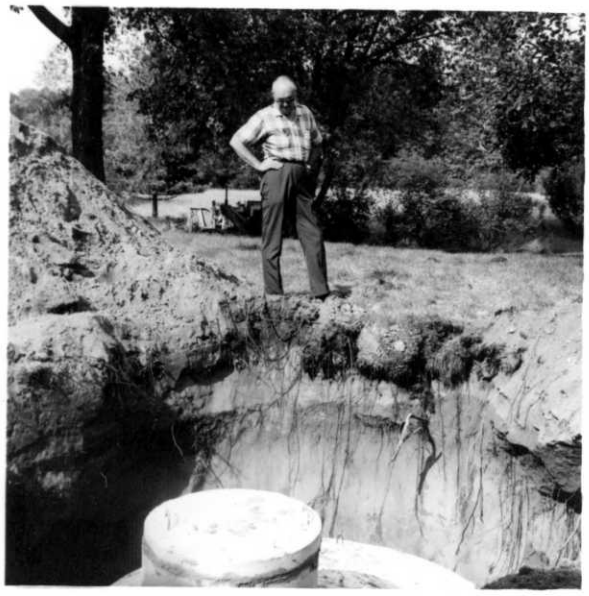
A. Items of Interest: SAFETY: There were no lost time accidents on the district this year. Preventive maintenance was carried out on all vehicles assigned to the district Periodic safety checks were made on the district headquarters buildings at Trempealeau. All maintenance carried out under supervision of Duncan Green, Maintenance-man. New Plymouth Sedan Delivery vehicles were distributed to the districts, with the Winona District receiving one. Many safety features on the new vehicles make it safer for the manager to complete his routine duties.

Personnel: No personnel changes on the Winona District in 1971. Janet Smith and Larry Nelson were hired as biological aides for the summer months.

B. Photographs: See the attached photo section of this report.

C. Credits: This report was written and typed by Winona Disrtict Manager Jerry F. Leinecke during Janaary 1972.

Approved:
James B. Monnie
Asst Reg Ref Supt.



Mr. Earl Eliason, Regional Office Engineering Office, inspects the installation of one of the new septic tanks placed at the Trempealeau Residence, office, and lodge building. Hengel Bros. Construction of LaCrosse, Wisc. installed new water lines, sewer lines, drain fields, submersible water pump, office water heater, and residence water softener. All work was completed by October 21. B-279-4 1971. Leinecke.

One of the Hengel Bros. Workmen install the 900 gallon septic at the residence building. A 750 gal. tank was place at the office, and two 750 gallon tanks were placed at the lodge building in anticipated future use by the visiting public. B-279-5 1971 Leinecke.

Larry Nelson, one of this summers two Biological Aides, poses at the site where a new flag pole will be erected. The foundation remains from the original wooden pole which broke in the late 1950's. Previous attempts to place a flag pole in the old location were abandoned because the old wooden base remained in the foundation hole. B-279-1 1971 Janet Smith

Janet Smith, the second of two Biological Aides, levels the steel supports that will brace the flag pole. Larry Nelson takes needed measurements while one of the summer NYC's record the measurements for further reference. Holes were drilled into the old wood base, saturated with fuel oil, and burned. Continual burning removed enough of the wood to allow steel supports to be erected and cemented into place. B-279-2 1971 Leinecke

Janet Smith, Larry Nelson, and all five NYC boys prepare to raise the Department of Interior flag. No flag of the United States could be found at the station. One was ordered and received shortly after the photos were taken.
B-883-8 1971 Leinecke

Janet and Larry proudly stand next to the newly erected flag pole at Trempealeau.
B-883-12 1971 Leinecke

In previous years, the refuge landings were used as a mooring site for many fishing and hunting boats. The landings were well posted, but scenes such as these were quite common. This year, Minnesota Commissioners Order 1828 allowed enforcement of parking and mooring regulations. B-336-10 Leinecke

Even though the landings were clearly marked in an effort to keep vehicles and boats from jamming up the access, twenty four violations were ticketed. The owners were relieved of $288.00 during the fall hunting season. Near the end of the season, the word had spread, and boats were properly moored and vehicles properly parked. B-279-11 1971 Leinecke.

In beautiful Buena Vista Park, on top of the bluffs overlooking the small river village of Alma, Wisconsin and the river bottom lands, stood the remains of what at one time had been a refuge interpretation sign. Permission was received from the park directors to erect a new sign over looking the valley. B-883-1 Smith.

The new overlook sign being erected by Larry and the NYC crew. B-883-6 Smith.

A closeup view of the completed overlook sign at the Buena Vista Park at Alma, Wisconsin. The view directly behind the sign is of the bottomland north, upstream toward Wabasha, Minnesota. B-883-5 1971 J. M. Smith

A view to the downstream side of the river from Buena Vista Park. The main channel winds its way through the wooded bottomland of the refuge. Also, note the three smoking stacks of the Dairyland Power Plant blotting an otherwise beautiful scenic wonder. B-883-3 1971 Smith

A timber sale was set up in the Zumbro River Bottoms on the refuge near Kellogg, Minnesota. The Earl Wayne Lumber Company of Durand, Wisconsin was top bidder for the 154,000 Board Feet of sawlogs and 400 cords of pulpwood. A check for $4,062.00 was accepted for the refuge by Area Forester Al Johnson. B-598-1.

The log yarding area at the peak of the sale. Continuous hauling of the logs made it possible to complete the sale before the spring breakup. B-598-3.

Boy Scout Troop 15, Winona, Minnesota and the Upper Mississippi River National Wild Life and Fish Refuge, Winona District, participated in the national clean-up program Project SOAR. All the sandbars in Pools 5A and 6 were cleaned up by the scouts. The refuge district provided the transportation consisting of boats and trucks. The scoutmaster provided a houseboat from which lunch and beverages were served throughout the afternoon on the river. B-598-7 Leinecke.

The Boy Scout Troop 15, their scoutmaster, on left, and Biological Technician Bart W. Foster, right background finish checking over the days haul from the pools sandbars. B-598-12 1971 J.F. Leinecke

The Winona Area Environmental Committee, WAEC, sponsors monthly glass, tin, and paper pickup locations for the recycling of these items. The truck, boat, and auto are filled with sacks of cans and bottles gathered from the refuge sandbars by the local boy scout troop during Project SOAR. B-597-5 Leinecke

The members of Boy Scout Troop 15, Winona, Minnesota proudly turn over the glass and tin they collected during the day. The scouts and the refuge staff are hoping that the recycled material does not show up on the refuge during the next cycle. These boys have helped in their own way to help Keep America and the Mississippi River Sandbars Beautiful. B-597-6 1971 Leinecke.

LA CROSSE DISTRICT

NARRATIVE REPORT

UPPER MISSISSIPPI RIVER
WILD LIFE AND FISH REFUGE

LA CROSSE DISTRICT

1971

Cover photograph: Wild rice (*Zizania aquatica*) habitat of the LaCrescent-Blue Lakes area. R-7-71-29 MAK

NARRATIVE REPORT

UPPER MISSISSIPPI RIVER NATIONAL WILDLIFE REFUGE
LA CROSSE DISTRICT
1971

PERSONNEL

Eric Lawson, District Manager	Retired 8 Jan 71
Matthias Kerschbaum, District Manager	E.O.D. 11 Jan 71
Robert Litke, Wildlife Aid	14 Jun -3 Sep 71

WORK-STUDY STUDENTS

Virginia Niles	7 Jun - 27 Aug 71
Theresa Anderson	6 Jun - 3 Sep 71

NEIGHBORHOOD YOUTH CORPS ENROLLEES

Theresa Anderson	1 Jan - 26 May 71
Linda Boardman	27 Sep - present
James Ammerman	14 Jun - 11 Aug 71
Steven Limpert	14 Jun - 11 Aug 71
David Nordstrom	14 Jun - 11 Aug 71
Jeffrey Russell	14 Jun - 11 Aug 71
Joseph Stall	14 Jun - 11 Aug 71
Dean Whitewater	14 Jun - 17 Jun 71
Eva Jackson	14 Jun - 11 Aug 71
Linda Meyer	14 Jun - 11 Aug 71
Sharon Smith	14 Jun - 22 Jul 71

United States Department of the Interior

Fish and Wildlife Service

Bureau of Sport Fisheries and Wildlife
La Crosse, Wisconsin

C O N T E N T S

I. GENERAL

A. Weather Conditions

MONTH	Precipitation: Total	Precipitation: Normal	Precipitation: Snowfall	Temperature: Max.	Temperature: Min.	Temperature: Mean Av.	Temperature: Normal Mean Av.
January	1.52	1.85	26.4	36°	-23°	7.4°	16.5°
February	2.06	1.05	20.4	46°	-36°	17.0°	19.4°
March	1.11	2.07	5.5	70°	2°	28.2°	30.5°
April	1.74	2.75	Trace	84°	18°	47.3°	47.0°
May	4.89	3.76	-	83°	26°	55.1°	59.2°
June	4.33	4.20	-	98°	46°	72.6°	69.4°
July	3.56	3.73	-	90°	49°	68.5°	73.8°
August	2.22	3.63	-	93°	44°	68.2°	71.6°
September	2.32	3.48	-	95°	38°	64.4°	62.2°
October	1.01	2.29	-	81°	31°	57.8°	51.1°
November	1.57	1.94	3.2	64°	11°	36.5°	34.2°
December	2.55	1.15	11.0	41°	2°	24.3°	21.8°
Annual Totals	28.88	31.90	66.5				

The new year was ushered in with a 16.8 inch snowfall on 4-5 January. For 29 days during the month, the temperatures never got above freezing. The month was very cold with the average temperature some 9°F below normal. All precipitation was in the form of snow. Early February saw another heavy snow of 9½ inches. A low of -36°F was recorded on 8 February which was a record low for the date. Temperatures otherwise were near average but precipitation was 96% above normal. Again all precipitation came as snow. During March the spring breakup was noted. The first barge travel on the river was on 16 March. Precipitation was well below normal and there was some light snow. April temperatures were near normal with warm days and cool nights. Precipitation was well below normal. The cool evening temperatures and the lack of rain contributed greatly in reducing the potential threat of high water.

May, although warm, had temperatures somewhat below normal. Precipitation was well above normal with heavy rains during the last third of the month. A tornado alert was received on 31 May but fortunately never materialized. June was hot with several good thunderstorms. Temperatures were above normal while precipitation was near normal. On 19 June several funnel clouds were reported near La Crosse, Wisconsin. In July we again received some good thunderstorms. Precipitation was near normal. Lightning struck the federal building very near the district manager's office. Damage to the building was slight, but was more substantial to the nerves of those inside. Temperatures were unseasonably cool in the latter part of July with a low of 49°F recorded. August too had below normal temperatures and precipitation. A fast-moving thunderstorm hit the district on 11 August. Wind speeds of 75 mph were reported.

Mid-September gave us the first taste of fall with temperatures in the 30's recorded. In late September Indian Summer was experienced with 70° and 80° days not uncommon. Precipitation was below normal. 12 October saw the first wide-spread frost. Precipitation was again below normal and the dryness of September and October were major contributors to the fabulous show of fall color on the district. Temperatures were well above normal. Even duck season opened on a "bluebird day." November gave warning that winter would all to soon be upon us. On 23 November the first snowfall of the winter season was received. The month was generally cold. December temperatures were above normal. River bottoms froze, opened, and re-froze during the period. A 9 inch snowfall was received on 29 December. Precipitation for the month was above normal and all in the form of snow.

UM-1 Rev.
1964

B. Habitat Conditions
1. Water

POOL LEVELS

Pool No. 8 at La Crosse, Wisconsin Normal: 4.6 ft.

MONTH	HIGHEST LEVEL	LOWEST LEVEL	AVERAGE LEVEL	DATES OF HIGH LEVEL	DATES OF LOW LEVEL
January	5.9	5.1	5.3	4,5	14,15,28
February	6.1	4.8	5.3	22	5
March	8.8	5.8	7.0	29,31	11,12
April	12.8	8.5	10.6	18	30
May	8.1	5.6	6.8	3	17,21
June	8.2	5.1	6.6	1	30
July	5.8	4.2	5.1	8,9	28,29
August	4.9	4.3	4.7	13,17,18	2,3
September	5.0	4.4	4.6	13,30	1,15,22,23
October	5.3	4.5	4.9	29	14
November	8.0	5.9	7.0	10,11	1
December	7.1	4.6	5.9	1	15

Water levels did not exhibit the stability shown in 1970. As heavy winter snows melted, spring water levels continued to rise until cresting at 12.8 ft. on 18 April. We were fortunate that precipitation for the period was below normal and that periods of thawing were interspersed with periods of freezing. River levels were expected to crest much higher and the resultant crest was only 0.8 ft. above flood stage of 12.0 ft. Once the crest was reached, water levels dropped rapidly. Water levels continued to fall into the summer reaching a record low for the past ten years of 4.2 ft. on 8 and 9 July. Water levels remained low into the hunting season, starting to rise in mid-November. During the trapping season water levels

were nearly 4 ft. above normal stage of 4.6 ft. The usual fluctuations were experienced in December due to ice conditions. Navigation on the main channel opened on 17 March and closed in mid-December.

2. Food and Cover: Winter was a critical time, for again as in 1970, food and cover for wildlife populations were at a premium. The area was covered with some two feet of snow and temperatures were very low. The heavy snow cover was again contributory to reduced water oxygen levels. Fish populations experienced some winter kill.

Spring water levels were well above normal and made the bottoms somewhat unattractive to migrant waterfowl, especially dabbling ducks. High water levels no doubt caused some disruption among bottomland wildlife populations however, the river crest was lower than anticipated and dropped rapidly. The detrimental effects on furbearers and upland game were thus thought to have been reduced.

Water levels continued to fall in late spring and aquatic vegetation growths began to become manifest. By June stands of river bulrush, lotus, cattail and Saggitaria were abundant. Common submergents too were now locally abundant with an exceptional crop of wild celery noted in the shallower portions of Lake Onalaska. This celery crop was a primary area of concentration for widgeon and canvasbacks in the fall. Wild rice was locally abundant in the La Crescent-Blue Lakes area (see cover photo). Waterfowl utilization of food and cover seemed totally refuge oriented with the exception of periods of high water in spring when adjacent croplands were used.

It appeared that the aquatic food supply was supplemented by a robust mast crop. Mallards, wood ducks, and upland game species put this to good use as they foraged in backwater sloughs of bottomland timber areas.

By November higher water levels and local freeze up nudged waterfowl to move on. Re-opening of frozen areas in December provided feeding areas for those migrants which had lingered. There was little snow on the ground and much open water later than usual, creating better conditions for fish populations. At the close of the year snow cover was about 9 inches.

II. WILDLIFE

A. MIGRATORY BIRDS:

1. Waterfowl:

a. Ducks: The resident winter waterfowl population was made up of some 420 mallards, 10 blacks, and 5 goldeneyes. These birds utilized the open water areas at French Island, off Isle La Plume, and below the spillways and control structures of lock and dam #7. A few mallards wintered at the Badger State Sportsmens' Club project on Goose Island.

Some early migrant goldeneye were noted by the end of February but the migration really began in earnest in March. Spring arrival dates for each species were as follows: goldeneye - 25 February, common merganser - 10 March, bufflehead, hooded merganser, scaup, and black duck - 15 March, ring-necked, redhead, and canvasback - 19 March, shoveler, pintail, wood duck, and mallard - 27 March, red-breasted merganser and widgeon - 31 March, gadwall, ruddy, green-winged and blue-winged teal - 2 April. All the usual species were noted by the first week in April. The spring peak occurred during the third week in April when an estimated 46,980 ducks were on the district. This represented an 18% increase in peak population over 1970. Total use during the spring period was up by 8.7%. By 24 April over 80% of the migrants had moved on.

Although duck use for the summer period was higher than in 1970, this was attributable to a larger influx of fall migrants in August and not to an increase in resident and nesting birds. In fact, resident and nesting use was below that of 1970. A primary reason for this was a near 30% drop in resident and nesting mallards. Why this occurred may have been due to the higher water levels of April. A greater number of birds may have been pushed north as opposed to 1970 when water levels were more stable. Even though overall use by residents and nesters decreased, blue-winged teal and wood duck populations were 30% and 15% higher respectively.

The first observed brood was a hooded merganser female and her young on 6 June. Reliable reports of broods had been received as early as the third week of May. Brood counts were conducted during the period 1-20 July. Although the number of broods observed on brood transects was only slightly lower than in 1970, the total number of broods encountered throughout the summer was considerably lower. Production estimates for nesting species were as follows: blue-winged teal - 250, mallard - 2400, black duck- 20, wood duck - 1800, and hooded merganser - 240. Total estimated production of 4710 was about 5% below 1970 and 34% above the past 10-year average. Relative to 1970, mallard production was down 23% and wood duck production up 29%. A more detailed discussion of wood duck use, nesting, and production is reported under Section V.

During July the Badger State Sportsmens' Club introduced 3900 six-week old mallards into the district population. With abundant food and few dangers, many survived until the duck hunting season opened. The duck project continues to be a major activity of the club.

August saw the return of the first migrants. By mid-August increases in blue and green-winged teal were noticeable. Thirteen hundred baldpates were noted on 27 August. Pintails too were seen during mid-August. First fall observations for various species were as follows: pintails - 16 August, widgeon - 27 August, gadwall - 23 September, scaup and canvasback - 30 September, ruddy duck - 9 October, redhead - 13 October, ring-necked and bufflehead - 14 October, and goldeneye and common merganser - 4 November. Two infrequent visitors, old squaw and white-winged scoter were observed on 4 and 10 November respectively.

The number of fall migrants continued to increase, peaking at nearly 104,000 ducks during the week ending 23 October. This peak represented a 23% increase over the 1970 peak. Of note were the 38,000 canvasbacks present during the week. By late September both wood duck and teal numbers were decreasing and most were gone by mid-October. High water levels and colder weather in early November saw a 25% drop in duck population. By the end of November the bulk of the migration was over. A few stragglers remained into mid-December when most of the district became ice covered. At the year's end there were some 400 mallards and a few blacks, goldeneyes and mergansers using the open water areas of French Island, and below the control structures of lock and dam #7.

The following table gives a comparison of days use and peak numbers:

Period	Days Use		Peak Numbers	
	1970	1971	1970	1971
Jan-Apr	707,735	769,096	39,820	46,980
May-Aug	688,380	879,424	12,230	19,800
Sep-Dec	3,275,785	4,770,080	84,250	103,990
Total	4,671,785	6,418,600		

b. Geese: The first migrant Canada geese were observed on 28 March when 400 were seen in the Root River area. High water kept goose use down some 68% during the spring. Geese utilized flooded agricultural fields which bordered the district. The nesting goose population and production were about the same as in 1970 with two broods of five and three young seen. There were also reports of a few pair nesting on Goose Island but these were not observed. The Badger State Sportsmens' Club reported a production total of about 30 goslings at the Goose Island project.

Fall migrants were first noted on 23 September with 30 seen on Lake Onalaska. The fall population continued to build to a peak of 2220 by 20 November. The represented a decline of 31% from the 1970 peak of 3200 geese. Canada geese had moved on for the most part by the second week of December. At the end of the year there are about 30 geese utilizing the Badger State Sportsmens' Club project area.

Snow and blue geese were seen during both spring and fall migrations. They were present on the district in small numbers from late March through 24 April and during late October.

Total goose use for 1971 was 108,150 use days. This represented a 21% increase over 1970.

c. Swans: The spring arrival of whistling swans was recorded on 27 March when 35 were seen. The peak number of 1300 represented and 8.3% increase over 1970. Spring swan use of 14,210 use days was up by 24.3%. The first fall observation of this species was the sighting of 49 on 4 November. Fall swan use of 5292 use days was 352% over 1970. Swans utilized flooded agricultural fields in the spring and fed in celery beds and shallow water areas of Lake Onalaska and Wisconsin Island during the fall.

d. Coots and Gallinules: Coots were noted on the area from 2 April through 18 December. Total use for this species was 32% over 1970. A peak of 64,700 was recorded during the week of 16 October. Production was estimated at 75 young.

Gallinules were first observed in mid-June. Both production and use are believed down somewhat from last year. Gallinule broods were observed infrequently in the marshes bordering the La Crescent, Minnesota dump.

The following is a breakdown of coot and gallinule use and peak numbers for 1970 and 1971:

	Spring		Summer		Fall	
	1970	1971	1970	1971	1970	1971
Coots:						
Peak No.	16,500	6,000	2,400	3,000	54,000	64,700
Days Use	212,200	130,410	45,970	53,550	1,475,350	2,105,110
Gallinules:						
Peak No.	-	-	350	200	400	300
Days Use			14,560	6300	5750	8750

2. Other Water Birds:

a. Rails: Sora rails were present from mid-May to late October. At their peak, soras were judged to number 15,000 individuals. This was again due to the fact there were several thousand acres of very attractive habitat in the La Crescent-Blue Lakes area. A total of 37 soras were seen on the annual transect inventory of 16 September. This was down from the 53 seen on the 1970 count but still represented a very large rail population.

King and Virginia rails are known to be present but none were observed.

b. Egrets: Common egrets were first noted during the spring "Refuge Open House" on 3 April. This species was present into late November. The peak, occurring in mid-July, was estimated at 300. Production in the Root River Rookery was estimated at 30. Several summer storms did substantial damage within the rookery. Nests were destroyed and flightless swept from the trees. Several instances of predation of the grounded young were noted with the predator assumed to be raccoon. A more intensive study of the rookery is planned as discussed in Section V.

c. Herons and Bittern: Great blue herons were first noted on 24 March. This district population increased rapidly peaking at an estimated 1400 birds during the last week in July. Great blue herons were present through the first week in December. An estimated 400 young were produced in the Root River Rookery. This total, 50% below 1970 production estimates, reflects the affect of destructive storms and resultant predation on heron young survival. The rookery study is reported in Section V.

Green Heron were first observed on 22 April and were present through 9 October. Peak number for this species was estimated at 400, down 33% from 1970.

Yellow-crowned night herons were observed from 7 May through 9 October. Peak number for this species was estimated to be 15. In early June a trip to the Shore Acres Rookery revealed five nests, two of which were occupied by yellow-crowns. On a return trip in early August, only two nests could be located. Both nests showed signs of activity, with remnants of food and egg shells below. One dead young was observed. Production was estimated at 4.

American Bittern were seen infrequently from mid-April through mid-October. One was found dead during the duck season, apparently the victim of "mistaken identity."

Least Bittern were common from 17 July through 18 September. Target and La Crescent-Blue Lakes were favorite haunts for this species.

d. Loons and Grebes: Tragedy struck the only two loons known to have visited the district in 1971. In the spring a common loon became entangled in a commercial fisherman's gill net and drowned; in the fall one fell victim to the hunters' gun.

Pied-billed grebes were commonly seen from early April through mid-November. Production was estimated at 20, with most of the young observed in the Shore Acres-La Crescent, Minnesota dump area. Horned grebes made a brief appearence when two were seen on 4 November.

e. Cormorants: Double-crested cormorants were seen both spring and fall. After a brief appearance on 10 April, they returned from mid-September until 13 November. The peak number in the fall was judged to be 40.

f. Gulls and Terns: Both herring and ring-billed gulls were observed from early April to mid-December. Not one gull could be found on the Audubon Christmas Bird Count conducted on 18 December. A lone Franklin's gull was seen on 2 April near Brownsville, Minnesota.

Black Terns were common from mid-May through mid-September. This species nests on the district and many immature were noted. Both common and Caspian terns were seen during the spring and fall migrations.

3. Shorebirds: Killdeer were present from 20 March until 20 November. Other shorebird species noted were: yellow-legs, spotted, least, and pectoral sandpipers, dunlin, long-billed dowitchers, and semi-palmated plover. Common snipe were frequently observed during the fall migration. Woodcock were uncommon. The 1971 Woodcock Singing Ground Survey was conducted on 3 and 7 May on upland routes adjacent to the district. Only two "peents" were heard during the counts. This is comparable to previous years.

4. Doves: Mourning doves remained through the winter in small numbers. The district does not provide optimum habitat and most of the dove use occurred where district and adjacent croplands are in proximity. Fourteen doves were seen on the Christmas Bird Count so there will be a few that overwinter again this year. Wildlife Aid Litke assisted the Wisconsin Department of Natural Resources in mourning dove banding on private lands in the vicinity of the district. They had very good success with well near 400 banded for only two weeks work.

1965
"M-9A

Refuge: Upper Mississippi, La Crosse District
Period: **Calendar Year** 1971

B. Upland Game Birds

SPECIES	POPULATION JAN. 1	YOUNG PRODUCED	NUMBER STOCKED	GREATEST NO. PRESENT	TAKE	LOSS	POPULATION DEC. 31
Ring-necked Pheasant	10			10			5
Ruffed grouse	20	10		30		10	20
Bob-white quail	12			12			
Gray partridge							
Wild turkey							

Pheasants were seen only once during the year. Ruffed grouse were noted periodically. Automobiles accounted for much of the loss as birds moved from the district to the upland across highways. Severe winters appear to have depleted all introduced Bob-white quail. No observations of this species were made during the period.

C. Big Game Animals (White-tailed deer)

POPULATION JAN. 1	YOUNG PRODUCED	GREATEST NO. PRESENT	HUNTER TAKE	LOSSES	POPULATION DEC. 31
80	35	150	25	30	75

Extreme cold and heavy snows in January and February made the 1971 winter a very difficult one for deer. The depth of the snow made travel arduous and numerous observations and reports of dogs harassing and killing deer were noted. Very few sightings of deer were made during spring and summer, but populations are believed comparable to 1970. At the end of the year, snow depth was minimal and temperatures not so severe making general conditions much better.

UM-14
Rev.
1965

Refuge: Upper Mississippi La Crosse District
Period: Calendar Year 1971

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

SPECIES	POPULATION JAN. 1	YOUNG PRODUCED	GREATEST NO. PRESENT	TAKE	CON-TROL	LOSS	POPULATION DEC. 31
Muskrat	15000	75000	90000	55000		15000	20000
Mink	20	40	60	25		15	20
Beaver	650	200	550	300		20	470
Otter	2	0	2				2
Raccoon	750	600	1100	70		30	1000
Red Fox	20	20	40	20		5	15
Gray Fox							
Skunk	20	15	30			5	10
Cotton-tail Rabbit	20	80	100	30		10	60
Opossum	10	15	25	5		10	10
Gray & Fox Squirrels	100	200	300	100		100	100
Woodchuck	4	6	10			5	5
Badger							

Judging from observations, house counts, and trapper zeal, 1971 was another good year for muskrat. The following is a comparison of house counts conducted on two sample areas for the past five years:

	1967	1968	1969	1970	1971
Lawrence Lake	324	99	92	357	361
Brown's Island	170/494	201/300	152/244	281/638	293/654

Again as in 1970 house counts may be somewhat high in the representation of the population. At the time of initial house building (early-mid August) water levels began to drop. This left many houses high and dry as well as some bank dens and some secondary house building obviously occurred, thus increasing the number of houses. The degree to which this occurred would correspondingly lower the muskrat population estimates but 1971 was still a good year for this species.

The mink population continues to be low with only an occasional observation made. Beaver were common though numbers were down somewhat due to a 20 animal limit in Wisconsin for 1970.

Otter were uncommon and no observations were made during the period. Raccoon were present in good numbers or bad numbers however one feels concerning this species. Judged by the number of visits arounding banding site operations there must be a million of 'em. Rabbits and squirrels were present in small numbers. Fox, skunk, opossum, and woodchuck populations remain low with only a scattered observation or two make during the year.

E. HAWKS, EAGLES, OWLS, AND CROWS: Red-tailed hawks are resident throughout the year. Marsh, sparrow, rough-legged, and red-shouldered hawks were noted during spring and fall migrations.

Bald Eagles were present at the beginning of the year. The last eagle seen during the southern migration was on January 12. No other eagle observations were made until February 10. Eagle numbers gradually increased peaking at 18 on March 19. The last eagles were observed on April 3. Only one adult bald eagle wes seen on the mid-winter eagle count on February 22. Four adults were seen in 1970 on a corresponding count. The first fall observation was made on October 15. The district populations peaked at an estimated 30 birds during December 4-18. As in past years, the ratio of immatures to adults decreased rapidly as December advanced, with few immatures remaining late. At year's end an estimated 20 eagles are still with us.

Osprey were present during the spring and fall migration. The most seen at any one time was two.

Great-horned and barred owls were present the entire year. An injured individual of both these species was received and cared for during the year. Both were returned to the wild. The injured great-horned owl had an injured wing and a wound to the left eye. It was apparent that something had penetrated the eye with subsequent loss of the internal

fluids which give form to the eyeball itself. Whether his hunting in the wild would be affected or not remained to be seen but he was reported to swoop at and sieze pigeons with apparent ease during his convalescence.

Screech, saw-whet, short-eared, and long-eared owls are all known to be in the area but again as in 1970, none were observed.

Turkey vultures were observed from mid-April to early October. The peak number reported was ten.

Crows were observed year around with populations ranging from 30 to 600.

F. OTHER BIRDS: The Audubon Christmas Bird Count which may serve as a winter index for all species will be reported in this section. The tally for the 18 December count of the La Crosse, Wisconsin area was as follows: Canada goose - 83, mallard - 442, black duck - 10, wood duck -2, canvasback - 1, lesser scaup - 7, common golden-eye - 11, red-tailed hawk - 9, rough-legged hawk - 2, bald eagle - 12 (all adults), sparrow hawk - 1, ruffed grouse - 5, coot - 5, mourning dove - 14, great-horned owl - 1, barred owl - 3, long-eared owl - 1, short-eared owl - 1, belted kingfisher - 2, red-bellied woodpecker - 12, downy woodpecker - 13, bluejay - 86, common crow - 44, black-capped chickadee - 82, white-breasted nuthatch - 49, brown creeper - 3, robin - 26, golden-crowned kinglet - 3, cedar waxwing - 69, northern shrike - 2, starling - 709, house sparrow -1335, rusty blackbird - 2, grackle - 8, cardinal - 91, redpoll - 30, pine siskin - 178, American goldfinch - 11, slate-colored junco - 210, tree sparrow - 389, and field sparrow - 8.

G. FISH: 1971 was considered another good year for fish populations. Although the heavy snow cover of January and February contributed to reduced oxygen levels and local die-offs, early break-up helped relieve the situation. High water in the spring was gradual in coming, quickly dropped to more normal levels, and was believed to have had a minimal effect on spawning. Winter freeze-up was very late in coming and there was a good deal of open water at the end of the year. Snow cover for December was much less than that of last year and winter conditions are so far believed improved over 1970.

Of note was the observation of two paddlefish, Polydon spathula. The fish were caught in a commercial fisherman's gill net. They were removed, photographed, and released. One of the fish is shown held by Ken Brown, La Crosse Tribune outdoor writer. The negative is in Ken Brown's file.

Paddlefish are relatives of the sturgeon. Two genera of one species each are known, one from the Yangtze River in Asia, the other of the Mississippi River Basin. The species is protected in Minnesota and Wisconsin.

H. REPTILES AND AMPHIBIANS: Although massasauguas are present on the district, only one was encountered and this on lands adjacent to the district. Spring peepers and chorus frogs were first heard on 8 April. Map and sawback turtles were common.

I. DISEASE: During April a sick whistling swan was reported to have been recovered below Brownsville, Minnesota. Investigation revealed symptoms of general lethargy, limberneck, and a greenish stained vent, the result of severe diarrhea. The swan died during the next 24 hours and was sent to the Wisconsin Department of Natural Resources Laboratory at Black River Falls. Although lead poisoning is suspect, no report has been received to date.

J. INSECTS: Monarch butterflies were observed from the end of May until September. By the end of July they had begun to congregate in groups. Twenty to thirty per mile with occasional groups of 100 or more were noted at this time on Wisconsin Highways 35 and 93 in La-Crosse and Trempealeau counties respectively. On 7 September monarchs were everywhere along the roads and the migration was in full swing. After that date numbers diminished rapidly.

Beginning in August and into early fall, concentrations of large numbers of whirligig beetles were frequently observed.

K. RARE AND ENDANGERED SPECIES: No observations of rare or endangered species were made during the year. Ospreys, the status of which is currently undetermined, are reported under E of this section

III. REFUGE DEVELOPMENT AND MAINTENANCE

A. PHYSICAL DEVELOPMENT: With clearing and initial filling accomplished during 1970, things looked rosy for a summer completion of the I-90 boat access. On 22 April the Minnesota Highway Department resumed hauling of shale and clay fill material from the adjacent bluffs. Before June was over, sufficient fill material had been received to warrant preliminary engineering work for the access.

The amount of free material hauled by the Highway Department is at best a guess, but it is estimated the Bureau received seven to eight thousand cubuc yards of fill free of charge. Both parties benefited since the area provided a convenient site for dumping this highway ditch cleanout material. Future expansion of the access will be aided by the fact that the fill material is available to us annually.

In August a contract was awarded to the Hector Construction Company of Caledonia, Minnesota, but it was not until November that work was initiated. The project took one month to complete.

The access itself was a 40 ft. by 40 ft. concrete slab with 14 precast concrete planks extending into the water. The approaches to the access were graded, shaped, and graveled. Forty-two pre-cast curb blocks were positioned to delineate the parking areas.

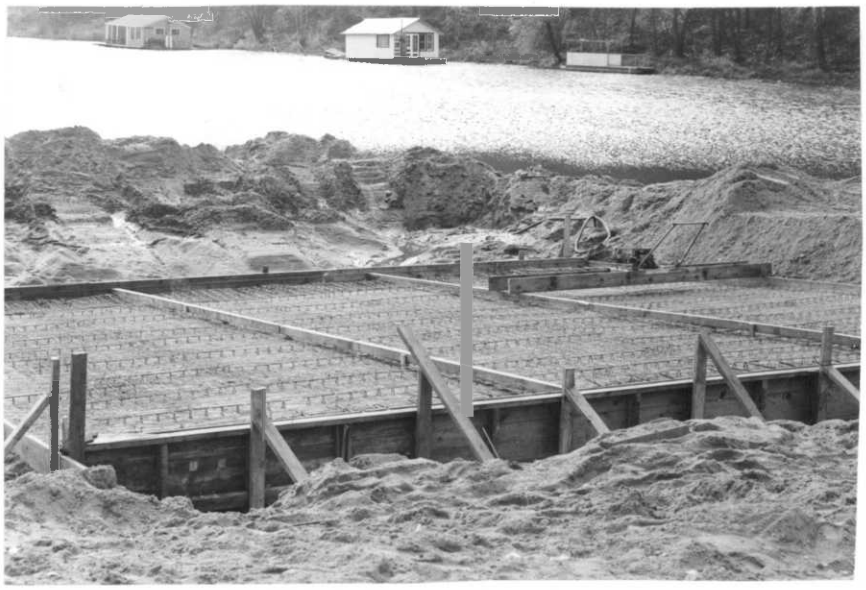
The following series of pictures will help tell the story in the development of this facility:

I-90 access site in 1970. Brush and small timber clearing operations were underway and conducted by Green Thumb crews.
R-5-70-4A EBL

I-90 access site in 1970. Dredging of 20,000 cubic yards of fill upon which to build road and ramp was accomplished. R-5-70-3A EBL

The Minnesota Highway Department had completed hauling of fill-base for access site. 830 cu yds of gravel were used on entrance road and parking area. R-10-71-4 MAK

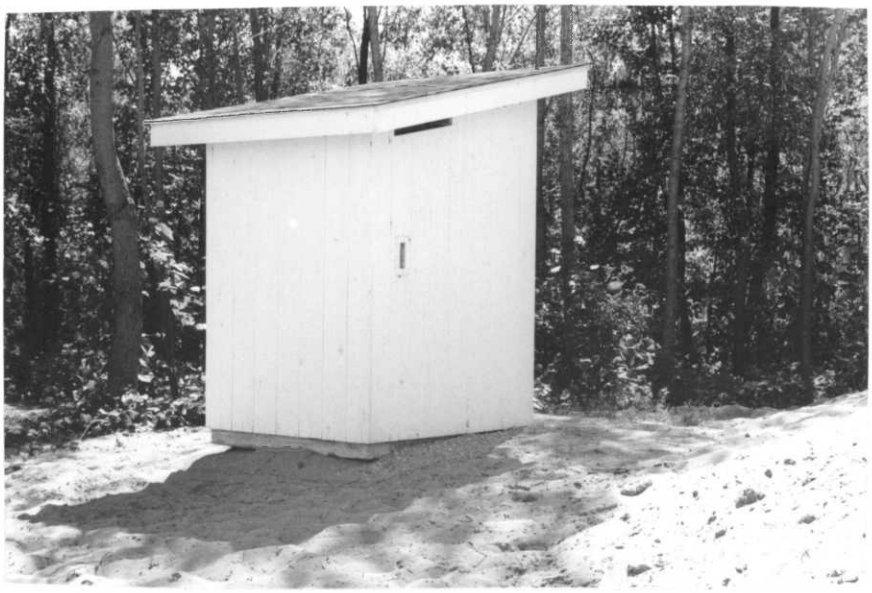
A coffer dam was constructed, proper slope obtained, and forms made for pouring the concrete slab.
R-10-71-3 MAK



56 pre-cast concrete planks were bolted to the slab and to each other. These planks would extend an additional 21 feet into the water. Each plank was estimated to weigh over 800 lbs.
R-11-71-7 and 10 MAK

The above reprint from a color slide shows the completed access ramp. An additional 300 cubic yards of gravel for sloping and shaping, and the job was done. A final inspection was made and the work approved on 2 December. Heavy use is expected here and the site is judged the best of its kind in the area.

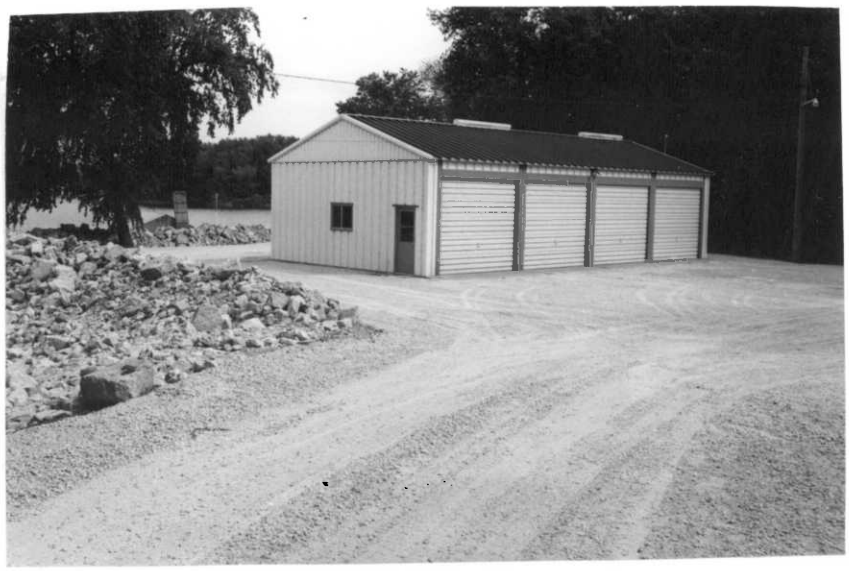
During May and June new toilet facilities were installed at the Wildcat Landing and County Park. This area is operated by the Houston County of Minnesota under a Bureau issued permit. A before and after picture shows the improvement. This area receives more and more use each year and such facilities are an important facet in its development.



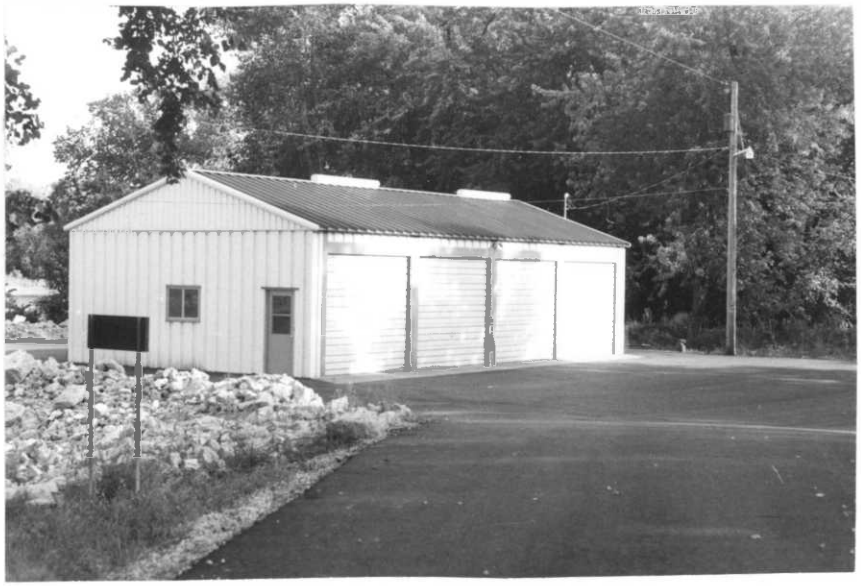
Before R-5-71-19 MAK

After: a new building placed over a new concrete holding tank.
R-5-71-16 MAK

The district service facility also received some important improvement during the year. The driveway and parking area of the facility were graded and surfaced with blacktop material. The value of this project is certainly manifest during wet weather and should better stand the test of high water.



District Service Facility - 1970
R-7-70-18A EBL



District Service Facility - 1971
R-9-71-28 MAK

On 10 and 14 June the district staff of one increased markedly with the addition of two college work-study students and 9 Neighborhood Youth Corps (NYC) enrollees. Both work-study personnel were young ladies, one of whom supervised the NYC's, the other was assigned to the district office. Work-study personnel worked 40 hours per week with a total of nearly 800 hours of work received by the district. Only 25% of their wages was paid by the Bureau, the remaining 75% came from the university with which they were affiliated.

The group of nine NYC's was made up of six boys and three girls. The girls were assigned to work at the service facility while the boys assisted in a variety of field duties related to refuge operations and maintenance. NYC's were permitted to work 28 hours per week and a total of 1560 hours was received at no charge to the Bureau. Accomplishments under this program included:

Posting of closed areas, exterior boundaries, and replacing no-litter signs.

Clean up and maintenance of access areas and boat launching ramps.

Litter patrol of sand-bar beaches along 30 miles of river.

Informational and recreational sign renovation.

Fabrication of fram cross member for large refuge recognition sign on Cassville District.

Clearing and clean up and baiting the rocket-net banding site.

General maintenance and clean up of service facility and grounds.

Construction and placement of wire swim-in traps for wood duck banding.

Fabrication of 50-gallon drums into trash cans for use on access sites.

Preparation and set up of wood duck nest structure exhibit for Wisconsin Farm Progress Days conservation demonstration.

Removal of ice shanties and other debris left on district after ice fishing season.

Preparation of numerous decorative and artistic wildlife oriented items for display in district office.

Brushed out path along 100 yards of public fishing area near the I-90 access.

This work force functioned well and was considered an important asset in district operation and maintenance.

Other Jobs Accomplished: Initial survey work was completed by regional engineers for an improved entrance road and boat access at the Lone Tree on Mud Lake, in Trempealeau County, Wisconsin.

The Northern States Power Company completed a dike project around their sub-station by connecting it to the already existing dike around the district service facility. It is hoped this structure will provide additional protection during periods of high water.

B. PLANTINGS: None this year.

C. COLLECTIONS AND RECEIPTS: None this year.

D. CONTROL OF VEGETATION: Two requests for spraying of aquatic plants were received during the year. One requested the mechanical removal of Vallisnaria along portions of the Brice Prairie shoreline. Investigation with Wildlife Biologist Green did not reveal any significant problem and the request was denied.

A second request was for experimental Vallisneria control on the north end of French Island. The second request was approved for experimental use of Hydrothol 47 pellets on a small area. This was conducted under the auspices of the Wisconsin Department of Natural Resources. A Department of Natural Resources biologist reviewed the results and determined that control of Vallisneria and Ceratophyllum was very limited and discouraged future use of this chemical because of its high toxicity to fish life. Mechanical removal was encouraged by this biologist, when problems of a similar nature result.

In previous years persons desiring to use herbicides for aquatic plant control,applied directly to the State of Wisconsin for permission and the refuge may or may not have been advised of the situation. During 1971, channels of communication were opened so that now, refuge comments pro or con will enter into decisions prior to the issuance of state permits.

E. PLANNED BURNING: None this year.

F. FIRES: None this year.

IV. RESOURCES MANAGEMENT

A. GRAZING: Three permits covering 83 animals for 257.45 animal unit months were issued in 1971. Revenue from this use amounted to $257.45 all of which went to the Corps of Engineers. A fourth permit was issued but the permittee never turned his animals out to pasture. A down payment of $35.00 was received and has not been returned to date.

B. HAYING: None this year.

C. FUR HARVEST: On the basis of fur catch reports submitted by trappers, the estimated take of furbearers during the 1970-71 season is shown as follows:

1970-71 Furbearer Season Statistics

Species	No. Taken	Total Price	Average Price
Muskrat	29,275	$24,645.07	$ .84
Mink	23	138.00	6.00
Beaver	347	3575.50	10.30
Red fox	5	20.00	4.00
opossum	4	-	-
raccoon	11	26.25	2.39

Total number of permits sold - 262
Total income to trappers - $28,404.32

The above figures represent a substantial drop from the 1969-70 muskrat take of 41,000 and total trapper income of $51,500.00. The reduced figures reflect the unfavorable harvesting conditions experienced during the 1970-71 season. For the 1971-72 season, 304 permits have been issued, representing 12,971 trap tags. Refuge revenue amounted to $1297.10. This is an increase of 42 permits and 2315 trap tags over 1970-71.

The current muskrat crop is believed the equal or larger of 1971. Conditions are not so harsh and prices are up some 60-70% over the 34¢ offered in 1970-71. It is expected that total take will be up during the current season.

D. TIMBER HARVEST: None this year.

E. COMMERCIAL FISHING: Set line, gill net, and seine operations were conducted by a number of part-time fishermen throughout the year. Success again was generally good but rough fish prices remain extremely low. No refuge permit is required for this activity.

F. OTHER USES: One cabin site at $25.00 per year.

Two permits for a concession stand and latrines in conjunction with the operation of fishing floats below lock and dam 6 and 7 at $50.00 each.

Eleven houseboat mooring site permits at $10.00 each.

Permit to Northern Natural Gas Company for a pipeline metering station.

Permit to Houston County, Minnesota for development of a park and recreation area.

Permit to the Badger State Sportsmens' Club Inc. of La Crosse, Wisconsin for a waterfowl propagation project on Goose Island. From the project 3900 mallards and 30 immature Canada geese were raised and released. The ducklings were acquired one day old from a commercial game farm and released at six weeks of age. The geese were part of their captive flock. Efforts are expected to continue toward similar goals in 1972.

Permit to remove gravel from government land at 10¢ per cubic yard. A $100 guarantee deposit in accordance with this requirements of this permit has been secured. The permittee did not remove any materials in 1971 and it is expected that he will seek cancellation in 1972.

V. FIELD INVESTIGATIONS OR APPLIED RESEARCH

A. WOOD DUCK MANAGEMENT: Flight counts, weekly population estimates, artificial nest structure use, brood counts and production estimates, fall roost counts, and banding are activities conducted in this study.

Spring flight counts were conducted in April as an index to nesting wood duck populations. Results of these counts for the past five years are shown as follows:

Location	Time of Count	1967	1968	1969	1970	1971
Wildcat Creek	AM	9	47	80	29	34
Root River	PM	31	37	101	8	55
Dakota Creek	AM	4	2	8	11	13
Coon Creek	AM	23	48	63	16	11
Total		67	134	252	64	113

Weekly population estimates were carried out in conjunction with routine waterfowl inventories. Both peak numbers and total use were up by 71% and 148% respectively. Counts during late spring and early summer showed resident population to average about 15% above the 300 present during the same period in 1970. Fall use too was much above last year. This was felt due to an earlier arrival of migrants, the bulk of which remained on the district for a longer period of time.

Wood duck production was derived from brood count transect data and checked against the percentage of immatures encountered during banding operations. Production estimates for the area are at best difficult to obtain. Wood duck production was estimated at 1800, a 29% increase over last year.

Because of a change in managers, wood duck nest structures were not able to be located nor their use evaluated. Plans call for location, inspection, and use evaluation of such structures on an annual basis.

Fall roost counts were not conducted during the year.

Banding operations were begun in late July with the placement of five swim-in funnel traps in the Target Lake area. Beaver activity soon became apparent and rising water levels forced the removal of the traps. Four traps were re-located and banding of wood ducks conducted 8-24 August.

It was apparent that the district quota of 200 woodies (one-sixth of that total to be locals) was not being reached so a site was prepared for use with the rocket-net. Two shots were made with 95 woodies caught. The swim-in traps accounted for an additional 108 birds making a total of 203 caught and banded. Almost didn't make it! Of this total, only eight were locals.

The following information was obtained from this banded sample:

Total banded - 203
Number locals banded - 8 (3.95% of total)
Number immatures banded - 161 (79.30% of total)
Number adults banded - 34 (16.75% of total)
Male : female (adult) - 32 : 2
Male : female (immature, includes locals) - 84 : 77
Male : female (total sample) - 120 : 83

The conspicuous absence of adult females in the banded sample occurred again as it has in past years. Apparently after brood responsibilities have terminated, adult females become less gregarious and this habit may account for the few encountered during banding.

In the course of banding operations, a hatching year female with a perforated lower mandible was encountered. The tongue was protruding through the opening. The distal end of the tongue had become calloused or scar-like, apparently the result of irritation during feeding. The swollen end prevented withdrawal of the tongue to its proper position. The bird appeared healthy and in no obvious distress.(R-7-71-33 MAK)

B. HERON ROOKERY INVENTORY: In an effort to obtain better information relative to abundance, nesting, and production of great blue herons, inventory methods are currently being refined. Since great blue herons represent a peak in an aquatic food chain, they may well function as an indicator to aquatic environmental quality.

(reprint from district slide)

An attempt was made to locate all nest trees in the Root River Rookery. Each tree was blazed and a serially numbered metal tag attached. Trees were recorded by number and the number of nests for each tree noted. A total of 200 nest trees were located. This represented a total of 704 nests. One tree had 28 nests in it.

Sampling methods will be developed for use in the spring concerning numbers of active nests, rookery population, species useof the nests (common egrets also nest here), and production estimates. It is felt that such a method is a means in obtaining more meaningful data.

A second, smaller rookery exists on the district. Plans call for similar activities to be carried out on this area.

VI. PUBLIC RELATIONS

A. RECREATIONAL USES: In tabular form the recreational use picture of the district appeared as follows:

	Fishing	Waterfowl Hunting	Deer	Other	Other W-W Oriented	Non W-W Oriented	Total Activity Visits
DEC, JAN, FEB	19,717	20	40	451	2,072	1,223	23,523
MAR, APR, MAY	35,197	-	-	-	21,060*	14,778	71,035
JUN, JUL, AUG	155,300	-	-	-	91,672	287,230	534,202
SEP, OCT, NOV	41,140	32,815	570	1140	22,660	61,845	160,170
Total activity visits	251,354	32,835	610	1591	137,464	365,076	788,930

* included 10,855 attendance at Sport-O-Rama

There were several areas of significant difference in public use as compared to 1970. Fishing, individually the number one activity on the district, decreased by nearly 22% to 251,354 visits. Even with unseasonably cool weather which reduced July use, total activity visits for wildlife-wildlands oriented, and non-wildlife-wildlands oriented activities were up by nearly 47%. This was surprising since this total included the water-oriented activities which account for so much of July use. Waterfowl hunting, as expected, increased by 23%.

The estimated total of activity visits on the district was 788,930. This represented 544,087 actual visits since many individuals participated in more than one activity during their stay. It appeared that the 21.6% drop in actual visits was due in general to a decrease in fishing use related to this year of high water, and an unseasonably cool July and August, the two months of heaviest use. It seemed that although fewer people visited the district, those that did participated in more individual activities per visit.

Continued good habits with respect to littering were noted on the part of most users of the district. Most individuals were well aware of anti-litter programs in thought if not actually in deed. Still a few "hot spots" developed and short periods of intensive enforcement had their desired effect.

By the end of the year, there were only 200 fishing shanties out on the ice. This was well below 1970 and may be the result of an unseasonably warm December.

B. REFUGE VISITORS: Official visitors to the district were:

NAME	AFFILIATION AND PURPOSE	DATE
Ken Brown	La Crosse Tribune - Refuge Story, Kerschbaum's arrival.	1/15
Aaron Husmann	Dresbach Information Center, Minn. - Visit.	1/27
Gerald Updike	Necedah NWR - Visit	2/3
Stan Zschomler Larry Thomas Terry Gladwin	BSF&W-River Basins - Flood Plain Project Survey for La Crosse, Wisconsin	2/4
Dick Johnston	BSF&W-Engr, Mpls - Engineering for Blacktop work and boat landing.	3/31
Dick Johnston	BSF&W-Engr, Mpls - Engineering for Lone Tree Boat Access	5/5
Ken Brown	La Crosse Tribune - Refuge story, Heron Rookery	5/11

NAME	AFFILIATION AND PURPOSE	DATE
Don Powell	BSF&W-Engr, Mpls - I-90 boat access	5/27
Henry Franks	Boathouse permittee - permit discussion	7/29
Don Lacey	BSF&W-Fish Control Laboratory, La Crosse - Land discussion	8/8
Quentin Kagel	Commercial fisherman - permit discussion	8/8
Boyd Dacy	City boathouse inspector, La Crosse - boathouse regulations discussion	8/12
Ken Brown	La Crosse Tribune - Refuge story, wood duck banding	8/12
Jim Holmlund	Free-lance photographer, Cannon-net story for TV 19.	8/24
Ken Brown	La Crosse Tribune - Refuge story, closed area regulations	8/30
Earl Eliason George Griffith Clarence Nielson	BSF&W-Engr, Mpls., Griffith Const. Co., Hector Const. Co. resp. - Pre-construction conference for I-90 access	9/1
Iver Benson	Corps of Engineers, St. Paul - Boathouses	9/9
Al Jahndt	United Fund, La Crosse - contribution	9/17
Bill Kroll	Mississippi River Planning Commission - Closure of Goose Island	10/4
Ed Hayek	Permittee - boathouse permit	10/10
Earl Eliason	BSF&W - Engr. Mpls. - I-90 Access construction	November-December during construction

In addition to the above numerous visits were received from area personnel of the Wisconsin and Minnesota conservation departments and refuge staff members from the Winona, Minnesota headquarters.

C. REFUGE PARTICIPATION: (parentheses show number in attendance)

8 January - Attended the Eric Lawson retirement banquet at La Crosse.

27 January - Attended meeting relative to proposed floodplain requirements for city of La Crosse.

14 February - Attended Badger State Sportsmens' Club fishing derby at Goose Island.

17 February - Attended Upper Mississippi River National Recreation Area Study Proposal Meeting at La Crosse.

25 February - Attended Rural Environmental Assistance Program Meeting sponsored by ASCS.

1 March - Attended Wisconsin Farm Progress Days meeting.

5-7 March - Set up and assisted with Bureau exhibit at the La Crosse Sport-O-Rama (10,855).

13 March - Assisted in a wood duck nest box project with Boy Scout Troop #20.

22 March - Attended the La Crosse County Conservation Conference.

23 March - Gave talk and showed film to Franklin School (225).

24-25 March - Gave talk and showed film to Spence School (125).

25 March - Conducted refuge program for Roosevelt School (225).

26 March - Conducted program for Jefferson School (180).

28 March - Accompanied La Crosse Audubon Society on field trip along Dam #8 (30).

29-30 March - Attended Refuge Objectives Workshop at Winona, Minnesota.

3-4 April - Conducted refuge open house near Stoddard, Wisconsin (247).

5 April - Attended Farm Progress Days conservation exhibit meeting.

10 May - Attended general enforcement meeting of Iowa, Wisconsin, and Minnesota personnel at Whitewater State Park, Minnesota.

17 May - Conducted program for Fauver Hill School (30).

20 May - Accompanied Refuge Manager Gray to meeting with Houston County Board and prospective concessionaire at Brownsville, Minnesota.

25 May - Assisted in conducting some members of the National Audubon Society Convention on tour of the Root River Rookery.

26 May - Attneded Farm Progress Days conservation exhibit meeting.

27 May - Attended meeting of Gopher State Sportsmens' Club.

28 May - Presented program to Logan Jr. High 9th grade civics classes. (128)

1 June - Conducted slide talk for the West Salem Rod and Gun Club.

3 July - Assisted Badger State Sportsmens' Club in the release of 3900 mallards as the finale to their annual propagation project.

7-8 July - Assisted in conducting Root River Rookery tour for Albert Lea Jr. High. (65)

13-15 July - Set up and participated in wood duck nest structure exhibits for Wisconsin Farm Progress Days, West Salem, Wisconsin. (1000)

16 July - Assisted in rookery tour for La Crescent High biology Class (11)

23 July - Attended the Ken Krumm retirement dinner at Winona, Minnesota.

27 July - Spoke at Wisconsin Department of Natural Resources regarding programs on the Upper Mississippi NWR, La Crosse District.(30)

8 August- Spoke and showed film to social hour of Good Shepard Luthern Church. (20)

12 August- Assisted Ken Brown, La Crosse Tribune with story of district banding program.

24 August- Assisted Jim Holmlund in story on rocket-net banding for channel 19 TV.

21 September- Attended Wisconsin DNR Law Enforcement Workshop at Wildcat Mountain State Park, Wisconsin.

22 September- Attended meeting for Iowa, Wisconsin,,and Minnesota conservation personnel regarding hunting regulations and enforcement at Yellow River State Forest, Iowa.

30 September- Completed Defensive Drivers course at WWTI in La Crosse.

5-8 October- Attended PPBE workshop at Winona, Minnesota.

28 October - Presented refuge revenue sharing checks to Houston County, Minnesota and La Crosse County, Wisconsin county board chairman.

17 November - Conducted field trip to Goose Island for Hintgen School 3rd Grade (80).

13 December - Presented program to the La Crosse Audubon Society (20)

18 December - Assisted the La Crosse Audubon Society in the annual Christmas bird count.

D. HUNTING: Waterfowl hunting, primarily duck hunting, represented the bulk of the hunting use received by the district. Opening weekend pressure for waterfowl hunting was some 10% higher than in 1970. Hunter pressure declined substantially after the first week but by the third week of the season rose again in anticipation of the "northern ducks." There were enough birds taken or at least seen to keep pressure relatively constant up until the last week of the season. While general success was below that of last year, there were good flights of birds on the district all through the season. The spotty success experienced served as a flickering enticement as hunters doggedly continued. This was a season of mixed emotions with some happy, some disgruntled, but all willing to come back again. Total hunting visits were up by 23% and total estimated kill by 24%.

The follwing data reflect a profile of the season:

	1970	1971
Hunters checked opening day	191	491
Ducks checked opening day	348	1146
Cars at Goose Island opening day	430	490
Total district car count opening day	-	1770
Duck Stamps sold by La Crosse Post Office	3814	9300*
Average ducks per hunter for season	1.82	1.19
Total waterfowl hunting days	26,470	32,835
Total estimated kill	34,000	42,246

* Represents all duck stamp sold through La Crosse Post Office in this area and is not directly comparable to 1970.

UM-13

Bag Check Summary of Species Taken
Upper Mississippi River Wildlife and Fish Refuge La Crosse District
Period: 1971

	1969	1970	1971
No. hunters checked	320	1211	2346
No. ducks checked	499	1570	2787
Average ducks per day	1.56	1.29	1.19

Species	No.	%	No.	%	No.	%
Mallard	186	37.2	603	38.41	906	32.51
Black			11	.70	26	.93
Gadwall	13	2.6	19	1.21	33	1.18
Baldpate	65	13.0	259	16.40	251	9.01
Pintail	6	1.2	41	2.61	55	1.97
G.w.teal	12	2.4	81	5.16	152	5.46
B.w.teal	85	17.0	257	16.37	812	29.4
Shoveller	3	.6	3	.19	3	.11
Wood duck	67	13.4	207	13.19	366	13.13
Redhead			7	.45	11	.39
Ring-neck	5	1.0	17	1.08	41	1.47
Canvas-back	39	7.8	20	1.27	26	.93
Scaup	11	2.2	29	1.85	85	3.05
Golden-eye	1	.2	4	.25	3	.11
Buffle-head	4	.8	9	.57	11	.39
Ruddy			2	.13	1	.04
Mergansers			1	.06	5	.18
Scoter	2	.4				
Old squaw						

Hunters took ducks as follows:

4*	16	5.0	42	3.47	74	3.16
3*	56	17.5	129	10.65	187	7.97
2	80	25.0	244	20.15	371	15.81
1	107	23.4	359	29.65	703	29.97
0	61	19.0	406	33.69	926	39.47
8			2	.16		
7			5	.41		
6			7	.58	60	2.56
5			15	1.24	25	1.06

*Note: 1971 daily limit was four ducks. In addition there were special regulations for B W teal and scaup allowing a bonus of 2.

The size of the sample of hunters contacted during the season increased markedly in 1971. This was due in great part to the more intensive survey work of the Wisconsin Department of Natural Resources and their cooperation is greatfully acknowledged.

Those who continued to hunt geese after the duck season closed were few and far between. Still there were enough geese to lure some of the more hardy hunters into a challenge. Success was very low.

The hunting of upland game, big game, and other migratory birds continued to provide recreation for a limited number. There was a 15-20% increase in the deer harvest for the local river counties, but only little of this activity occurred on the district.

E. VIOLATIONS: Refuge personnel alone and in cooperation with Wisconsin and Minnesota Conservation Officers made the following apprehensions:

Offense	Number	Disposition
Littering	3	$34 each
Littering	3	$29 each
Littering by towboat	1	$50
Commercial signs on refuge lands	1	Removed signs - no prosecution
Illegal bait on set line	1	$59
Overlimit of ducks	1	$39
Hunting waterfowl during closed season	2	$24
Hunting without state license (Minnesota)	1	$50
Houseboat moorage trespass	1	$100
Taking protected bird (grebe)	1	$14
Wanton waste migratory birds (coots)	3	$39 each
Hunting in closed area	3	No prosecution - Juveniles

During the week of 25 December, vandals killed eight Canada geese at the Badger State Sportsmens' Club project. All were geese of mated pairs and the effect on the coming year's production may be most detrimental. This action has brought increased support that the area be closed to firearms on a year around basis. The Goose Island is currently closed only during the duck season after which upland game and big game may be

pursued. A proposal has been drafted and submitted to the refuge to seek closure to hunting and possession of firearms for the area. In consideration of the limited hunting opportunity afforded, the acts of vandalism frequently encountered, and the proximity to an adjacent county park, the closure is in general viewed favorably.

VII. OTHER ITEMS

A. OTHER ITEMS OF INTEREST: On 8 January, Eric Lawson, manager of the La Crosse District for some 20 years, retired. A farewell banquet was held at the Holiday Inn of La Crosse. Quoted from the speaker's stand that evening was a letter written to Eric which said in part, "If the animals of the woods spoke man's language, and the birds sang a song we could understand, they'd say thanks so very much Eric Lawson! Come back and visit us soon." Would, that at the end of our careers, we are all so thought of by our charges.

Robert Litke served as wildlife aid during the summer of 1971. Bob was from Pierz, Minnesota. Through competitive examination and evaluation under the auspices of the Issac Walton League, Bob was selected as an Issac Walton Referral. Bob had considerable banding experience with both wood ducks and mourning doves prior to his arrival. He was an eagar and enthusiastic assistant, willing to work at both enjoyable and not so enjoyable tasks. Bob returned home at the end of the summer to begin his freshman year at Bemidji State College, Bemidji, Minnesota. Our thanks to Bob for all the help.

As in past years, the La Crosse County furnished the district with summer help in the form of Neighborhood Youth Corps enrollees. Although we started with nine, by the end of the summer we were down to seven. A hard working crew they were, and they provided few problems and much work.

Two work-study students, both girls, worked on the district. Terri Anderson served in the office, and Virginia Niles supervised the NYC girls. Both girls had worked here before and provided much welcome assistance.

Linda Boardman, an NYC enrollee, is currently serving as the office clerk. The fact that the annual narrative can be completed at all is due in great part to her typing assistance.

August was vehicle replacement time. Our 1964 Plymouth was transformed into a 1971 Plymouth V-8 with automatic transmission. We can now pull our boat up access ramps without burning up clutches or launching the vehicle.

On 7 January the new district manager arrived ready and eager after a tour of duty in the U.S. Army. After a year on the district, both my family and I can truthfully say that it is good to be back with the ducks again.

The clearing of a site for use with the rocket net might have qualified as one of the "Twelve Labors of Hercules." The results were worth it however, for the rocket net accounted for nearly 50% of the wood ducks that were banded. (R-7-71-6A and 7A MAK)

The annual refuge open house was held near Stoddard, Wisconsin on 3-4 April. Although cold and blustery, 247 people stopped to look at and talk about wildlife. A total of 23 different bird species were observed, of which 14 were waterfowl. The highlight of the open house was 5 egrets flying just in front of the observation area. (R-3-71-1 and 3 MAK)

July 13-15 were Wisconsin Farm Progress Days. The district set up a wood duck nest structure exhibit as a part of a conservation demonstration area sponsored by federal and state natural resources agencies. Although Farm Progress Days attendance was 100,000 plus, the exhibit area was so far away that only some 1000 people even bothered to walk over to it. In addition, prior to opening, cattle got into the exhibit, knocking over boxes, using the predator guards as scratching posts, eating leaflets, and tearing up informational signs. I suppose for us it should have been called Farm Progress "Daze." (R-5-71-7 and 9 MAK)

A refuge exhibit was set up for the La Crosse, Wisconsin Sport-O-Rama. Live birds, wildlife art in the form of paintings, duck stamp collection, and decoys, wildlife and refuge literature, and films were the features of the exhibit. An estimated 10,855 passed by the exhibit with 4100 stopping to watch the films. (R-1-71-8and10 MAK)

The 1971 summer crew. Much was accomplished with the help of these young people and our thanks to them all. From left to right: Bob Litke, Wildlife Aid, Steve Limpert, Terri Anderson, Dave Nordstrom, Eva Jackson, District Manager Kerschbaum, Jim Ammerman, Joe Stall, Jeff Russell, Linda Meyer, Virginia Niles. (R-7-71-9A MAK)

Linda Boardman, an NYC enrollee, is now serving as office secretary. Linda has performed yeoman service in the preparation of the narrative and her assistance has been most welcome. (R-12-71-10 MAK)

Due to increasing problems with litter, a strip 10 yards wide along 100 yards of public fishing area near the I-90 access was cleared of brush and undergrowth. Pitching of trash back into the bushes was thus made more difficult and the litterers' actions made more obvious. Additional trash barrels were provided. (R-8-71-1 MAK)

ICE FISHING AFTERMATH. One of the problems associated with ice fishing is the removal of shanties from the ice. Many are ramshackle affairs at best and are just pushed off along the shore, identification removed, and then..... the district's problem. These shanties were removed from refuge lands with NYC assistance. (R-1-71-16 MAK)

(R-5-71-11 MAK)

A phase of habitat management of which we were not aware until recently is the construction of pipe gates for wren nesting. Actually, no eggs were ever laid here. Whether this was a dummy nest, as wrens are inclined to construct, or human activity at the gate intolerable, we just do not know. The wren, later in the season, did build another nest in the other, less movable end of the pipe.

(R-7-71-4A MAK)

As reported in Section V, the great blue heron represents the apex of an aquatic food chain. As a result, this species may very well serve as a valuable index to aquatic environmental quality. Better and more intensive methods to survey this species are being derived so that more meaningful information on population and production can be obtained. (La Crosse Tribune photograph)

SIGNATURE PAGE

Submitted by:

Matthias A. Kerschbaum
(Signature)
Matthias A. Kerschbaum

Date: 27 January 1972

District Manager
Title

Approved, Regional Office:

Date: MAR 10 1972

James B. Monnie
(Signature)

ASST
Regional Refuge Supervisor

LANSING DISTRICT

NARRATIVE REPORT

UPPER MISSISSIPPI RIVER NATIONAL WILDLIFE REFUGE

Lansing District

January - December

1971

United States Department of the Interior

Fish and Wildlife Service

Bureau of Sport Fisheries and Wildlife

Box 128

Lansing, Iowa 52151

C O N T E N T S

I. GENERAL

A. Weather Conditions

Weather data from Lock & Dam #9, Lynxville, Wisconsin

MONTH	Precipitation Total	Precipitation Normal	Precipitation Snowfall	Temperature Max.	Temperature Min.	Temperature Mean Av.	Temperature Normal Mean Av.
January	1.49	1.06	19.60	38	-25	10.7	19.9
February	2.98	1.04	15.30	50	-30	19.6	22.5
March	1.35	2.16	7.75	73	5	30.8	33.1
April	2.25	2.59		80	18	48.6	48.1
May	4.29	3.39		82	30	57.1	59.9
June	4.58	5.01		94	50	74.2	69.6
July	1.85	3.86		89	46	70.3	74.4
August	.71	4.11		92	50	70.3	72.1
September	2.52	3.61		91	40	65.7	63.7
October	1.85	1.93		86	34	58.3	52.1
November	3.27	1.77	8.50	66	15	37.7	36.1
December	2.15	1.03	7.00	42	5	27.4	23.8
				annual	extremes	annual	averages
Annual Totals	29.29	31.56	58.15	94	-30	47.5	47.9

Temperatures were near normal for most of the year with the exception of January and December. January was extremely cold and December was exceptionally mild. Monthly precipitation deviated from the normal but the total for the year was near normal. Total snowfall exceeded the normal by some 30 inches. There was 25 inches of snow on the ground in early February. Some of the older folks claim the winter of 70-71 was one of the worst.

UM-1 Rev.
1964

B. Habitat Conditions
1. Water

POOL LEVELS

Pool No. 9 at Lansing, Iowa Normal: 20.00

MONTH	HIGHEST LEVEL	LOWEST LEVEL	AVERAGE LEVEL	DATES OF HIGH LEVEL	DATES OF LOW LEVEL
January	20.24	19.62	19.87	5	17
February	20.55	19.66	20.01	22	4
March	22.40	20.16	20.94	31	11
April	26.88	22.25	24.43	19	30
May	22.00	20.02	20.97	1	22
June	21.76	20.02	20.79	1	22
July	21.76	19.68	20.37	1	28
August	20.14	19.78	19.92	17	24,25
September	20.16	19.64	19.91	12	15
October	20.20	19.76	19.98	20.31	11
November	21.46	20.23	20.96	10	2
December	21.02	19.98	20.42	28	15

The pool was 90% frozen over at the beginning of the year with the water level at 19.82 (normal : 20.00). A 8 mile section of the navigation channel below the Dairyland Power Plant at Genoa, Wisconsin was kept open by the heated water discharged from the power plant.

The pool level remained below normal until mid-February and then fluctuated slightly above normal until mid-March when it began to rise steadily due to runoff. The highest level reached was 26.88 on April 19th. Although this much water is considered to be flood stage, there wasn't enough to cause any damage.

By May 22 the pool was back to normal again but it rose immediately and remained above normal until mid-July. From mid-July through October it was slightly below normal. Above normal precipitation in November and December caused abnormally high water during those months. By years end most of the pool was frozen over with the exception of some areas where strong current kept ice from forming. The Dairyland Power Plant was closed for repairs and there was no heated water being discharged into the navigation channel.

2. Food and Cover

Waterfowl food supplies and availability were excellent again this year. Submergent and emergent growth was excellent and local and migrating ducks had an abundance of food available. Many mallards also fed in the adjacent cornfields in the spring and late fall. High water during the fall made some acquaties in the north half of the pool unavailable but, at the same time,it flooded the timber and made the mast available.

Deer, upland game and furbearers had fair to excellent food and cover conditions. Many muskrats were forced to abandon their houses during the fall because of high water but this didn't seem to have any detrimental effect. The water level was back to normal before the pool froze over. Some trappers were concerned about the muskrats during the fall of 1970 when they were forced out of their houses by high water at the time the pool was freezing over. This didn't seem to effect them severely because there was a good breeding population the following spring.

II. WILDLIFE

A. Migratory Birds

1. Waterfowl

Ducks: From the first of the year until late February the district duck population consisted of the usual winter complement of 100 mallards, goldeneyes and american mergansers were the first spring migrants arriving in late February. In late March, blacks, wood ducks, ringnecks, canvasbacks, and scaup began to arrive. The spring peak population of 59,385 occurred the week ending April 10, one week earlier than 1970. All species listed on the NR-1 were present with 35,000 scaup, 4,000 canvasbacks, 3,500 ringnecks, and 5,000 mallards making up the bulk of the birds. Duck numbers then decreased sharply to a breeding population of 1,920 the week ending May 22. Total days use for the January - April period was 903,496, a 17% decrease from 1970. Wood ducks, ringnecks, and ruddy ducks were the only species that showed an increase in days use.

The summer breeding population consisted of 500 mallards, 10 blacks, 150 blue-winged teal, 1,210 wood ducks, and 50 hooded mergansers. This was a 25% increase over 1970. Wood ducks showed a 79% increase and mallards and blue-winged teal decreased 20% and 25% respectively. Estimated

production was 1,400 mallards, 20 blacks, 150 blue-winged teal, 3,340 wood ducks and 100 hooded mergansers. This was a 54% increase from 1970 and was due to the increase in the wood duck breeding population.

Fall migrating blue-winged teal first arrived during the week ending August 14, one week later than 1970. Baldpate were the next to arrive during the week ending August 28. Dabblers then increased steadily. The first divers arrived the first of October. The peak fall population of 45,700 occurred the week ending October 16. The bulk of these were made up of 15,000 scaup, 2,000 ringnecks, 20,000 baldpates, and 5,000 mallards. The next highest peak population of 41,750 occurred the week ending November 20 when 1,000 goldeneyes, 20,000 scaup, 12,500 canvasbacks, 3,000 ringnecks and 4,000 mallards were present. By years end the duck population was down to 100 mallards and 25 american mergansers. Total days use for the September - December period was 2,724,470, a 41% increase from 1970. This was a result of increased peak numbers and a mild fall which allowed the birds to remain longer. Total days use for the year was 4,128,011, a 21% increase from 1970.

Geese: The first spring migrating canada geese arrived the first week in March and snows and blues arrived the week ending April 10. The peak spring population consisted of 210 canadas during the first week in April. All geese were gone by May. The first fall migrants arrived the week ending September 25 and the last were observed the week ending December 11. The peak fall population was 610 during the week ending October 9 and consisted of 200 each of canadas, snows, and blues and 10 cackling geese. Total days use for the year was 6,630, a 22% decrease from 1970 and the lowest since 1968.

Swans: Whistling swans were present each week in April and peaked at 70 during the third week. They were present during four weeks in the fall from early October to late November. The peak population was 15 in early October. Total days use was 575, a 39% decrease from 1970 and the lowest since 1968.

Coot and Gallinule: Coot peaked at 6,000 during the spring and 50,000 during the fall. The breeding population was 400 and production was 200, the same as 1970. Total days use was 1,789,000, a 17% increase from 1970. This was the result of a mild fall which allowed the coot to remain longer. Gallinules peaked at 250 during the spring and 400 during the fall. The breeding population was 100 and production was 100, the same as 1970. Total days use was 33,600, a 14% increase over 1970.

* Waterfowl Peak Numbers

	1968	1969	1970	1971
Ducks	27,200	43,280	46,525	45,700
Geese	165	650	325	610
Swans	15	25	130	70
Coot	37,700	50,000	50,000	50,000
Gallinule	1,145	600	600	400

* Weekly totals from District NR-1 forms

* Waterfowl Days Use

	1968	1969	1970	1971
Ducks	2,246,775	2,716,645	3,393,570	4,128,011
Geese	1,763	11,650	8,485	6,630
Swans	200	700	945	575
Coot	249,100	1,544,920	1,600,900	1,789,900
Gallinule	60,230	52,675	29,400	33,600

* Quarterly totals from district NR-1 forms

2. Other Water Birds

Egrets: Migrating american egrets were first observed the week ending March 27 and were last observed the week ending October 30. They arrived and departed one week earlier than in 1970. Peak populations were 200 during the spring and 300 during the fall. Production was estimated to be 100 based on 50 egret and 100 great blue heron nests in the rookery. Production was actually much greater because we found in November that the rookery was much larger than the area we had been censusing. We numbered each tree in the rookery and recorded the number of nests / tree and found that the rookery contained 814 nests. The trees were numbered and the number of nests recorded so we would be in a position to participate in the 1972 nation-wide great blue heron survey and possibly the north american nest-record card program.

Cattle egrets were observed twice during the spring at the Genoa National Fish Hatchery adjacent to the refuge.

Grebes: Pied-billed grebes were more numerous this year. The peak fall population was 300 compared to 150 last year. Grebes were present from mid-March to mid-December. No horned grebes were seen this year.

Herons and Bitterns: Great blue herons were present from mid-March to late November. The peak spring population was 400 and the peak fall population was 700, the same as 1970. Production was estimated to be 200, the same as 1970, based on 100 heron nests in the heron and egret rookery but it was found later that production was actually much higher (see egret section). The peak population of little green herons occurred in September and was estimated to be 600, the same as 1970. Black and yellow-crowned nigh herons and american and least bitterns were present in small numbers similar to 1970. There is supposed to be a yellow-crowned rookery near New Albin but it hasn't been found yet.

Cormorants: Double-crested cormorants are observed in small numbers only during the migration seasons. They peaked at 30 during the spring and 10 during the fall.

Loons: No common loons have been observed since the fall of 1968.

Gulls and terns: Ring-billed gulls peaked at 1,500 during the spring and 2,000 during the fall. The spring peak was 1,000 lower than 1970 and the fall peak was 500 lower. Ring-bills were present from mid-March to mid-December. Common and black terns were present in small numbers again this year. No franklin gulls or caspian terns were observed this year.

Others: Sora rails were present from mid-April to mid-November. The peak population was estimated to be 600 in late September.

3. Shorebirds

Common snipes: Snipe were present all year. The peak population was estimated to be 600 in late September, the same as 1970.

4. Doves

Mourning doves: Doves were present from late March to early December. The peak population of 500 occurred in August and early September and was 200 higher than 1970. The breeding population was slightly higher this year and production was estimated to be 300 compared to 250 in 1970.

1965
UM-9A

Refuge: Upper Mississippi, Lansing, Iowa
Period: Calendar Year 1971

B. Upland Game Birds

SPECIES	POPULATION JAN. 1	YOUNG PRODUCED	NUMBER STOCKED	GREATEST NO. PRESENT	TAKE	LOSS	POPULATION DEC. 31
Ring-necked Pheasant	none observed since December 1970						
Ruffed grouse	40			100	5	10	50
Bob-white quail	none observed since January 1969						
Gray partridge	no record of observation in this district						
Wild turkey	none observed since December 1966						

The refuge does not offer good grouse habitat and normally grouse from the adjacent uplands use the refuge only intermittently. However, grouse are now at or near their cyclic high and several were observed deep in the bottoms during the fall.

C. Big Game Animals (White-tailed deer)

POPULATION JAN. 1	YOUNG PRODUCED	GREATEST NO. PRESENT	HUNTER TAKE	LOSSES	POPULATION DEC. 31
30	20	75	5	0	25

Most deer leave the refuge when there is deep snow or high water and return when the snow melts or the water level drops. This means that deer are most plentiful from May until snowfall with the peak population occurring in late fall.

UM-14
Rev.
1965

Refuge: Upper Mississippi, Lansing, Iowa
Period: Calendar Year 1971

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

SPECIES	POPULATION JAN. 1	YOUNG PRODUCED	GREATEST NO. PRESENT	TAKE	CON-TROL	LOSS	POPULATION DEC. 31
Muskrat	22,000	200,000	68,000	30,000	0	149,000	25,000
Mink	100	100	150	20	0	60	100
Beaver	1,875	1,000	2,500	175	0	300	2,400
Otter	15	15	25	2	0	3	15
Raccoon	300	500	600	50	0	200	350
Red Fox	45	30	60	10	0	10	40
Gray Fox	10	5	15	2	0	3	10
Skunk	30	40	60	5	0	25	30
Cotton-tail Rabbit	300	300	400	25	0	200	300
Opossum	50	200	150	25	0	75	50
Gray & Fox Squirrels	200	350	350	50	0	300	200
Woodchuck	15	15	25	0	0	10	15
Badger							

Muskrats: The muskrat population is determined from house counts on 16 survey areas throughout the district. There were 1,049 houses counted in the survey areas this year compared to 656 in 1970. This was the highest since 1965. Two thousand pelts are aged each year to determine the adult to young ratip and this information, along with fur harvest figures, is used to determine breeding population, young produced, and losses. The

adult to young ratio this year was 1:3.87 compared to 1:4.44 in 1970. 1:3.11 in 1969, and 1:2.47 in 1968.

Beaver: The beaver population is estimated from the number of active lodges counted on three transect routes. There were 42 lodges on the transect routes this year compared to 39 last year. This was the highest count since the transects were begun in 1966. Low pelt prices are the main reason for the current high beaver population.

Population of all other mammals listed on the UM-14 form remained approximately the same last year.

E. Hawks, Eagles, Owls, and Crows

Hawks: Red-tailed hawks were present all year. They peaked at 100 in early October, a 50% increase from 1970. Marsh hawks were present from early April to mid-November and peaked at 10 in late September. Red shouldered and rough-legged hawks were probably present during migration periods but no definite observations were made.

Osprey: Osprey numbers were about normal. One osprey was present from early May to late June and the peak fall population was 3.

Bald Eagles: Eagle numbers were up considerably this year. The peak spring population was 60 (46 ad. and 14 imm.) compared to 22 in 1970. The fall peak was 39 (23 ad. and 16 imm.) compared to 18 in 1970.

The one pair of eagles that nest in the Reno Bottoms were successful again for the third year in a row. They raised 2 eaglets this year to bring the total to 5 since the nest was established in 1969. The nesting pair began adding sticks to the nest in mid-February and were incubating by March 25th.

Owls: Great horned and barred owls were present all year in approximately the same numbers as previous years. Their numbers vary between 30 and 80 each with the highest population occurring in the fall. Screech owls were present in small numbers all year.

Crows: Crows were present all year and peaked at 500 during the migration periods, the same as 1970.

Vultures: Turkey vultures were present from early April until late October and peaked at 40 in early September.

G. Fish

Sport fishing success was extremely poor until mid-February when the weather began to warm up. Thereafter, large catches of bass, bluegills

and crappies were rather common. Bluegill and crappie fishing was only fair during the summer but bass bit well throughout the summer and fall. Ice fishing success was excellent in December. Walleye fishing was generally good all year below the Genoa lock and was also good around the submerged wing dams from spring through fall.

H. Reptiles and Amphibians

There appeared to be no change in numbers or species this year. Abundant species included painted, softshell, false map, and snapping turtles, water and garter snakes, and frogs.

I. Disease

There were rumors of muskrats dying in the catfish country and Botsford Lake area in early November but an inspection of the area revealed nothing. No other indication of disease was noted.

J. Rare and Enlarged Species

None.

III. Refuge Development and Maintenance

The 6' x 10' state line sign was taken down to prevent it being damaged by high water in the spring. It was repainted after it was put back up.

The student assistant and two NYC enrollees accomplished the following: cleared the brush on the state line, replaced two dozen small state line signs, cleared the brush along the Millstone and Bad Axe landing access roads, replaced the refuge interpretive sign on Mt. Hosmer, replaced Coldsprings indentification sign, painted the two district boats, boundary maintenance posting, litter posting, litter cleanup, and took 30 partially submerged barrels out of Pickeral Slough.

The Bad Axe landing parking area received 75 yards of crushed rock and 5 yards of riprap along the launching ramp. Millstone landing received 15 yards of crushed rock to repair the holes in the road.

B. Plantings through F. Fires

Nothing to report.

IV. Resource Management

A. Grazing

One grazing permit was issued again this year for 90 AUMS of grazing from June 1 through August 31st on a 90 acre unit in Minnesota. Cash revenue was $90.00.

B. Haying

None

C. Fur Harvest

Fur Catch 1970-71

Species	No. reports	Catch	Value	Pelt average
Muskrat	110	19,123	$17,998.59	$ .83
Mink	6	7	45.50	6.50
Beaver	9	28	790.00	10.12
Raccoon	7	36	89.25	2.48
Fox	2	12	73.00	6.08

One hundred and fourteen trappers reported trapping in this district during the 1970-71 season. This number was approximately the same as the 1969-70 season. Trapping conditions were extremely poor during the 70-71 season. High water, thin ice and heavy snow frustrated the trappers to no end but the total catch was only 4,403 less than the 69-70 season. The beaver catch was 52 less than the previous season and the catch of mink, raccoon and fox was approximately the same. The average price / beaver pelt increased $1.89 over the 69-70 season but muskrat, mink, raccoon, and fox decreased $ .45, $2.33, $1.55 and $1.22 respectively.

A beaver season was allowed in the Minnesota portion of the district during the 70-71 season. This was the first season since 66-67. Beaver were plentiful but heavy snow prevented any serious trapping effort. A beaver season is allowed only once every three years in the Reno Bottoms to assure a good beaver population necessary to hold water in that area. The season bag limit was 10 in Minnesota, 20 in Wisconsin and no limit in Iowa.

A total of 134 permits were issued from the Lansing office for the current season (1971-72). This was 40 more than the 70-71 season. The increase was due partly to the closure of the refuge office at Praire du Chien but the rumor of high prices and many muskrats brought out more trappers.

Trapping conditions were generally good during the 71-72 season. The river stayed open into December and when the ice did form, it was clear enough so the muskrat runs could be seen easily. High water during the beginning of the season hampered some trappers but those that knew how to pole trap or use stools did well. Muskrat pelt prices were high, ranging from $1.25 at the beginning of the season to $1.75 at years end. Only a few catch reports are in for the 71-72 season but those that are indicate a high total catch.

D. Timber Removal

No timber was removed legally but 6 walnut veneer logs (2000 bd. ft.) were stolen from the Big Meadows area of the refuge on December 2. FBI agents recovered the logs and apprehended the violators. There were four individuals involved with two used as government witnesses against the other two. One got two years probation and the other is awaiting sentencing. 2400 bd. ft. of saw logs were left in the woods.

E. Commercial Fishing

Commercial fishing was only fair through 1971. Thin ice prevented fishermen from making seine hauls early in the year but they eventually were able to get on the ice and some hauls produced 165,000 lbs.. Catches of catfish were fair through the summer. High water and thin ice prevented much fishing from late fall through the end of the year.

F. Other Uses

There are 52 special use permits in effect in the district covering houseboats, boathouses, boat docks, and commercial fishing bases on Bureau and Corps of Engineers land. All structures under permit are inspected at least once a year for compliance of regulations. There are also 12 other permits covering access areas, cabin sites, barge moorage, power line right of way, boat livery, and fish float. One permit was issued for 10 cords of firewood.

V. Field Investigation or Applied Research

A. Wood duck nesting cylinders and modified cavities

One of the nine metal nesting cylinders was used by wood ducks this year, the same as 1970. A brood of 7 was successfully hatched from the one successful cylinder. All others were empty or used by squirrels, wasps, bees, grackles, or other birds.

All enlarged and / or modified cavities in the district have become unusable. There are no plans for any more.

B. Wood duck banding

Wood duck banding was a frustrating activity again this year. We attempted to catch locals in swim-in traps but we were constantly plagued with fluctuating water levels and raccoons. We finally abandoned the swim-in traps after catching only 10 ducks, including 4 locals. We then shot the cannon net three times catching 30, 8, and 31 ducks for a total of 69. It seems that catching wood ducks is getting more difficult each year. Anyway, we are catching less each year. The wood ducks we banded included:

	AHY	HY	LOCAL	TOTAL
Male	6	30	1	31
Female	1	37	4	42
	7	67	5	79

C. Wood duck flight counts

Spring flight counts have been conducted at three stations since 1963 to determine the district wood duck breeding population. The counts are conducted from the middle of April through the first week in May. The breeding population this year was 1,210, a 78% increase from 1970. Total numbers of wood ducks counted at the stations were:

	*1963	1970	1971
Crooked Creek	84	44	90
Village Creek	26	30	42
Wexford Creek	50	30	54

* Index year for breeding population

D. Wood duck roost counts

Fall roost counts have been conducted since 1965 to determine their value as an index to the fall wood duck population and it appears that they have no value. The crooked Creek station was nearly dry this year which accounted for the low count and the Village Creek station has been low since 1966. No suitable substitute areas has been found. The fall roost counts will probably be discontinued.

	1965	1966	1967	1968	1969	1970	1971
Crooked Creek	90	117	88	398		378	27
Village Creek	110	18	14	6		17	10

E. Waterfowl hunter bag checks

The average daily bag limit of ducks this year was 1.51 compared to 1.45 in 1970. The average daily bag on opening weekend was 2.04 compared to 2.26 in 1970. In previous years, the number and percentage of each species taken remained fairly constant. There were some noticeable exceptions this year. Baldpate decreased 7.51% and green-winged and blue-winged teal increased 7.22% and 14.65% respectively. All other species remained nearly constant. Refer to section VI, part D, table 1.

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11A

VI. PUBLIC RELATIONS

A. Recreational Use

1971	FISHING	MISCEL-LANEOUS	HUNTING			TOTAL DAYS USE
			DUCKS	DEER	OTHER	
Spring	13,400	745				14,145
Summer	72,695	82,965				155,660
Fall	42,160	12,735	15,100	60	45	70,100
TOTAL DAYS USE	128,255	96,445	15,100	60	45	239,905

Day Use Comparisons

Year	Fishing	Misc.	Hunting Ducks	Hunting Deer	Hunting Other	Total
1970	98,385	99,968	7,950	135	70	207,483

Hunting and fishing use is determined from periodic total car counts at all landings with sample area counts between the total counts. Miscellaneous use (swimming, boating, akiing, etc.) is determined from monthly total head counts and weekly sample area counts. We can offer no reason for the increase in fishing and hunting.

C. Refuge Participation

The district manager assisted at the LaCrosse Sport Show and rookery tour and made 15 film showings, including wildlife week, to schools, community club, Kiwanis, Sportsmen Club and 4-H club. No news releases were issued except to notify trappers that trap tags were on sale.

D. Hunting

Big Game: Deer hunting activity is never too high on the refuge and this year it decreased 55% due to Minnesota not having a season. Also, shell ice from high water prevented hunters in Iowa and Wisconsin from walking in the woods without excessive noise. Iowa's usual 3 day either sex season was cut to 2 days this year. Success dropped from 5 in 1970 to 3 this year. The two Wisconsin counties in the district had different seasons. Crawford county had a 3 day either sex season and Vernon county had a 2 day either sex followed by a 7 day bucks only season. Success was 2, the same as 1970.

Upland Game: Very few rabbits and squirrels are bagged on the refuge. Those that are are taken incidental to waterfowl hunting. One ruffed grouse was shot in the bottoms this fall, which is rare. It was also shot incidental to waterfowl hunting.

Waterfowl: Total hunting activity increased 101% over 1970. We are still wondering why. There must have been some implication that ducks were overly abundant because the season and bag limits were nearly the same as 1970. Anyway, the hunters sure showed up. A total car count on opening day showed a record 3,775 hunters in the district.

The waterfowl season was rated as poor to fair. The average daily bag on opening weekend was 2.04 compared to 2.26 in 1970 and the season average daily bag was 1.51 compared to 1.45 in 1970. Even though peak numbers were nearly the same as 1970 and days use increased 41%, high water in the upper half of the pool caused the ducks to move to the closed area and open water in the lower half of the pool where water levels were near normal and they were not accessible to the hunters. When the dam gates are open at both Lock & Dam #8 and #9, this causes high water in the upper half of the pool and below normal levels in the lower half. The flight of "northern" mallards (you know, those with orange feet) arrived just after the season closed. They stayed for a month, flying the hats off trappers and farmers picking corn. Iowa hunters are complaining that the season started too early. Last year they complained that it started too late. On and on it goes.

Iowa chose the point system again this year. The 50 day season, October 2 through November 20, was 5 days shorter than 1970. The only change from the 1970 point system was canvasbacks and redheads were 100 points each instead of 90. Shooting hours began at ½ hour before sunrise rather than sunrise as in 1970. This eliminated a major early shooting enforcement problem.

Wisconsin and Minnesota elected a 50 day season, October 2 through November 20, with a bag limit of 4 plus a 2 blue-winged teal bonus from October 2-10 and a 2 scaup bonus from November 1-20. There was also a restriction of 2 wood ducks, 1 canvasback, and 1 redhead in the daily bag and 4 wood ducks, 1 canvasback, and 1 redhead in the possession limit. Some hunters voiced the opinion that the mallard regulations were too liberal (they said that after they had blasted 4 mallards).

E. Violations

Only 6 violators were apprehended in the district by bureau personnel this year compared to 58 in 1970. The reason, of course, is that our enforcement efforts are paying off. State wardens also had a slim year. The 6 violations included 2 littering, 2 hunting in the closed area and 2 timber trespassers.

F. Safety

All safety literature was reviewed as it was received and the refuge staff meetings included safety discussions. The student assistant had a vehicle addident on July 7 while he was making a left hand turn to the LaCrosse service facility. He was towing a boat trailer and flatboat and the boat was struck by an oncoming bus. Only slight damage occurred to the boat and bus.

UM-13

Table 1
Bag Check Summary of Species Taken
Upper Mississippi River Wildlife and Fish Refuge
Period: Fall 1971
Lansing District

	1969		1970		1971	
No. hunters checked	570		471		834	
No. ducks checked	893		684		1,260	
Average ducks per day	1.57		1.45		1.51	
Species	No.	%	No.	%	No.	%
Mallard	241	26.99	202	29.54	306	34.28
Black	14	1.57	5	.73	4	.32
Gadwall	27	3.02	3	.44	4	.32
Baldpate	174	19.50	78	11.40	49	3.89
Pintail	26	2.91	12	1.75	15	1.19
G.w.teal	70	7.84	44	6.43	172	13.65
B.w.teal	93	10.19	73	10.67	317	25.16
Shoveller	7	.78	2	.29	2	.16
Wood duck	169	18.61	182	26.61	319	25.32
Redhead	4	.45	0	0	6	.48
Ring-neck	20	2.24	11	1.61	1	.08
Canvas-back	23	2.58	13	1.90	11	.87
Scaup	15	1.68	45	6.58	43	3.41
Golden-eye	0	0	4	.58	9	.71
Buffle-head	9	1.01	3	.44	1	.08
Ruddy	1	.11	1	.15	0	0
Mergansers	0	0	6	.28	1	.08
Scoter	2	.22	0	0	0	0
Old squaw	0	0	0	0	0	0
Coot	73		77		23	
Hunters took ducks as follows:						
4* or more	71	12.46	39	8.28	78	9.35
3*	80	14.04	71	15.07	81	9.71
2	99	17.37	94	19.96	193	23.15
1	1.57	27.54	118	25.05	259	31.05
0	1.63	28.59	149	31.64	223	26.74

* Minnesota and Wisconsin daily bag limit was 4 + bluewing and scaup bonus
Iowa - point system - 10 birds possible

• JAN • 72

R. 3 - 71 - D.J.M.

Each year a few snowmobilers learn the hard way that the river is not always safe. Luckily, the water depth at this location was only 5 feet. The two riders included a man and his 65 year old mother-in-law (maybe the dunking was deliberate).

• JAN • 72

R. 4 - 71 - D.J.M.

Timber thieves left these tracks when they skidded 6 walnut veneer logs across the railroad tracks. FBI agents apprehended the thieves and recovered the logs.

SIGNATURE PAGE

Submitted by:

David J. Mickelson
(Signature)

Date: February 7, 1972

District Refuge Manager
Title

Approved, Regional Office:

Date: MAR 10 1972

James R. Mannie
(Signature)

ASST

Regional Refuge Supervisor

GUTTENBERG DISTRICT

NARRATIVE REPORT

UPPER MISSISSIPPI RIVER NATIONAL WILDLIFE REFUGE

GUTTENBERG DISTRICT

January-December 1971

Jeffrey P. Smith
District Manager

United States Department of the Interior

Fish and Wildlife Service

Bureau of Sport Fisheries and Wildlife

Guttenberg, Iowa

C O N T E N T S

I. GENERAL

A. Weather Conditions

MONTH	Precipitation Total	Precipitation Normal	Precipitation Snowfall	Temperature Max.	Temperature Min.	Temperature Mean Av.	Temperature Normal Mean Av.
January	1.05	.92	17.5	38	-25	12	8
February	3.27	.90	10.0	51	-28	20	17
March	1.22	1.96	6.0	75	3	31	38
April	2.28	3.46	Tr	81	17	49	48
May	3.94	3.70	0.0	85	29	57	60
June	4.39	5.01	0.0	95	50	74	69
July	1.68	4.31	0.0	90	43	69	74
August	1.45	3.26	0.0	93	47	70	71
September	2.92	3.86	0.0	93	35	67	64
October	2.26	2.20	0.0	88	32	59	52
November	3.21	1.70	9.0	68	11	39	37
December	2.22	1.31	7.0	45	1	28	23
Annual Totals	29.89	32.59	49.5	95	-28	48	47

The abbreviation "Tr" indicates a trace.

Since the Guttenberg District Office is practically across the river from the Cassville District Office, the weather at Prairie du Chien, Wisconsin provides a better distribution. Therefore, the data was obtained from the Prairie du Chien weather station.

The precipitation for the year totaled 29.89 inches, a deficit of 2.7 inches. Precipitation during the summer was well below normal. With 49.5 inches of snowfall, the accumulation was heavy compared to the 16.0 inches recorded in 1970.

The District experienced a severe wind storm on June 24th and the resulting damage to the heron rookeries was extensive. On July 30th we had a record breaking low of 43 degrees. On the other hand, we didn't have our first killing frost until November 1st.

B. Habitat Conditions

1. Water

POOL LEVELS

Pool No. 10 at Clayton, Iowa Normal: 611

MONTH	HIGHEST LEVEL	LOWEST LEVEL	AVERAGE LEVEL	DATES OF HIGH LEVEL	DATES OF LOW LEVEL
January	613.00	611.90	612.31	7th	19th - 21st
February	612.85	611.45	612.07	23rd	16th
March	615.50	611.10	613.27	20th	15th
April	619.95	614.15	617.03	20th	1st
May	614.45	611.75	612.64	1st	17th
June	613.70	611.50	612.24	1st & 2nd	29th
July	611.95	610.18	611.56	11th	6th
August	611.65	611.10	611.33	20th - 23rd	7th & 8th
September	611.40	610.90	611.20	14th	1st
October	611.85	611.20	611.54	7th	1st
November	612.80	611.75	612.33	11th & 12th	1st & 3rd
December	614.40	611.45	612.61	25th	16th & 17th

On April 20th the river crested at approximately 9 feet above normal. This resulted in some inconvenience, but damage was minimal in the Guttenberg District. Another raise in December crested at nearly 3½ feet above normal. The water levels remained relatively stable throughout the remainder of the year.

2. Food and Cover

All indications are there was sufficient food and cover for the ~~XXX~~ wildlife. The Garnavillo Chapter of the Izaak Walton League attempted to establish wild rice in the Sny Magill Bottoms; however, it is too early to tell if it has become permanently established.

II WILDLIFE

A. Migratory Birds (Note: In most cases, comparisons cannot be made between 1971 and previous years due to the realignment of the Prairie du Chien and Cassville Districts)

1. Waterfowl

Spring: In early January, 5 goldeneyes were recorded in the District, but after that, no waterfowl were recorded until the last week in February when both goldeneyes and common mergansers were observed. Their arrival was consistent with previous years and marked the beginning of the spring migration.

The spring migration peaked at 19,465 ducks during the week ending April 10th. This was one week later than in 1970. The mean average temperature in March averaged 7 degrees below normal which undoubtedly contributed to the late migration. With the exception of Gadwalls, Blue-wing Teal, shovellers, buffleheads, and common mergansers, all species peaked 1 to 2 weeks later than in 1970.

Scaup were present in large numbers, peaking at 12,860 birds. Of the total duck day use, scaup were number 1 with 63%. Mallards were number 2 with 7%, ring necks were number 3 with 5%, and baldpates number 4 with 5%. This order is unchanged from previous years although scaup comprised a much larger percentage of the total.

There were 268,325 total duck days use during the spring.

Fourteen whistling swans were observed during the week ending April 10th. They spent 2 days in the District before continuing their northward migration. They are infrequent visitors to this District.

Snow and blue geese were first recorded during the week ending March 13th, and a flock of 30 Canada geese was observed during the week of April 3rd. Geese make relatively little use of the Guttenberg District.

Coots peaked at 16,900 during the week of April 10th, and days use totaled 148,803. Both figures are up from 1970 even without making an adjustment for the realignment of the Districts.

Summer: Wood ducks and mallards were commonly observed throughout the summer, and more rarely a blue-wing teal or a hooded merganser.

Wood ducks (78%), mallards (13%), and blue-wing teal (7%) totaled 98% of the total duck days use during the summer period. Their relative order is unchanged from previous years.

As usual, the peak occurred during the week ending August 28th which was the last week of the summer period. By mid August blue-wing teal were showing up in good numbers, making their arrival consistent with previous years.

Wood duck production was estimated to be 1,515. Although adult mallards were commonly sighted throughout the summer, no broods were observed. On April 20th, our spring flood crested nearly 9 feet above normal. This undoubtedly had an adverse effect on mallard production, even though there was ample time for renesting. In addition, predators undoubtedly take a heavy toll along the river. Raccoons and other predators, including skunks, mink, and bull snakes, are plentiful, exposing mallard nests to a high rate of loss. Bill Hiebing, Crawford County Game Warden, reported seeing a mallard nest in what appeared to be an abandoned crow's nest 10 feet over the water at flood stage. This put the nest 19 feet over the ground when the water returned to normal. Perhaps this is the mallard's way of adapting to the hazards of nesting along the river.

As in previous years, no geese were observed during the summer season.

No coots were recorded during the nesting season although they still appeared on the inventory as late as the first week in June, appearing again during the last week in July. Only very scattered sightings were made throughout August.

Fall: The realignment of the Districts had its greatest effect during the fall period. This was due primarily to the large addition to the closed area which includes the ponds at 12-Mile Island. Peak numbers and total duck days use nearly doubled in spite of the loss of prime marsh acreage to the Cassville District. Ducks peaked at 11,280 during the week of November 20th, and use days totaled 365,520. The late peak was the result of an extremely mild fall and a shortage of water in the ponds until the 2nd week in November.

Mallards (33%), wood ducks (19%), scaup (19%), and blue-wing teal (8%) totaled 79% of the duck days use. The relative positions of mallards and wood ducks switched, and scaup replaced blue-wing teal in the number 3 position. Only shovellers and pintails were down for total days use.

The peak used to occur during the week just prior to the waterfowl openings. Now with the addition to the closed area, including the ponds, the peak occurs later in the season. The peak may have occurred earlier if there had been water in the ponds during October and early November. The large pool area at the south end of Pool 11 helped to raise the diver days use from 15% of the total to 25%.

Ducks tended to linger this year due to the unusually mild September, October, November and December. By the end of the year there were still common mergansers, mallards, goldeneyes, and scaup, in that numerical order, recorded in the District. This was unusual for that late date.

There were 386 goose use days which was more than 7 times greater than what was reported for the Prairie du Chien District in 1970. Canadas, blues and snows were frequently observed on Big Pond which is within the borders of the closed area. Here they would rest and feed for several days before continuing their migration south.

Coots were present in large numbers as usual. They peaked at 14,200 and they totaled 305,160 use days.

Duck use days for the year totaled 805,620 and goose use days totaled 484.

2. Other Birds

Great blue herons arrived the last week in March which is typical for this species. In mid June they peaked at 720 and on June 24th a very severe wind storm took a heavy toll. One of the two rookeries in the District was checked the following morning. It had been estimated that there were 185 active nests in the rookery, and after the storm, 111 dead or dying great blue herons and egrets were counted. In addition, 50 or 60 more were on the ground but were able to move off as we approached. High winds accompanying June thunder showers are undoubtedly a major check on the highly vulnerable great blue herons and egrets. Great blue herons were last seen during the week ending November 20th.

American egrets are relatively uncommon in this District, although they typically nest in the heron rookeries. Like the great blue heron, they were first observed during the last week in March but they were last seen during the first week in October. During the week of August 14th, several large flocks were observed, making what appeared to be a gradual migration south.

Pied-billed grebes peaked at 150 during the week ending September 18th. They were last seen during the week of December 11th.

Sora rails are fairly common although it is virtually impossible to census this bird without running a time consuming transect. It is not felt that the species warrants the time and expense; therefore a rough estimate is made. The peak of 275 during September 1971 is probably a conservative estimate.

A common loon was observed during the week of April 10th. These birds are rarely seen in the District.

Double crested cormorants, green herons, black crowned night herons, American bitterns, and Virginia rails are also observed in the District in varying numbers. The numbers within each of the species appear to be fairly constant.

3. Shorebirds, Gulls and Terns
Ring-billed gulls first appeared during the week of March 13th, and by the end of the first week in April they had peaked at 3,500. The fall migration, which peaked at 700 during mid December, was less spectacular. This is typical for the species.

Herring gulls are present in smaller numbers and often accompany the ring-bills.

Killdeer are a frequent sight on the sand bars and mud flats throughout the District. The first ones were recorded in early March and they were last observed in mid December. They peaked at 50 during the week ending August 21st.

Although not as noticeable as the killdeer, spotted sandpipers are very common along the river banks. They were first observed in early April and they peaked at 225 during mid August. They were last seen in mid October.

Three species of terns are commonly seen in the Guttenberg District. Black terns peaked at 200 during the week of August 7th, common terns at 150 during the week of September 11th, and Caspian terns at 20 during the week of September 18th. The terns tend to be early fall migrants with the migration pretty well over by the end of September.

Avocets were observed for the third straight year. Seven of them were sighted on September 16th. Prior to 1969 they were rarely seen on the refuge.

Although never plentiful, woodcocks are observed every year in the vicinity of Paint Creek. Common snipe are fairly plentiful during the spring and fall migration. They peaked at 200 during mid October. Lesser yellow-legs are frequently observed on exposed mud flats during the spring and late summer. They peaked at 200 during the week ending August 14th.

4. Doves
Doves are generally present throughout the year, but they are most numerous from mid March through November. They tend to concentrate on the dikes of Lock and Dam #9 and #10 where there is an abundance of gravel and weed seeds.

1965
"M-9A

Refuge: Upper Mississippi, Guttenberg District
Period: Calendar Year 1971

B. Upland Game Birds

SPECIES	POPULATION JAN. 1	YOUNG PRODUCED	NUMBER STOCKED	GREATEST NO. PRESENT	TAKE	LOSS	POPULATION DEC. 31
Ring-necked Pheasant	10	15	0	25	0	5	20
Ruffed grouse	10	5	0	15	0	0	15
Bob-white quail	5	0	0	5	0	0	5
Gray partridge							
Wild turkey							

Upland game birds are rarely seen on the refuge itself although pheasants and ruffed grouse are relatively common in the higher areas bordering the refuge. Production of upland game birds is very low due to marginal habitat + frequent spring flooding. The small populations that are present are believed to be largely the result of an influx from bordering areas.

C. Big Game Animals (White-tailed deer)

POPULATION JAN. 1	YOUNG PRODUCED	GREATEST NO. PRESENT	HUNTER TAKE	LOSSES	POPULATION DEC. 31
25	10	35	15		20

Deer are occasionally seen on the refuge while tracks and other evidence of their movements are frequently observed. Iowa had a two day any sex deer season this year which is one day less than last year. However, it is believed that the kill was excessive in this corner of the state due to ideal hunting conditions. There was approximately 3 inches of snow on the ground and both days were unseasonably warm. The Iowa Conservation Commission was trying to build up the heard this year, but it would appear that their efforts were in vain.

UM-14
Rev.
1965

Refuge: Upper Mississippi, Guttenberg District
Period: Calendar Year 1971

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

SPECIES	POPULATION JAN. 1	YOUNG PRODUCED	GREATEST NO. PRESENT	TAKE	CON-TROL	LOSS	POPULATION DEC. 31
Muskrat	5000	18100	23100	8200	10	10390	4500
Mink	90	45	135	15	0	30	90
Beaver	260	195	455	50	0	135	270
Otter	30	10	40	2	0	8	30
Raccoon	300	300	600	200	1	99	300
Red Fox	30	15	45	10	0	5	30
Gray Fox	5	2	7	1	0	0	6
Skunk	70	50	120	25	0	25	70
Cotton-tail Rabbit	100	250	350	50	0	200	100
Opossum	90	90	180	45	0	45	90
Gray & Fox Squirrels	280	280	560	140	0	150	270
Woodchuck	50	50	100	5	5	40	50
Badger	0	0	0	0	0	0	0

The January 1st populations were adjusted to reflect the realignment of the Districts. However, the "Take" figures are based on the 71 Fur Catch Reports of those trappers who trapped in the Prairie du Chien District during the 1970-71 season. It is felt that the figures are comparable to what can be expected in the Guttenberg District. Raccoons, squirrels, and occasionally rabbits are hunted on the refuge. In these cases, the estimated hunting take is added to the reported trapping "Take". High water contributed to poor trapping success during the 1970-71 season, but it is felt that this same condition resulted in a high natural mortality, particularly among muskrats.

E. Hawks, Eagles, Owls, Crows, Vultures, Ospreys

Red-tailed hawks are year around residents of the Guttenberg District. There is, however, a noticeable migration in early April and again in September. Normally 5 to 10 winter here and as many as 15 or 20 may nest in the area.

Red-shouldered, rough-legged, and marsh hawks are generally present in low numbers during spring, summer and fall. Like the red-tail, they peaked in early April and again in late September or early October.

Bald eagles winter on the Upper Mississippi and they are regularly seen from mid October through the end of March. For the most part they can be found below the lock and dams, below power plants, or wherever there is open water. They are attracted by the dead fish that wash up and subsequently form a major part of their diet. On December 17th an adult eagle caught a healthy diving duck of undetermined species by hovering over a very small opening in the ice where there were 2 divers. For approximately one half hour the eagle hovered and swooped until finally the ducks were exhausted from the continuous diving. At this point the eagle connected and flew off with a hard earned meal. In mid December the eagles peaked at 20 in Pool 10 which is about normal for that pool.

Although rarely seen, owls are frequently heard on the refuge. Barred, great horned and screech owls, in that order, are the most common. In each case they are year around residents of the District.

Crows are common throughout the year although there is a noticeable spring and fall migration. Approximately 75 winter in this District and like the eagles, they are frequently observed on the ice feeding on dead fish.

Turkey vultures arrived during the week of March 27th and they were last seen during the week of October 30th. Normally there are about 20 in the District throughout the summer. Almost without exception they are seen in one of two areas where the thermals are apparently suitable for soaring.

Although never present in large numbers, ospreys are regularly seen during the spring and fall migration. In the spring a peak of 3 was reported in mid April and 6 of them were observed on September 14th. In the fall it appears that the birds frequently interrupt their migration to stay at one location for weeks. They get to be a regular sight on one perch or in one area, leading one to believe it must be the same bird.

F. Other Birds

Nothing to report

G. Fish

The fishing was about the same as in 1970. Some excellent walleye catches were made with Sonars below the dams and with live bait along the wing dams. Also, some very good catches of panfish were observed or reported. Fishing through the ice in December was excellent and in general there were few complaints.

H. Reptiles

Water snakes are commonly seen during the course of normal refuge operations. Painted and soft-shelled turtles are abundant throughout the water areas of the District. Snapping turtles are eagerly sought for their excellent meat and never appear to be abundant in spite of the large marsh and water areas. Although found in the bluff areas bordering the refuge, no rattlesnakes were seen or reported on the refuge this year.

I. Disease

Mange has been present in the fox population for the last several years. Presently their numbers are low but the few that were seen or trapped this year were apparently free of this disease.

J. Rare and Endangered Species

Nothing to report.

III REFUGE DEVELOPMENT AND MAINTENANCE

A. Physical Development

1. Development

Development for 1971 was more of an inheritance than an actual development. On January 22, 1971 the Guttenberg National Fish Hatchery was permanently closed and all of the facilities, including much of the equipment, was turned over to the refuge. Prior to this, the Districts had been aligned by pools, but with the new facilities, the Districts were realigned so that the Wisconsin side of Pool 10 went to the Cassville District and the Iowa side of Pool 11 became half of the Guttenberg District. The Guttenberg District now includes the Iowa side of Pools #10 and #11 for a total of 15,001 acres. This represents a loss of 3,546 acres including some of the best waterfowl maintenance areas such as the Upper and Lower Wisconsin Bottoms, Bagley Bottoms, and Horseshoe Lake. However, the Guttenberg District gained the 12-Mile Island closed area including the old hatchery ponds, a large pool or open water area at the south end of Pool #11 and the Turkey River Bottoms where there are 5 farming permittees. Much of the work has been simplified due to the fact that the District lies entirely within the state of Iowa now.

The District Office was moved from the post office building in Prairie du Chien to the Aquarium building which was also taken over from hatcheries. A driveway separates the aquarium building from a 4 bedroom residence. (See photo section) Just below

and between the aquarium and residence there is a 3 car garage with an attached workshop and storage area. Behind the aquarium and to the south of the garage, there is a paint house which also serves as the pump house for the aquarium. Below the paint house lies the boat ramp where the government boats are kept. The entire building complex including the boat ramp is in an area smaller than a football field, making it a very convenient arrangement. In addition, there is a warehouse at 12-Mile Island where the tractor, mowers, pumps, etc. are stored. All facilities including the dikes, residence, garage, aquarium etc. were built during the late 1930's and they are still in very good condition. The move from the Prairie du Chien area to Guttenberg was made on March 5th and the transition was made with a minimum of problems.

The ponds which had been used for fish production and maintenance are now being used for waterfowl maintenance. There are 7 ponds, of which 3 are sufficiently large to warrant some type of management. Four of the ponds are less than 2 acres in size and were used for holding brood stock, minnows, etc. The 3 large ponds average about 11 acres each, and together they comprise 88% of the total pond area. All of the ponds have control structures. Gravity is the primary means of controlling the water level although pumps are available when needed. (See photo section for an aerial view of the ponds, dikes and warehouse). There are approximately 12,390 feet of earthen dikes enclosing the pools. The warehouse has 1,440 square feet of usable storage space including a small area for a workshop. There is no electricity at the island.

Other than what was received in connection with the closing of the fish hatchery, there was no development in the Guttenberg District.

2. Maintenance

The refuge boundaries were checked and posted as necessary. Since the spring flood crested nearly 9 feet above normal, a considerable amount of time was spent cleaning, straightening, or replacing signs.

The grounds of the District headquarters were maintained as required. This would include mowing the lawn, sweeping, painting, shoveling snow, picking up litter, etc. Since the aquarium is open to the public, there is also a public restroom to maintain.

The closed area was checked and posted prior to the opening of the waterfowl season.

The dikes at 12-Mile Island were mowed and maintained. An International 460 Utility tractor was transferred to Guttenberg on June 29th. Brush and small trees were cut from the slopes and washes were filled.

After the hatchery was closed, a great deal of time was spent cleaning up and changing things around to suit our needs. The result is a very workable and a very convenient station.

B. Plantings

1. Aquatics and Marsh Plants
Approximately 9 bushels of domestic millet were hand seeded over approximately 35 acres in 4 of the 7 ponds in early June. Germination was excellent but it did not take except in narrow strips where soil conditions were right. It is estimated that 3 acres of millet, in good dense stands, matured.

2. Trees and Shrubs
Nothing to report

3. Upland Herbaceous Plants
Nothing to report

4. Cultivated Crops
Five farming permittees put in 126 acres of corn in 1971. Too much moisture and high water had an adverse effect on the corn in low areas. As expected, there was some raccoon, deer, and squirrel damage near the outside margins. The average yield was close to 70 bushels per acre.

C. Collections and Receipts

1. Seed or Other Propagules
Nothing to report

2. Specimens
Nothing to report

D. Control of Vegetation

Atrazine or 2-4-D was applied to the fields in May and early June to control giant foxtail, pigweed, and sedge on 126 acres of farmland. Atrazine was applied at the rate of 1 1/2 to 2 pounds per acre, while 2-4-D was applied at the rate of 1 pint per acre. Water was used as the carrier. The herbicides were applied at no cost to the government. The applications were effective and corn production was good, except low lying areas that were inundated by water.

Other than the above chemicals used by the farming permittees, vegetation control was limited to the mechanical mowing or cutting of weeds and small trees on the dikes at 12-Mile Island or along refuge boundaries.

E. Planned Burning

There were no controlled burns on the District this year.

F. Fires

There were no fires in this District during 1971

IV RESOURCE MANAGEMENT

A. Grazing
There was no grazing in the District this year.

B. Haying
No haying permits were issued in this District during 1971.

C. Fur Harvest (1970-71 Season)
The fur harvest data was obtained from the Fur Catch Reports of these trappers who trapped in the old Prairie du Chien District (Pool 10), since most of the trapping season was over before the realignment of the Districts took place.

There were 135 trapping permits issued compared with 142 during the 1969-70 trapping season. Of the 135 permits issued, 69 trapped in Pool 10, 31 trapped in other pools (Districts), 16 did not trap, and 19 failed to send in their trapping report. In addition, 2 trappers got permits in other Districts but trapped in this District; therefore, the fur harvest data was obtained from 71 trapping reports.

Fur Harvest, 1970-71 Trapping Season

	Muskrat	Mink	Beaver	Raccoon
(No. Trappers) & Harvest Rep'd	(67) 7309	(8) 13	(11) 43	(10) 26
(No. Trappers) & Harvest Proj.	(74) 8000	(10) 15	(13) 50	(12) 30
Ave. No. of Pelts per Trapper	109.1	1.6	3.9	2.6
Ave. Price per Pelt	$ .97	$ 5.54	$ 7.86	$ 1.62
Total Value from Reports	$7,082.20	$72.00	$338.00	$42.00
Total Value Projected	$7,760.00	$83.10	$393.00	$48.60
Ave. Income per Trapper	$ 105.70	$ 9.00	$ 30.73	$ 4.20

The number of muskrats trapped was down 43% from the 1969-70 season. A total of 7,309 muskrats were reportedly trapped compared to 12,794 the previous year. The average price per pelt was $.97 which was down $.16 from the year before.

Only 13 mink were reportedly trapped, down from 21 the previous season. The average price was $5.54 which was $1.53 lower than in 1969-70. In 1968-69 the average price was $10.28 which indicates the price of mink has dropped nearly 50% in just 2 years.

The number of beaver trappers increased from 9 to 11 but the number of beavers trapped dropped from 95 to 43. The average beaver brought $7.86 which was $1.79 less than the 1969-70 season and $7.53 less than the 1968-69 season.

The otter season was closed again in Iowa but the Wisconsin season was opened up after being closed during the 1969-70 season. One otter was reportedly trapped and he sold for $24.00.

The same number of raccoon trappers trapped 26 raccoons compared to 32 the previous season. The average price per pelt dropped from $3.59 to $1.62. It should be said that most of the raccoons taken on the District are hunted with hounds and these animals do not appear on the Fur Catch Reports.

The total reported receipts for trappers in Pool 10 amounted to $7,534.20 for an average of $106.11 per trapper. This was down from $185.31 the previous season. The low income figures for the recent season were due to low fur prices and poor trapper success.

High water resulting from an ice jam in early December made trapping very difficult in Pool 10. An unusually large number of trappers did not trap at all or trapped in other pools due to the water conditions. The cause of the ice jam was attributed to barge traffic. As they broke ice, the current carried it to a bend in the river at McMillan Island where it formed a gorge. The result was an effective dam.

D. Timber

No timber was removed from the District this year.

E. Commercial Fishing

1. Clamming

The bottom fell out of the clam shell market and clam boats were idle throughout the summer.

2. Fishing

There was little change in the commercial fishing during 1971. Channel catfish, buffalo and carp are the major species caught. A variety of nets and traps are used depending on time of year, water conditions, personal preference and species caught.

F. Other Uses

Mr. and Mrs. Chris Sime continued to maintain their Special Use Permit for the fish float and concession. The permit site is located immediately below Lock and Dam #9 and provides some excellent fishing opportunities, particularly during spring and fall. Mr. Sime made a tremendous improvement this year when he built new comfort stations and a holding tank on a floating platform. Approximately once every 4 to 6 weeks the entire unit is pushed to the Wisconsin shore where it is pumped commercially. Prior to this improvement, the comfort stations were simply floating seats with a wall around them. As a result, raw sewage went directly into the river. The new addition has prompted some favorable responses and Mr. Sime seems to feel the new arrangement is working out well. (See photo section).

Messrs. Oran and Herman Benskin were brought under Special Use Permit. They carry paying passengers to the Iowa shore below Lock and Dam #10 for the purpose of fishing in the productive tail water area. To prevent damage to their boat when dropping off or picking up passengers on the rocky shore, they have put in a landing pad. In addition, they have put in a flag pole so that fishermen can signal when they are ready to be picked up.

V FIELD INVESTIGATION OR APPLIED RESEARCH

A. Duck Trapping

A total of 112 wood ducks were banded in 1971 compared to 443 in 1970. Due to the realignment of the Districts, new sites were selected and baited prior to opening the 5 swim-in traps. For some reason, which is still unknown, we had very little success this year. We even tried the old proven banding sites near Prairie du Chien, Wisconsin and they were no more productive than the local ones. For awhile the corn was blamed, but even this proved to be false. We finished up with a cannon net shot on August 25th that netted us 25 birds--19 unbanded. In 1970 we started later (3 days), quit earlier (12 days), and yet got almost 4 times as many ducks.

Trapping mortality was low with only 2 known losses. However we had more trouble than usual with raccoons. A trap was finally set at one particularly troublesome location. One raccoon was dispatched, and our 'coon related troubles were over.

The following is a summary of the banding results for 1971.

Age	Male	Female	Unknown	Total
AHY	6	4		10
HY	35	57	3	92
L	2	5	3	10
Total	43	66		112

B. Band Returns

The band return pattern was normal. Many of the locally banded wood ducks were killed in the same general area where they were banded. From the location of the banding site, the distribution tends to be along the Mississippi River south to eastern Texas and Louisiana.

C. Bag Check Data

Bag check data is sumarized on form UM - 13.

Normally the wood duck has been the most frequently bagged species, but in 1971 mallards were number one, followed closely by wood ducks. The top 4 species bagged, mallards (32%), wood ducks (30%), blue-wing teal (19%) and green wing teal (14%) comprised 95% of the birds checked.

Due to the realignment of the Districts, the data for 1971 cannot be compared with previous years. Bag checks are difficult to make under the present alignment due to the lack of concentration points on the Iowa side. Also, more checks were made in the Guttenberg area where hunters go out for an hour or two before or after work.

Even thought coots are extremely common in many areas of the District, not one was checked. This was quite unlike the Prairie du Chien District where a number of Wisconsin hunters hunt them with a certain amount of enthusiasm.

Hunting is discussed in Section VI D.

UM-13

Bag Check Summary of Species Taken
Upper Mississippi River Wildlife and Fish Refuge
Period: October 2 thru November 20, 1971

	1969		1970		1971	
No. hunters checked	238		356		115	
No. ducks checked	446		809		132	
Average ducks per day	1.9		2.27		1.15	
Species	No.	%	No.	%	No.	%
Mallard	63	14	90	11	42	32
Black	-	-	1	Tr	-	-
Gadwall	3	Tr	2	Tr	1	Tr
Baldpate	17	4	9	1	1	Tr
Pintail	5	1	12	2	-	-
G.w.teal	40	9	122	15	19	14
B.w.teal	134	30	281	35	25	19
Shoveller	11	2	9	1	2	1
Wood duck	162	36	268	33	39	30
Redhead	1	Tr	-	-	-	-
Ring-neck	9	2	8	1	-	-
Canvas-back	-	--	3	Tr	-	-
Scaup	1	Tr	1	Tr	3	2
Golden-eye						
Buffle-head						
Ruddy						
Mergansers						
Scoter						
Old squaw						
Hunters took ducks as follows:					4	3
	15	5	38	11	2	2
4*	35	15	35	10	3	3
3*	37	16	61	17	10	9
2	33	14	98	27	14	12
1	45	19	60	17	28	24
0	73	31	64	18	54	47

* Ave. # Ducks Lost	.30	.41	.10
Ave. # Hrs/Duck	2.3	2.5	2.6
Ave. # Hours Hunted	4.4	5.7	3.0
# Coot checked	139	67	0
# Geese checked	0	3	0

Note: Bag check data for 1971 is not comparable with previous years due to the realignment of the Districts. There is a lack of hunter concentration points on the Iowa side making bag checks more difficult.

VI PUBLIC RELATIONS

A. Recreational Use

The number of recreational visits dropped from 250,927 in 1970 to 172,677 in 1971. However, the figures are not actually comparable due to the realignment of the Districts. Although it is difficult to assess just how much, the weather was surely a contributing factor. Above average temperatures were the rule in June, July and August in 1970 while July and August were well below normal in 1971. Precipitation was below normal during both seasons.

There were 3,225 hunting visits, and of those, 2,855 (89%) were waterfowl hunters. Most of the remaining visits were deer or squirrel hunters. There are no woodcock, rail or dove seasons in Iowa and upland game birds are not present in sufficient numbers to warrant hunting them. There is much greater waterfowl hunting pressure in Wisconsin than in Iowa due principally to the distribution of prime marsh areas and the proximity of some of these areas to Prairie du Chien, Wisconsin which is the largest town within 50 miles in any direction.

Fishing continues to be the greatest single activity. It represents 30% of the total activity visits for an estimated 285,699 activity hours.

Most of the wildlife observation occurs during the summer when the excursion boat "Prairie Gal" takes passengers along the Mississippi River. In addition, waterfowl concentrations in the spring and fall, and wintering bald eagles attract several hundred observers every year.

The public fish aquarium drew an estinated 8,225 visitors. It was open during the tourist season from Memorial Day through Labor Day, and has generally been considered one of the major attractions in Guttenberg. Most of the local fish found in the Mississippi River are on display in addition to a few not-so typical fish including albino brook trout, etc. There are 7 small tanks, (36" x 36" x 36"), 2 large ones (94" x 36" x 36" and 84" x 60" x 36"), and 1 turtle tank. (See photo section).

See Form 3 - 123 for specific recreational use figures.

B. Refuge Visitors

Bureau personnel, wardens, permittees, sportsmen, and general information seekers made up the list of 60 official visitors during 1971.

C. Refuge Participation

The "Refuge Report", a five minute radio program, was broadcasted over radio station WPRE 4 times during 1971. After the realignment, it became impractical to continue the program and it was eventually dropped.

Programs were presented to 20 groups during 1971 and a total of 829 people attended. Frequently the program consisted of a talk/movie

combination.

A small group of Milwaukee inner city kids spent a morning at the station. The program included a nature study program at 12-Mile Island, a complete tour of the aquarium and finally a movie. The program was well received.

The girls attending the annual Girls Conservation Camp at Wyalusing State Park came to Guttenberg for a tour of the aquarium. They finished up with a brief nature study program at 12-Mile Island; however, the latter was judged too much for one day after having had an active morning at Cassville.

Six press releases were delivered to 13 newspapers for an average of 2 newspapers for each release.

D. Hunting

1. Waterfowl

The Iowa season opened on October 2nd at one half hour before sunrise. The Wisconsin season opened at 12 noon on the same date, thus giving Iowa hunters a double round of good shooting. The Iowa season closed on November 20th, and like 1970, Iowa chose the point system. The bag limits could range anywhere from 1 to 10 ducks, depending on the species shot and the order.

Locally, duck stamp sales were comparable to last year which was considered a big year. Many of the local post offices ran out of duck stamps again this year.

Hunter success ranged from 4 men with 39 ducks (38 blue and green wing teal and 1 wood duck) to 11 men with no ducks.

Many hunters complained about the short season and others felt the season was too early. Usually the local sloughs are pretty well frozen over by November 20th, but not so this year. A later season this year would have paid off with more mallard shooting, but when the regulations are set, one never knows what the weather will be like in November. We had an extremely mild fall which slowed the migration up considerably.

Hunting pressure was relatively high throughout the season, particularly in the Guttenberg area.

2. Big Game

Iowa had a 2 day gun season during which either bucks or does could be taken. In 1970 Iowa had a 3 day season, but in their attempt to build up the herd, they shortened it to 2 days. However, all indications are there was an exceptionally big kill this year as a result of nearly ideal deer hunting conditions.

There was approximately 3" of snow on the ground and both days were unseasonably mild. One noteworthy group of 17 hunters hunted off the refuge near McGregor. They killed 17 deer whereas normally they get about half of that. Six deer are known to have been taken on the refuge, but there is no way of knowing what the total was. Bow hunting is growing in popularity, partially because the number of bow licenses is not limited and partially because the season was 7 weeks long.

3. Upland Game
Upland game hunting is limited primarily to gray and fox squirrels, plus a few rabbits along the higher margins. There are so few pheasants, ruffed grouse and quail on the District that it isn't worth the time and effort to hunt them.

E. Violations
Eight cases were made in 1971 compared to 9 in 1970. Four waterfowl hunting cases are still pending. (See Violation Apprehension Summary sheet for details).

F. Safety
There were no lost time accidents or injuries at this station during 1971.

Safety bulletins and reports were read as they were received.

Safety meetings or discussions were frequently held with temporary employees during the summer.

VII OTHER ITEMS

A. Items of Interest
George Moylan of Cass City, Michigan, was employed for the summer as a Student Laborer. He was a senior at the University of Michigan at the time of his employment, and he plans to continue his education until he gets his Master's Degree.

David Turner of Guttenberg has been assigned to this office since April 1971. Dave will continue to work at the station until April 1972 when he will be 18 and no longer eligible for work under the Neighborhood Youth Corps program.

B. Photographs
Appended -- aerials by Winship
all others by Smith

VIOLATION APPREHENSION SUMMARY

Refuge: Upper Mississippi, Guttenberg District

Period: 1971

DEFENDANT	ADDRESS	OFFICER	OFFENSE	DATE	PENALTY	JUDGE
Merlyn A. BAGE	Greeley, Iowa	Smith	Littering	7/1/71	20/4	Grant Fischer Iowa JP.
Ronald Loren LICKISS	R.R. 2 Oelwein, Iowa	Smith	Littering	8/18/71	20/4	Grant Fischer Iowa J.P.
William Joseph LAHEY	Dyersville, Iowa	Smith	Over the limit on wood ducks	10/2/71	25/4	Grant Fischer Iowa J.P.
Steven Michael MAYFIELD	632 20th Ave. S.W. Cedar Rapids, Ia.	Smith	Hunting waterfowl without a duck stamp	10/25/71	Pending	
John Joseph IRELAND	405 23rd St. N.E. Cedar Rapids, Ia.	Smith	Killing waterfowl after shooting hours, no duck stamp	10/25/71	Pending	
William Edward BAUDER	3010 Terry Dr. S.E. Cedar Rapids, Ia.	Smith	Unplugged gun, no running lights	10/25/71	Pending	
Robert Duane BAUDER	3010 Terry Dr. S.E. Cedar Rapids, Ia.	Smith	Killing waterfowl after shooting hours, no duck stamp	10/25/71	Pending	
Iona Angeline TEETER	1310 1st Ave. N.E. Cedar Rapids, Ia.	Smith	No running lights 39 minutes after sunset	10/31/71	10/4	Rosemary Tuecke Iowa J.P.

SIGNATURE PAGE

Submitted by:

Jeffrey P. Smith
(Signature)
Jeffrey P. Smith

Date: January 31, 1972

District Manager
Title

Approved, Regional Office:

Date: MAR 10 1972

James B. Monnie
(Signature)

ASST

Regional Refuge Supervisor

PHOTOGRAPHS

THE NEW RESIDENCE OF THE GUTTENBERG DISTRICT MANAGER is a 7 room house which was built in the late 1930's. Although you'd never know it by looking at the picture, it is practically in the center of town.

THE DISTRICT OFFICE AND AQUARIUM are located in this brick building which is just across the drive from the residence. These pictures were taken soon after the buildings were vacated by hatchery personnel. Since then some minor improvements have been made, including a new sign over the door.

ONE OF NINE TANKS IN THE AQUARIUM contains panfish which were caught locally. Other tanks contain catfish, bullheads, northern pike, buffalo, carp, black bass etc. Even large goldfish turn up rather frequently in the traps or on a fisherman's line. Since they are found in the river, one was saved for the aquarium, and as one might suspect, it was one of the most popular fish on display.

AN AERIAL VIEW OF THE PONDS, DIKES, AND WAREHOUSE is better than a thousand words of description. The ponds had been drawn down at the time the picture was taken. Big pond lies in the foreground, and although it has water control structures, there is no way to accomplish a complete drawdown through gravity. Although in the Guttenberg District, Big Pond is managed by the Cassville District Manager. (Photo by Winship)

A CLOSER LOOK AT TWO OF THE PONDS helps to show the dikes, barrow pits, and vegetation in a little better detail. The warehouse, where much of the equipment is stored, is located in the upper left hand corner. The ponds were reflooded in early November, and waterfowl use was high. Good stands of millet, smartweed and chufa located in an area closed to waterfowl hunting helped to make the area attractive to migrating ducks. (Photo by Winship)

MIGRATING MONARCHS caused the RBU's for the refuge to soar. On Wednesday, September 8th, a thousand monarchs could be seen at any one instant. This peak in the migration continued for approximately 2 hours. A spotting scope was focused directly overhead, and one could see hundreds more that could not be seen with the naked eye. On Wednesday evening hundreds of them roosted in the maple and fir trees just north of the residence. Thursday was cold and damp and there was little, if any, coming and going. Friday was warm and sunny and there was a slight breeze out of the north to carry the monarchs on their southerly migration. By 10:30 a.m. Friday all of them had left the roosting site.

N.Y.C. ENROLLEE DAVE TURNER has been an invaluable aid ever since mid April. Much of the painting etc. would never have gotten done if it hadn't been for his assistance.

A CLOSE CALL FOR TWO CARELESS BOATERS may be a good lesson for all of us. They had attempted to start the motor for some time with no success. Finally they decided to put it in gear so they could give it more throttle. Since they had run the battery down, they were hand cranking it from the back but the controls were located forward. To make a bad situation even worse, they paid no attention where the boat was headed. The motor started on the first pull and the boat surged forward ramming the old hatchery tow-boat. They ended up with some minor cuts and bruises and a damaged boat. However, if some-one had been up front, they could easily have been thrown forward and impaled on the deck support which broke through the dash, and the injuries could have been more serious.

JAN • 72

JAN 72

THIS NEW RESTROOM, HOLDING TANK AND FLOAT COMBINATION represents a major improvement over the old facilities. Before July 1, 1971, the raw sewage went directly into the river, but now the entire float is pushed to the Wisconsin shore once every 4 to 6 weeks where it is pumped commercially. Mr. Sime who operates the fish float and concession below L & D 9, designed and built this structure to comply with refuge regulations.

THE BUILDING IS LIGHT WEIGHT AND EASILY CONSTRUCTED. The ventilator on top is very effective as the enclosed part is virtually odor free. Those of us on the refuge feel that Mr. Sime has come up with a very workable solution, and apparently others think so too as he has had many favorable comments.

JAN 72

JAN 74

CASSVILLE DISTRICT

NARRATIVE REPORT

UPPER MISSISSIPPI RIVER NATIONAL WILDLIFE REFUGE

Cassville District

1971

William H. Hutchinson
Refuge Manager

Mark D. Wagner
Summer Assistant EOD 6-16-71 left 9-3-71

United States Department of the Interior

Fish and Wildlife Service

Bureau of Sport Fisheries and Wildlife

Cassville, Wisconsin

C O N T E N T S

* PREFACE *

In the spring of 1971 the Guttenberg National Fish Hatchery was phased out and all buildings and ponds were transfered over to the Upper Mississippi River Wild Life and Fish Refuge. The district manager from Prairie du Chien, Wisconsin was moved to Guttenberg to occupy the government quarters there. The two districts were realigned to form the Guttenberg and Cassville Districts. The Cassville District now comprises all lands and waters in the State of Wisconsin in pools 10 and 11.

Any reasonable comparisons of data between 1971 and previous years can not be made because of this realignment.

UM-2
Rev.
1965

I. GENERAL

A. Weather Conditions

MONTH	Precipitation: Total	Precipitation: Normal	Precipitation: Snowfall	Temperature: Max.	Temperature: Min.	Temperature: Mean Av.	Temperature: Normal Mean Av.
January	1.98	1.83	14.6	37	-17	11.2	19.2
February	2.96	1.40	7.5	50	-17	20.0	22.0
March	1.58	2.76	13.4	70	9	29.6	31.9
April	1.37	3.08	1.4	79	17	47.7	46.8
May	4.35	4.22		88	32	55.8	58.1
June	2.51	4.21		96	52	73.2	67.9
July	3.66	3.51		86	44	68.0	72.6
August	2.60	3.73		88	48	67.1	70.5
September	3.96	3.74		89	36	64.9	61.7
October	3.69	2.74		86	30	57.1	50.7
November	4.39	2.59	12.3	45	29	37.6	34.8
December	4.04	1.90	4.1	33	21	27.7	23.5
Annual Totals	37.09	35.71	53.3	96	-17	46.1	46.3

Weather Station: U.S. Weather Bureau, Dubuque, Iowa

Jan. and Feb.	many days of sub-zero temperatures.
March	unseasonly warm days followed by snow.
April and May	light to moderate rain with predicted flooding not occuring
June	hot and humid
July	unseasonal cold temperatures for 2-3 weeks.
Aug. and Sept.	mild to very warm temperatures with small amount of rain.
October	very warm during first part of month.
November	heavy snow during the last week.
December	very warm and unseasonable weather and very little snow.

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1964

B. Habitat Conditions
1. Water

POOL LEVELS

Pool No. 10 at Clayton, Iowa Normal: 611

MONTH	HIGHEST LEVEL	LOWEST LEVEL	AVERAGE LEVEL	DATES OF HIGH LEVEL	DATES OF LOW LEVEL
January	613.00	611.90	612.31	7	19,21
February	612.85	611.45	612.07	23	16
March	615.50	611.10	613.27	20	15
April	619.95	614.15	617.03	20	1
May	614.45	611.75	612.64	1	17
June	613.70	611.50	612.24	1,2	29
July	611.95	610.18	611.56	11	6
August	611.65	611.10	611.33	20,23	7,8
September	611.40	610.90	611.20	14	1
October	611.85	611.20	611.54	7	1
November	612.80	611.75	612.33	11,12	1,3
December	614.40	611.45	612.61	25	16,17

The first tow of the season came by Cassville breaking ice on March 12,1971. By the end of March the main channel was full of ice flows and the water started to rise. The threat of dangerous flooding was alliviated by two cold days about the 19th of April and the river peaked at Cassville on April 21st at 16.83 feet. Pool levels dropped to nearly normal levels during the summer months. More than normal percipatation during the last three months of the year cause the pool levels to be high.

2. Food and Cover

From the 1970 cooperative farming program there were approximately thirteen acres of corn left in the fields for wildlife. Deer, rabbits, squirrels and numerous small birds fed readily on the corn during the winter months. Flooded corn fields in the spring provided an attractive table for migrating waterfowl.

Aquatic plant growth on the district this year was good to excellent in most areas. Wild celery in the lower part of the pools is making a slow comeback from the 1965 flood. Good stands of natural waterfowl food, such as Chufa, rice-cut grass and spike rush occurred in Big Pond this year. Lotus and Sagittaria are filling in some ponds and sloughs.

The 1971 farming program got underway with most of the crops planted by June. Southern corn blight was not as serious this year as last; blight resistant strains were used whenever possible. Permittees harvested 27½ acres of corn and left in the fields 7½ acres of corn and 8 acres of alfalfa as the refuges' share.

II. WILDLIFE

A. Migratory Birds

1. Waterfowl

Ducks: Less than 100 goldeneye and common mergansers made up the wintering population of ducks on the district. The second week of March marked the first sign of the spring migration with the appearance of mallard, pintail, wood duck, ringneck, canvasback and a large number of goldeneye. The spring migration peaked during the second week in April, when over 25,000 ducks were present. By the first week in May the majority of ducks had moved out of the district.

Fall migration peaked during the last week of October with over 12,800 ducks. By the first week of December most of the ducks were heading south.

The duck population for the summer was made up of wood duck, mallard, blue-winged teal and a few hooded mergansers.

In total days use by species the scaup has taken over the number one spot, followed by wood duck, then mallard.

The spring wood duck flight counts were up from last year revealing a higher breeding population of wood ducks.

Brood counts were run on six consecutive days with ideal weather the first five, and fog the last day. The transects were run from June 28 - July 3. A total of 18 broods were observed; 15 wood duck and 3 mallard

broods. On the basis of these transects the wood duck population is estimated at 1,008 and the mallard at 200 young. Blue-winged teal production has dropped to an estimate of 30 young, while hooded merganser production is up this year at 24 young.

Geese: A peak of 50 canadas, 2 snows and 2 blues were present on the district during the second week of April. The geese remained only a week before moving northward. The fall migration reached a peak of 1,100 canada, 400 snow and 700 blue geese during the last week of October. Geese were not found on the district during the summer months.

Coot: The spring migration of coot peaked at 6,300 during the second week in April. The population decreased by the end of May with only 100 left to remain for the summer. The fall peak of 21,000 reached during the third week of October was up considerably over last year.

Swans: Twelve whistling swans were observed on the Potosi Marsh during the third week of April. The swans remained for about a week and they were the main attraction during our Migration Days Event. Five whistling swans were again observed the second week of December at the Potosi Marsh. Whistling swans were not observed during any other period of the year.

2. Other Water Birds

Egrets: American egrets were observed on the district during the second week in April and reached a peak population of 52 during the second week in June. An estimated 27 young were produced on the district. Again this year, many egrets and herons were lost due to severe wind storms. Egrets remained on the district until the last week in October.

Herons and Bitterns: Great blue herons were first observed on the district during the second week in March and reached a peak population of 807 during the second week in June. An estimated 207 were produced in two rookeries located on the district. The last great blue heron was observed during the last week in November. Green herons reached a peak population of 30 during the second week in June. The black-crowned night heron population is estimated to be 5 during the summer months. American bitterns and least bitterans were not observed this year.

Grebes: Pied-billed grebes were present on the district the last week of March, reaching a peak population of 50 during the second week of April. Pied-billed grebes remained on the district until the second week in July. They began to appear again during the first week of September and peaked at 60 the first week of October. The last pied-billed was observed during the last week in October. One horned grebe was observed on the district on April 29, 1971.

Loons: Loons were not observed on the district this year.

Cormorants: A lone cormorant was observed on the district on April 16, 1971. It stayed on the district for approximately two weeks and then left.

Gulls and Terns: Ring-billed gulls were first observed during the second week of March and they reached a peak population of 1500 during the third week of April. A population of 50 remained most of the summer. The fall build-up occurred about the second week of September and a peak was reached during the third week of December when 1200 ring-billed gulls were present on the district. Herring gulls were first observed on the district during the last week in March. They reached a peak of 50 during the first week in April and remained until the second week in May. Herring gulls were again observed the second week of September and reached a peak of 400 during the second week in December. This large concentration of ring-billed and herring gulls occurred much later then previous years. Common terns appeared the last week of April and peaked at 50 during the second week in May. Black terns were observed on the district the third week of May when the peak of 200 was reached. Caspian terns were first observed the first week in August and peaked at 8 the first week in September.

Pelicans: A lone white pelican was observed on Big Pond on October 12, 1971. The pelican remained just one day then left.

Rails: Sora rails appeared on the district during the first week in May and peaked at 80 during the second week in June. Sora rails were present until the last week in October. Virginia rails also appeared the first week in May and reached a peak of ten birds.

3. Shorebirds

Common Snipe: Snipe were present on the district the first week in May and peaked at 100 birds the second week of May.

Other Shorebirds: Killdeer, greater and lesser yellowlegs and sandpipers were present on the district at verious times of the year. Four american avocets were observed on the district on July 20, 1971. Woodcock were present on the district in small numbers during the spring, summer and early fall months.

4. Doves

Mourning Doves: Mourning doves were present on the district most of the year. A peak population of 60 was reached during the first week of June.

1965
UM-9A

Refuge: Cassville Dist. Upper Miss.
Period: Calendar Year 1971

B. Upland Game Birds

SPECIES	POPULATION JAN. 1	YOUNG PRODUCED	NUMBER STOCKED	GREATEST NO. PRESENT	TAKE	LOSS	POPULATION DEC. 31
Ring-necked Pheasant	6	0		6		2	4
Ruffed grouse	40	80		120	30	20	70
Bob-white quail							
Gray partridge							
Wild turkey							

Ring-necked pheasants are very low in numbers on the district. Ruffed grouse are becoming more abundant in the timbered river bottoms.

C. Big Game Animals (White-tailed deer)

POPULATION JAN. 1	YOUNG PRODUCED	GREATEST NO. PRESENT	HUNTER TAKE	LOSSES	POPULATION DEC. 31
50	30	90	20	5	55

The white-tailed deer population is relatively stable on the district.

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Rev.
1965

Refuge: Upper Miss. Cassville District
Period: Calendar Year 1971

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

SPECIES	POPULATION JAN. 1	YOUNG PRODUCED	GREATEST NO. PRESENT	TAKE	CON-TROL	LOSS	POPULATION DEC. 31
Muskrat	4700	11500	16200	5517	0	4000	6683
Mink	120	200	320	7	0	60	253
Beaver	120	150	270	53	0	40	177
Otter	20	15	35	3	0	4	28
Raccoon	600	900	1500	138	12	200	1150
Red Fox	150	250	400	70	0	150	180
Gray Fox	60	100	100	20	0	30	110
Skunk	60	100	100	20	0	40	100
Cotton-tail Rabbit	325	800	1125	100	0	200	825
Opossum	400	700	1100	75	0	500	525
Gray & Fox Squirrels	1200	2000	3200	500	0	500	2200
Woodchuck	30	45	75	0	0	20	55
Badger	6	6	12	0	0	3	9

Again this year, poor ice conditions and fluctuating water levels made it difficult for the trapper. Squirrel and raccoon populations continue to increase. Beaver populations are also on the increase.

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

Hawks: The red-tailed hawk was the most abundant hawk on the district with a peak population of 45. Rough-legged and marsh hawks were observed in small numbers during the spring and fall months.

Eagles: The wintering population of bald eagles on the district reached a peak of 100 on December 22, 1971. The eagles congregate near the open water areas below the two power plants located in Cassville.

Owls: Great horned, barred and screech owls are common the year aroung with estimated populations of 25, 60 and 30 respectively.

Crows: Crows are present on the district most of the year with a peak population of 650 during the fall months.

Vultures: The turkey vulture is a common resident, which nests along the Mississippi River on the steep bluffs. A peak of 80 birds was reached during the summer months.

F. Other Birds

Osprey: A peak of two osprey was reached during the second week in September. Osprey were also present during the first part of May.

G. Fish

Good catches of walleye were taken just below the lock and dams in the spring and again for about a week in the fall. Crappies and bluegills make up the bulk of the catch during the winter months. Commercial fishermen had a poor to fair year on the river. At one time the price of buffalo was 28¢ per pound, but fish were hard to find.

H. Reptiles

Numerous species were observed throughout the summer months, but nothing of unusal significance.

I. Disease

Southern corn blight was reduced somewhat this year due to the use of resistant strains. Dutch Elm disease continues its attack in the river bottoms.

J. Rare and Endangered Species

None to report

III. Refuge Developement and Maintenance

A. Physical Developement

After the high water in the spring all boundary and closed area signs were checked and replaced if needed. Litter signs were posted on sandbars and access sites. The access road thru Dago Slough farm units was repaired after high water.

New recognition signs were installed at Nelson Dewey State Park, Bagley Bottoms and Jay's Lake Landing. A "Tell it Like it Is" (antilitter) sign was installed at Wyalusing beach. The top pole of the refuge recognition sign at Prairie du Chien was replaced.

A new water gage was installed at Big Pond. Brush was removed near the Lynn Hollow access site for future parking. Fill dirt was placed around the docks at Lynn Hollow providing a better walk-way. Dead elms were removed wherever they became a saftey hazard. The boat landing at Ambro Slough was finished and a landing mat installed.

B. Plantings

1. Aquatic and Marsh Plants

Although there were high river levels until late July, there was an excellent growth of aquatic plants throughout most of the district. Big Pond had very good stands of Chufa, rice-cut grass, spike rush and arrowhead. The vegetative transect on Big Pond also revealed new plants such as dock, cockelbur and maple. The millet planted in Big Pond was a poor crop due to wetness and late planting.

2. Trees and Shrubs

None

3. Upland Herbaceous Plants

None

4. Cultivated Crops

Permittees harvested 27½ acres of corn and left in the fields 7½ acres of corn and 8 acres of alfalfa for wildlife use.

C. Collections and Receipts

1. Seeds and other Propagules

None

2. Specimens

A bald eagle found shot in a hollow near Cassville was sent to Patuxent for pesticide analysis.

D. Control of Vegetation

Other than the approved use of sprays by cooperating farmers for control

Control of Vegetation . . . . . continued

of weeds on refuge croplands, vegetation control through the use of chemicals was not attempted.

E. Planned Burning

None

F. Fires

None

IV Resource Management

A. Grazing

None

B. Haying

None

C. Fur Harvest

Trap tag sales were down from last year despite high fur prices for muskrat. High water had an adverse effect on muskrats as well as trapping. Data obtained from the muskrat house count revealed a higher rat population, but it is not known to what degree the high water affected the population. The district beaver population is still low in numbers, but believed to be increasing.

D. Timber Removal

None

E. Commercial Fishing

The commercial fishermen had a rather poor year. For a short time the price of buffalo was at 28¢ per pound, but the fish were hard to find. Trot line fishermen also found fishing rather poor this year.

F. Other Uses

None

V Field Investigation or Applied Research

A. Wood Duck Management Studies

1. Wood Duck Nest Boxes

It has been found on the district that nest boxes are rarely used by

Wood Duck Nest Boxes . . . continued

wood ducks and that there are enough natural cavities in the area to meet the ducks needs.

2. Artificial Nesting Cavities

There were no new cavities made this year.

3. Wood Duck Flight Counts

Wood duck spring flight counts were conducted the last week of April and the first week of May. The counts were much higher this year than last. On the basis of these counts and general observations it is the opinion of the manager that the district wood duck population is up from that of previous years.

4. Fall Roost Counts

The fall roost counts were conducted during the last week of September. These counts were also up from those of last year. One new roost was located in the McCartney Landing area.

B. Wood Duck Banding

After a late start due to high water levels the banding program progressed steadily. The cannon net was used this year along with the swim-in type traps. The breakdown on the nember and age classes banded in 1971 is shown below.

Wood Duck	AHYM	AHYF	HYM	HYF	LM	LF	UNK	TOTAL
	11	2	405	361	5	8	4	796

C. Waterfowl Hunter Bag Checks

A total of 331 hunters were checked this season for a 1.71 ducks per day average. This was up over last year's average of 1.39. (See bag check summary)

D. Vegetative Transects

A vegetative transect was run on Big Pond on September 28, 1971. The transect revealed denser stands of Chufa, rice-cut grass, arrowhead and spike rush then last year. Also new plants such as cockelbur, dock, nettle and maple were found along the line. Rose mallow is becomming deneser and spreading.

UM-
11A

VI. PUBLIC RELATIONS

A. Recreational Use Cassville District

1971	FISHING	MISCEL-LANEOUS	HUNTING			TOTAL DAYS USE
			DUCKS	DEER	OTHER	
Spring	9070	6054			30	15154
Summer	13762	120486				134248
Fall	23750	67705	3930	110	740	96235
TOTAL DAYS USE	46582	194245	3930	110	770	245637

	1969	1970	1971
Fishing	51592	66193	46582
Hunting	3770	3560	4810
Misc. Use	36138	116119	194245

The above figures do not reflect current trends because of the new division of the district.

REFUGE VISITORS

Refuge: Cassville District - Upper Miss. River Refuge
Period: 1971

DATE	PERSONS	PURPOSE
1-20	Ron Ellingson (DNR)	Discussion of summer NYC program
2-17	Forrest Carpenter	Inspection of new office and warehouse
2-17	Dr. William Green	Inspection of new office and warehouse
6-4	Gene Patten	Courtesy call
	Don Gray, other refuge personnel, and	
	Albert Kwallek (DNR) and other visitors on numerious occasions.	

REFUGE PARTICIPATION
Refuge: Upper Miss. Refuge Cassville District
Period: 1971

DATE	PERSONNEL	ACTIVITY
1-12	Hutchinson	Attended Cassville Civic Club Luncheon
2-16	Hutchinson	Attended NRA Hearing in Dubuque, Iowa
3-22	Hutchinson	Attended Grant County Conservation Hearing, Lancaster, Wis.
3-23	Hutchinson	Gave talk and showed film to Potosi Elementary School
3-24	Hutchinson	Gave talk and showed film to St. Charles and Prairie du Chien Elementary
3-25	Hutchinson	Gave talk and showed film to Cassville High Science Class
3-26	Hutchinson	Gave talk and showed film to Cassville Elementary School
4-3&4	Hutchinson & Smith	Migration Days Program, Potosi Pier
6-16	Hutchinson & Smith	Wisconsin Girls Camp, mist neeting, cannon net demo., toured ponds.
6-16	Hutchinson	Slide talk at St. Peter's Lutheran Church, Cassville
9-21	Hutchinson	Slide talk at Potosi Elementary School
9-24	Hutchinson	Rode C of E boat from Guttenberg to Dubuque, dredge disposal
10-20	Hutchinson	Showed film to Cassville Elementary School
10-21	Hutchinson	Showed films to St. John's Students at Wyalusing State Park
10-26	Hutchinson	Gave firearm saftey class to Cassville 7th and 8th graders
12-29	Hutchinson	Attended Environmental Thrust Meeting at Prairie du Chien, Wis.

D. Hunting

The deer hunters were only allowed two days in the Dago Slough Closed Area this season due to the waterfowl season. The area was well saturated with hunters both days, but only four deer were taken. Approximately ten deer were taken on the district.

Upland game hunting consisted mainly of squirrel hunting along with some grouse and rabitt hunting. There was an excellent mast crop this year and the squirrel population was high.

Waterfowl hunting was off to a very warm start in October. Hunters found shirt-sleeve weather and a large number of wood ducks and teal. Mallards were in a short supply untill the last part of the season. Blue-winged teal replaces wood duck as number one spot in the hunters bag, followed by wood duck then mallard.

E. Violations

See page 17.

F. Saftey

We are again pleased to report that there were no accidents involving refuge personnel. Saftey instructions were given to the summer assistant and to the N.Y.C. students before the work program began and on numerous other occasions. Various topics of saftey were discussed at staff meetings throughout the year.

VII Other Items of Interest

A. Items of Interest

Student Assistant Mark D. Wagner completed his second summer on the district. His enthusiasm for the job and his extra efforts put forth made him an excellent working companion. Mark is applying for duty with the Peace Corps following graduation from Iowa State University in June.

The district was fortunate to acquire the part-time help of four NYC students this summer. A great deal of work was accomplished that otherwise would not have been done.

B. Credits

Report written and typed by William H. Hutchinson.

UM-13

Bag Check Summary of Species Taken
Upper Mississippi River Wildlife and Fish Refuge
Period: 1971
Cassville District

	1969	1970	1971
No. hunters checked	252	84	331
No. ducks checked	323	117	568
Average ducks per day	1.28	1.39	1.71

Species	No.	%	No.	%	No.	%
Mallard	51	15.79	14	11.96	33	5.81
Black	3	.93	1	.85		
Gadwall	2	.62				
Baldpate	23	7.12	5	4.27	1	.19
Pintail	3	.93			2	.35
G.w.teal	21	6.50	14	11.96	26	4.57
B.w.teal	56	17.34	28	23.93	262	46.12
Shoveller	4	1.24			2	.35
Wood duck	155	47.99	55	47.00	241	42.42
Redhead						
Ring-neck					1	.19
Canvas-back						
Scaup	4	1.24				
Golden-eye						
Buffle-head	1	.30				
Ruddy						
Mergansers						
Scoter						
Old squaw						

Hunters took ducks as follows:

4*	9	3.57	2	2.38	13	4.43
3*	33	13.09	16	19.04	32	10.92
2	46	18.25	16	19.04	66	20.13
1	67	26.59	24	28.57	90	30.71
0	92	36.51	25	29.76	92	31.39
Aver. ducks lost	.16		.15		.33	
Aver. hours per day	5.15		6.89		3.95	
Aver. hours per duck	5.38		4.58		3.74	
Coot killed	8		4		23	
Geese killed	4		0		2	

1971 Limit: Wisconsin Duck Season
4 ducks
2 bonus Blue-winged Teal Oct. 2-10
2 bonus Scaup Nov. 1-20

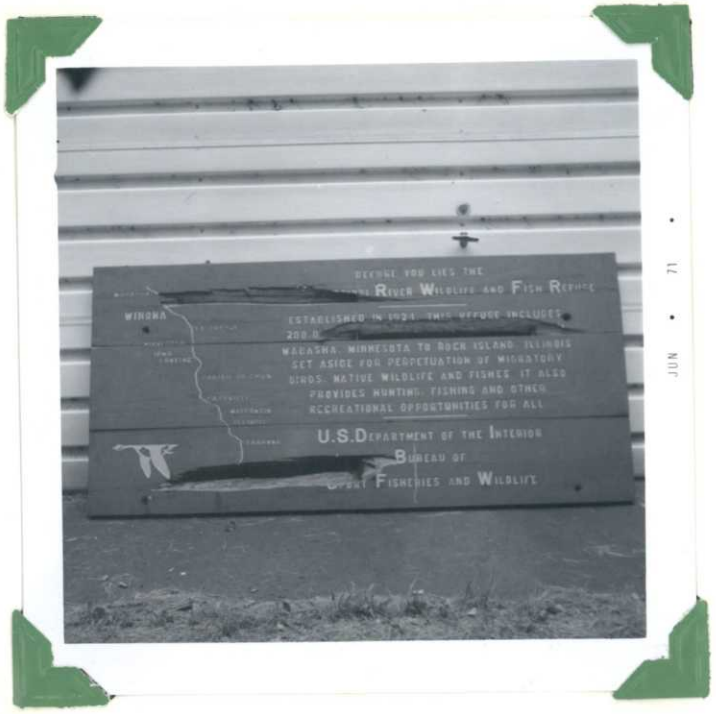
VIOLATION APPREHENSION SUMMARY

Refuge: Upper Miss. Refuge Cassville District
Period: 1971

DEFENDANT	ADDRESS	OFFICER	OFFENSE	DATE	PENALTY	JUDGE
G. Roling	Dickeyville, Wis.	Hutchinson	loaded gun in car	4/2/71	50.00/9.00	Rienecke
R. Siltala	Fennimore, Wis.	Hutchinson	excess possission of wood ducks	10/2/71	25.00/9.00	Rienecke
M. Chamberlain	Streamwood, Ill.	Hutchinson	loaded gun in boat with motor running.	10/17/71	50.00/9.00	Rienecke
K. Schmidt	Elgin, Ill.	Hutchinson	same as above	10/17/71	juvenile	
J. Hughes	Fall River, Wis.	Hutchinson	hunting in a closed area	10/9/71	50.00/9.00	Rienecke
T. Tjugum	Sun Prairie, Wis.	Hutchinson	hunting in a closed area	10/9/71	50.00/9.00	Rienecke
M. Machkobich	Sun Prairie, Wis.	Hutchinson	hunting in a closed area	10/9/71	50.00/9.00	Rienecke
R. Smith	Platteville, Wis.	Hutchinson	hunt before legal hours	10/31/71	25.00/9.00	Rienecke

This bald eagle was found shot in a hollow near Cassville. The identity of the culprit is still unknown.
2-3-71 WHH

This black walnut was illegally cut and left after it split upon falling. The tree was salvaged, but at a much reduced price. The identity of the loggers is still unkown.
3-12-71 WHH



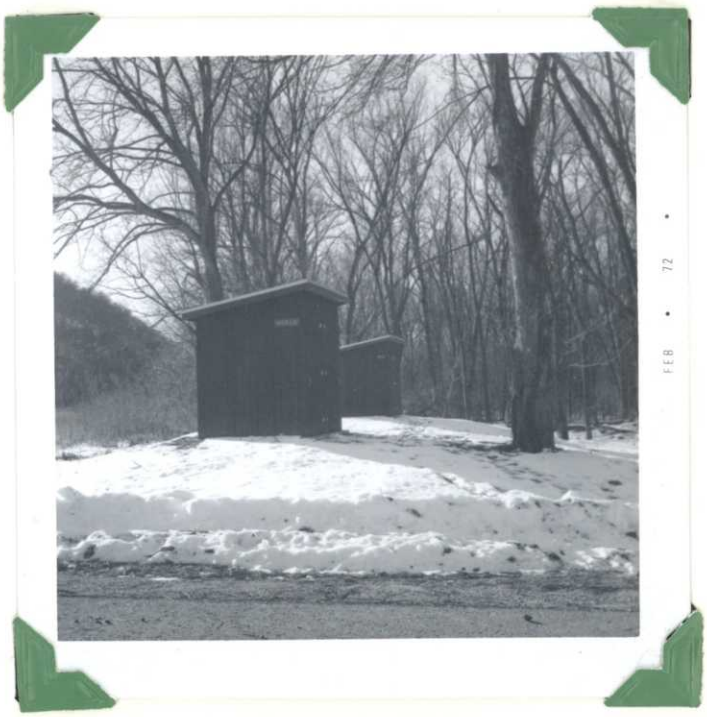
This refuge sign was struck by lightening in Nelson Dewey State Park during a June storm. The chunks of wood were blown 100 feet from the sign. 6-21-71 WHH

Future conservationists at work! Local youths are trying their hand at wood duck banding. 8-22-71 WHH

Summer student Mark Wagner adds the finishing touch to a new recognition sign at Bagley Bottoms Landing.
7-10-71 WHH

Fluctuating water levels caused ice to girdle this tree. Apparently damage was severe enought to kill the tree. 6-1-71 WHH

The older type comfort stations above were replaced this year by the new pre-fabricated, double door, vault type toilets below at the boat landing at Wyalusing State Park. 12-8-71 6-1-71 WHH



Migration Days were held on April 3 and 4, with over fifteen species of waterfowl to observe. About 225 people attended the event. 4-3-71 WHH

Manager Hutchinson and NYC worker Dan Worsham are installing an anti-litter sign at the Wyalusing beach. 6-30-71 WHH

SIGNATURE PAGE

Submitted by:

William H Hutchinson
(Signature)

William H. Hutchinson
Refuge Manager
Title

Date: March 1, 1972

Approved, Regional Office:

Date: MAR 10 1972

James B. Monnie
(Signature)

ACT

Regional Refuge Supervisor

SAVANNA DISTRICT

C.O. copy

NARRATIVE REPORT

UPPER MISSISSIPPI RIVER NATIONAL WILDLIFE REFUGE

SAVANNA DISTRICT

CALENDAR YEAR 1971

United States Department of the Interior

Fish and Wildlife Service

Bureau of Sport Fisheries and Wildlife

Savanna, Illinois

C O N T E N T S

I. GENERAL

A. Weather Conditions - 1971

Data obtained from Lock & Dam 13, Fulton, Illinois

MONTH	Precipitation Total	Precipitation Normal	Precipitation Snowfall	Temperature Max.	Temperature Min.	Temperature Mean Av.	Temperature Normal Mean Av.
January	1.32	1.57	14.00	43	-10	16.0	24.3
February	2.64	1.31	1.70	60	-10	25.0	27.7
March	1.33	2.75	10.00	75	14	34.2	36.1
April	2.01	3.20	Trace	80	17	50.5	50.8
May	1.82	3.42		88	34	59.4	62.1
June	6.64	4.78		97	53	75.5	72.1
July	2.38	3.33		90	49	72.3	77.3
August	2.27	3.65		92	51	71.5	74.6
September	3.51	4.06		92	39	69.1	68.9
October	2.12	2.26		90	34	61.7	65.6
November	2.57	2.17	3.00	68	17	40.3	39.6
December	4.64	1.68	Trace	52	10	32.4	26.0
Annual Totals	33.25	34.26	28.70	97	-10	50.66	51.42

Below normal precipitation was recorded during eight months of the year. However, the annual total was only 1.01 inches below normal. Total snowfall for the year was approximately .4 inches above the norm.

Mean average temperatures were below normal for eight months of the year and the resulting annual mean was .8 degrees below normal. During late July and early August, 16 straight days of below normal temperatures were recorded. The last killing frost recorded May 12 and the first killing frost on November 1 resulted in a 172 day growing season this year.

UM-1 Rev.
1964

B. Habitat Conditions
1. Water- 1971

POOL LEVELS

Pool No. 13 at Savanna - Sabula Railroad Bridge Normal: 11.1

MONTH	HIGHEST LEVEL	LOWEST LEVEL	AVERAGE LEVEL	DATES OF HIGH LEVEL	DATES OF LOW LEVEL
January	11.3	10.9	11.1	6,7,8	3
February	14.5	10.9	11.7	21	8,9,10,12,17
March	13.2	11.9	12.3	15	18
April	16.6	12.6	14.5	23	1
May	13.6	11.6	12.1	1	16,17,22,23,27
June	12.9	11.4	12.1	4,5	28,29
July	11.7	10.8	11.2	14,15	31
August	11.5	10.5	10.8	14	8,29,30
September	11.2	10.6	10.8	5	16,17
October	11.2	10.8	11.03	30,31	20
November	12.3	11.2	11.9	13,14	1
December	12.0	11.2	11.6	1,2	20

Mississippi River pools remained at winter drawdown levels through the second week of February. On February 17-19, warm temperatures and heavy rains caused flash floods on all major tributary streams in the district. This was primarily due to the fact that the main channel was completely ice covered. As the rush of water and ice reached the Miss. River, ice jams formed which backed the water up the tributaries and flooded adjacent lands. Most of the main channel was free of ice by March 16, however, some back sloughs remained ice covered through the end of the month.

The spring flood crested on April 22 and was approximately two feet above flood stage. The river started to recede after this date, however, heavy

rains during the first week of June resulted in above normal levels being recorded through the second week of July. The average level was below normal during August and September with October, November, and December averages above normal. As the normal average water level was only closely approached during three months of the year, one almost begins to wonder if the Mississippi River is ever normal.

Spring Lake Area: The upper Spring Lake controls were open for winter drawdown at the beginning of the year. However, on February 19, the controls were closed as rising river levels had increased the impoundment level to 583.45 feet. As flood predictions indicated a water crest higher than the cross-dike, the controls were again opened on March 17. On April 13, water topped the spillway and the flood crest (588.6') came within one tenth of a foot of topping the dike on April 22.

Gravity flow lowered the water level to 584.0' by the end of May and on June 1 pumping was initiated. An elevation of 581.95' was attained by June 10 and an average elevation of 581.2' maintained through August.

Reflooding was initiated by gravity flow on September 20, however, the desired elevation of 583.6 was not reached until November 1. This delay was caused by beaver activity and low river levels.

On December 15, the pump control was opened for winter drawdown, however, rising river levels again necessitated closing the control on December 27 at an elevation of 583.7'.

Pleasant Creek Area: All plugs were open for winter drawdown at the beginning of the year. On February 19, the Maquoketa River flooded the entire area with a peak elevation of 591.5' recorded. All impoundments remained flooded out of their banks through June 27. On July 7, plugs 1 and 3 were finally closed at elevations of 586.0'. Lack of precipitation dropped the impoundments below the desired elevation in late August and low levels were recorded through October.

On November 2, the controls for plugs 1 and 3 were opened to take advantage of rising river levels, however, the river continued to rise flooding all impoundments out of their banks. By the end of December, the water levels were back down to 586.5' and both controls remained open for winter drawdown.

Plug 2 remained open during the summer period for moist-soil plant production. Low river levels impeded reflooding the impoundment until November 2. As was the case for plugs 1 and 3, the river continued to rise flooding the impoundment out of its banks. The control remained open at the end of the year.

Due to the lack of sufficient dikes and water source (during periods of low river levels), successful water management in this area is extremely difficult.

2. Food and Cover:

Spring Period: The Potter's marsh area near Thomson, Illinois again received the most use by returning puddle ducks and geese. Approximately 80 percent of the mallard peak population was recorded on the area. Flooded farmfields in the Green Island area also proved very attractive to all species of puddle ducks.

The upper Spring Lake impoundment received fairly heavy puddle duck use during the period. These birds also completely utilized the corn that remained in refuge farmfields on the unit.

The open pool areas just above Lock & Dams 12 and 13 were again the principal diver feeding areas in the district. Gomer's Lake, upper Spring Lake and Pool #14 near Le Claire received moderate diver use.

Flash floods of feeded streams adversely affected furbearers and other resident species in February. The primary areas affected were Pleasant Creek and Green Island(flooded by Maquoketa R.), Plumb River bottoms(Plumb R.) and the Wapsi - Princeton areas(Wapsipinicon R.). In late April, the Mississippi River flood inundated most bottomland areas. This high water forced most resident species to seek shelter on higher lands adjacent to the refuge.

Summer and Fall Periods: High diver use during the fall migration indicated that the loss of submerged plants in lower Spring Lake was not as extensive in 1971 as has been the case in past years. Wave action usually uproots most of the sago pondweed prior to the arrival of fall migrants.

An excellent vegetative growth was achieved through drawdown in upper Spring Lake. Smartweed showed a tremendous increase with over 200 acres of dense, head-high stands recorded. Lotus and sagittaria beds showed a marked decline throughout the unit. Most of the impoundment had a dense mat of spike rush under an overstory of smartweed, wild millet, rice-cutgrass and other herbaceous species. Twelve acres of millet were hand seeded on the area. Although heavy rains washed most of these plantings out, one four acre plot produced excellent seed heads and was heavily utilized. This area is an outstanding example of the benefits derived through drawdown. Only two years ago the impoundment contained a solid stand of lotus and sagittaria with almost no other beneficial plants present.

Excellent aquatic plant production was noted in plug 1 and 3 impoundments in the Pleasant Creek unit. Fair stands of rice-cutgrass and

smartweed responded to the drawdown of the plug 2 impoundment. However, water management in the Pleasant Creek area is hectic to say the least as normal increases in the Miss. R. top the roads and flood the entire area.

Moist-soil plants again responded to low water levels in the Pool #13 bottoms. This food was not heavily utilized by waterfowl, however, as water levels did not increase and flood these areas until after the waterfowl hunting season had opened. Hunting activities then discouraged birds from feeding in these areas until freeze-up.

An excellent nut crop was noted in the bottoms this year. This mast provided squirrels, deer and wood ducks with an abundance of food in some areas.

Refuge croplands provided some food for both upland game and waterfowl. The Spring Lake cornfields received the heaviest waterfowl use. Pleasant Creek farmfields were summer fallowed and planted to winter rye. Although this crop was used by deer during the fall period, no goose use was noted.

Large lotus and sagittaria beds provided excellent brood cover during the summer. The most significant use was noted in early September when large roosting flights of wood ducks were observed in the Potter's marsh and Green Island areas.

Winter Period: The Princeton, Green Island, Potter's and upper Spring Lake marshes provide excellent food and cover for upland game and white-tailed deer. Brush edges along refuge cornfields are especially attractive to rabbits, bob-white quail and hungarian partridge. Heavy deer use was also noted on river islands near Sabula after freeze-up.

II. WILDLIFE

A. Migratory Birds

1. Waterfowl.

Ducks (January - April, 1971): Due to the fact that the district is a one man station, the priority placed on refuge objectives writing outwayed accurate waterfowl censusing during this period. Only one complete census was taken following techniques set forth in the wildlife inventory plan. Other totals were determined through spot checks and comparisons with past years. Therefore the following data is undoubtedly of a low reliability class.

All species except teal and ruddy ducks arrived on the district by the second week of March. The arrival dates were approximately the same as last year.

A peak population of 42,100 birds was recorded during the first week in April. The peak populations were also recorded during this week in 1969 and 1970. This total represented a percent change of -8.2% from 1970 and -1.9% from the past five-year average.

Mallards and lesser scaup were again the most common migrants with peak populations of 13,620 and 16,000 respectively. Mallards, green-winged and blue-winged teal, golden-eyes and common mergansers showed increases in peak numbers over last year. Common mergansers showed the greatest increase with a percent change of +166.0%. Redheads, ring-necks and ruddies showed the largest declines from last year. Redheads and ring-necks were down 60 percent and the ruddy peak represented a percent change of -54.5%.

A cinnamon teal was sighted at Potter's marsh during the third week of March. This specie is rarely sighted along the river.

A total of 1,191,654 use days was recorded for the period. This total was 9.7 percent above last year and represented a percent change of +24.5% from the five-year average.

Lesser scaup and mallards again contributed the most use days and constituted 32.20 and 30.52 percent of the total respectively. Wood duck use days were up 38.7 percent from 1970.

Major movements of birds out of the district were noted during the second and third weeks of April. By the end of the period, 5610 ducks remained on the area.

Ducks (May - August, 1971): The mallard breeding population was again estimated at 800 birds this year. The Mississippi River was quite high during the nesting season and production to flight stage was estimated to be only 150 birds. This is a very rough estimate, however, as it is based on broods sighted during routine summer activities.

Local movements of mallards to the river from adjacent areas resulted in a peak population of 1,500 birds during the last week of the period. This peak was 16.7 percent down from 1970.

An estimated breeding population of 800 wood ducks produced 200 young to flight stage. These breeding population and production totals were down 20 percent from last year. Again this production is based on summer brood observations. Roost counts during early

September indicated that better production actually occurred on the district.

The peak population of 3,350 birds recorded during the period was down 31.5% from last year and 19.3% from the five-year average. Use days recorded this year,(249,830), resulted in a percent change of -9.2% from 1970 and dropped 10.9% below the five-year average.

Ducks (September - December, 1971): Blue-winged teal were again the first fall migrants to arrive on the district. The peak population of 2,500 birds represented no change from last year. By the third week in October, most of these birds had moved out on their southward migration.

All common species of puddle ducks were noted on the district by the third week in September. This arrival period was approximately the same as last year.

Peak populations of black ducks, gadwalls, baldpate, pintails, green-winged teal and shovelers were recorded during the week ending October 23. Pintails and green-winged teal populations experienced the only decreases from last year, (39.6% and 24.4% respectively). Increases of 63.3 to 195.0 percent over 1970 totals were noted for the other species.

A peak of 4,000 wood ducks was recorded during the first week in October. This figure represented a percent change of -20.0% from last year. Most of these birds had migrated out of the district by October 23.

The mallard population increased substantially during the second week in October. A peak population of 28,000 birds was recorded on November 13,(one week later than 1970). This peak represented an increase of 40.4 percent from 1970. The population dropped to 15,000 birds on November 27. Freeze-up forced most of these birds southward during the third week of December. A wintering population of 1,500 remained on the district at the end of the period. Mallard use days increased 71.8 percent over 1970 with approximately 90 percent of this use recorded on the Spring Lake area.

Peak populations for most species of diving ducks were recorded on November 13. All species of divers except ruddy ducks and ringnecks were up from last year. Common mergansers showed the greatest change with an increase of 214.3% over last year. Redheads showed a percent change of +108.3% from 1970. The most common migrant was again lesser scaup with a peak of 20,000 birds. This total was recorded on November 13, when 22,000 divers were observed on lower Spring Lake. Most of these birds departed during the

fourth week of November. At the end of the period, a wintering population of 200 goldeneyes and 800 common mergansers remained on the refuge.

The 2,403,310 use day total for the period represented an increase of 56.5% over last year and 99.2% above the five-year average. The 52,160 bird peak population for all species represented a percent change of +56.4% from 1970 and +92.4% from the past five-year average.

Geese: On February 20, the first migrant geese returned to the refuge. This was approximately the same arrival date as recorded in past years. During the fourth week in March, a peak population of 3,970 Canada geese was recorded. This total was down 56.2 percent from 1970. Thirty blue and snow geese were observed on March 20. This peak population represented a percent change of -78.6% from last year. Four white-fronted geese were sighted during the migration. Although total use days were down 36.8% from last year, a percent change of +104.5% from the five-year average was noted. Most of the migrants left the area during the first week in April.

A breeding population of approximately 42 Canada geese remained on the area this summer. However, due to flooding and illegal shooting, production to flight stage was estimated to be only 30 birds.

During the first week of October, the first fall migrants appeared on the district. A peak of 1,020 blue and snow geese was recorded during the last week of October. Canadas peaked during the second week in November at 850 birds. Although Canadas and blue and snow geese were down 47.2% and 36.9% respectively from 1970, these birds maintained higher average peaks resulting in more use days being recorded during the 1971 fall period.

The 155,756 use day total for the year represented a percent change of -23.8% from 1970 and +100.6% from the past five-year average.

Swans: No swans were sighted during the spring migration and only four were recorded in the fall. This total was down from 1970 when five birds were recorded in the spring and 20 in the fall.

2. Other Water Birds.

Coots: The first spring migrants were noted during the first week in March. The spring peak population of 8,000 birds was down 1.8% from last year. A peak population of 10,000 birds was noted during the week ending October 23. This peak represented an increase of 4.7 percent from 1970. Arrivals, departure and peak population dates were approximately the same as last year.

A total of 458,870 use days was recorded this year. This total represented a percent change of -2.2% from 1970 and was 20.0 percent above the past five-year average.

Egrets: The first American egret was sighted on April 24. The two rookeries produced an estimated total of 20 young this year. The 300 bird peak population was recorded on September 11 and was approximately the same as reported last year. The last sighting was recorded on October 23.

one snowy egret was sighted on the Spring Lake cross-dike in mid July.

Herons: Great blue and little green herons are common spring, summer, and fall residents. Peak populations were estimated at 650 and 250 respectively. Great blue heron rookeries produced 60 young this year. An unusually late sighting was recorded on December 11 when six great blue herons were observed in Spring Lake. Black-crowned night herons are frequently observed during spring and fall migrations.

Bittern: American bittern are occasionally sighted during the spring and fall periods. Several least bittern were observed in the large lotus beds of Potter's marsh during the third week in September.

Grebes and Loons: A peak of 350 pied-billed grebes was recorded on October 23. These birds are common spring and fall migrants through the area. Ten common loons were sighted just above Lock & Dam #13 on October 30.

Double-crested Cormorants: These birds are common spring and fall migrants with a small population remaining on the area during the summer period. One nest was sighted in the "west lake" area near Spring Lake this year. The 1,500 bird peak observed on October 9 was far larger than the 300 bird peaks recorded the past few years. These birds are protected in Illinois but frequently are shot by nimrod "blue goose" hunters in the area.

Gulls and Terns: Spring peaks of 500 herring gulls and 6,500 ring-billed gulls were observed this year. One Franklin's gull was commonly sighted near the Spring Lake pump in June. Fall peaks of 150 herring and 1,500 ring-billed gulls were recorded with 200 ring-bills remaining on the area at the end of the year.

Common and black terns are fairly common spring and fall migrants. Small populations of both species remain on the area during the summer period.

3. Shorebirds.

Wilson's Snipe: A peak population of 300 birds was recorded during the first week in October.

Rails: Sora rails are fairly common spring and fall migrants. An unusually large number of birds,(150), were observed in upper Spring Lake during the first week of May. The district peak was estimated to be approximately 300 birds at that time.

Woodcock: This specie is occasionally sighted during spring and fall migrations. A slightly higher than normal peak of 50 birds was sighted during the first week in October.

Other Shorebirds: Lesser yellowlegs and spotted sandpipers are common during the spring, summer and early fall periods. A peak population of 210 yellowlegs was recorded on September 25 and 500 spotted sandpipers on August 7. On July 21 - 22 the following species were observed on dewatered portions of upper Spring Lake; killdeer, lesser yellowlegs, dowitchers and spotted, solitary, pectoral, least and semi-palmated sandpipers.

4. Mourning Doves.

An estimated peak population of 2,000 birds was recorded on August 28. Although most of these birds departed in mid September, a few remained through the winter period.

1965
"M-9A

Refuge: Upper Mississippi, Savanna District
Period: **Calendar Year** 1971

B. Upland Game Birds

SPECIES	POPULATION JAN. 1	YOUNG PRODUCED	NUMBER STOCKED	GREATEST NO. PRESENT	TAKE	LOSS	POPULATION DEC. 31
Ring-necked Pheasant	50	30	-	80	20	-	60
Ruffed grouse	-						-
Bob-white quail	90	40	-	150	40		100
Gray partridge	25	20	-	40	10		30
Wild turkey	5	-	-	10	-		4

Increases were again noted in pheasant, quail and partridge populations. Hunter success was up slightly for both ring-necked pheasants and bob-white quail.

During the summer, eight wild turkeys were sighted just below the Spring Lake area and three were observed in the upper Spring Lake unit.

C. Big Game Animals (White-tailed deer)

POPULATION JAN. 1	YOUNG PRODUCED	GREATEST NO. PRESENT	HUNTER TAKE	LOSSES	POPULATION DEC. 31
215	60	270	50	5	200

Refuge white-tailed deer populations decreased in late April due to high water. The peak population was recorded during the fall period when harvesting operations of corn on adjacent private lands forced the animals to seek cover in the timbered river bottoms. Harvest information for the 1971 season is covered under Section VI,D.

The Wapsi, Spring Lake, Pleasant Creek and Keller's Island areas again held the highest deer concentrations. Small islands just above Sabula are holding an unusually high concentration of deer this winter.

UM-14
Rev.
1965

Refuge: Upper Mississippi, Savanna District
Period: Calendar Year 1971

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

SPECIES	POPULATION JAN. 1	YOUNG PRODUCED	GREATEST NO. PRESENT	TAKE	CON-TROL	LOSS	POPULATION DEC. 31
Muskrat	19,000	16,000	35,000	11,150*		6,000	17,850
Mink	160	120	280	20*		30	230
Beaver	180	450	1,340	200*		100	1,040
Otter	55	20	75	10		10	30
Raccoon	5,200	2,000	7,200	120*		1,500	5,000
Red Fox	35	15	50	5*		20	25
Gray Fox	10	5	15	-		5	10
Skunk	55	50	105	-		35	70
Cotton-tail Rabbit	300	450	750	250		150	350
Opossum	500	250	750	15*		235	500
Gray & Fox Squirrels	1,800	1,000	2,800	300		300	2,200
Woodchuck	110	50	160	-	23	22	115
Badger	25	10	35	-	-	15	20

* Estimates on 1971 take as all fur catch reports have not yet been received.

Fall muskrat house counts resulted in an estimated fall population of 35,000 animals prior to the 1971 trapping season. This total represented a slight increase from the 33,000 estimate recorded last year.

Beaver populations experienced an amazing increase. This was probably due to the fact that the entire district has been closed to trapping on the Illinois side for the past two years. Also, the Iowa population has increased due to very light trapping pressure. Lodge counts resulted in 54 active colonies recorded. Expansion factors applied to this figure resulted in an estimated total population of 1,340 beaver.

Wintering populations of mink, skunk, cottontail rabbits, squirrels and woodchucks were estimated to be up slightly from last year. Other species either stayed the same or decreased slightly.

E. Hawks, Eagles, Owls, Crows and Vultures.

Hawks: Red-tailed and marsh hawks are commonly sighted throughout the year with slight increases noted during spring and fall migrations. Sparrow hawks are common during the summer and occasionally sighted throughout the winter. Red-shouldered and rough-legged hawks are most often observed during spring and fall migrations. All common species of hawks frequent upper Spring Lake in early fall. This area is an excellent hunting ground when reflooding operations force small rodents out of the dense ground cover.

Eagles: The 1971 eagle survey recorded a total of only 14 bald eagles on the district. This was due to the fact that warm weather and resulting open water enabled the birds to find an abundance of food throughout the area. Normally they are restricted in this respect and more easily counted.

The last spring sighting was recorded on April 17, One adult bald was sighted at Pleasant Creek on August 14. This indicates that perhaps there is a nest somewhere in the district.

The first winter arrivals were noted on November 6. On November 27, one adult golden eagle was sighted at Spring Lake. Approximately 40 bald eagles had arrived on the district by the end of December.

Owls: Great-horned, barred and screech owls inhabit the river bottoms throughout the year. One snowy owl was sighted near Lock & Dam #13 on February 13.

Crows: These birds are common refuge residents throughout the year. A peak population of 850 birds was recorded on September 11.

Vultures: Turkey vultures are commonly sighted along pools #12 and #13 throughout the spring, summer and fall periods. A peak population of 40 was recorded during the week ending September 11.

F. Other Birds. Nothing significant to report.

G. Fish.

Spring Lake was again the best fishing area for catfish in the district. This area also produces some outstanding ice fishing. Walleye fishing below the lock and dams and stripped bass fishing over submerged wing-dams produced excellent catches this year.

Crappies, bluegills, catfish, walleyes and stripped bass(listed in order of importance) are the most common fish taken. However, carp and sheepshead are often caught during the summer period. Fishing visits declined with only 185,374 being recorded this year. This total represented a drop of 59,406 visits from 1970.

H. Reptiles.

Painted, snapping and soft-shelled turtles are common on the district. Although not abundant, Blanding's box turtles are found on the Native Sand Prairie and occasionally are found in dove traps on the area.

Common water snakes, hog-nosed snakes, bull snakes and garter snakes are common throughout the district. Timber rattlesnakes are fairly common in bluff areas adjacent to the refuge.

I. Disease. None observed this year.

III. REFUGE DEVELOPMENT AND MAINTENANCE

A. Physical Development and Maintenance.

Three local farmers were hired to remove all dead elms along roads in the Pleasant Creek closed area. A total of 817.4 tons of crushed rock was delivered and spread on these roads.

A large washout was filled in the Spring Lake high dike. Many small washouts were also repaired and seeded in this dike. One .6 acre portion of the dike was seeded with crown vetch to stop erosion. Approximately one acre of bare soil was seeded with rye on the cross-dike. Flood damaged portions of the cross-dike were repaired with 500 tons of rip-rap. A 500 foot chain-link fence was installed around the Spring Lake pump to alleviate vandalism and trespass problems.

The refuge recognition sign, two RR crossings, one control structure and two miles of access road were brushed out.

A one mile, self-guided nature trail was established at Miller's Lake. This included hand clearing brush, building two foot bridges,

90 yards of log walk-way and approximately ½ mile of border logs. This work was completed by the summer work-study boys and young prisoners from the Palisades Boys Camp.

All district closed area boundaries were checked and reposted as necessary,(approx. 26 miles). All main channel islands were posted in Pool #13 and a majority of Pool #12 was checked and reposted.

A large anti-litter sign was installed at the Miller's Lake boat ramp. The large Miller's Lake nature trail sign was installed and a new refuge interpretive sign placed on lookout point in the Palisades State Park. State park personnel installed all of these signs and did a commendable job.

Litter cleanup on district sandbars was not as time consuming this year. A total of 15 man-days were expended and 2400 lbs. of litter removed. All areas were posted with anti-litter signs and remained much cleaner than last year. Two miles of roadside hedges were also cleaned of litter at the Thomson public use site.

Development and Maintenance Work (contracted).

No official contract jobs were initiated this year. Small jobs were completed by purchase order and were reported under the previous section.

B. Plantings.

1. Aquatic and Marsh Plantings: Twelve acres of millet were hand seeded in the pool bottom of upper Spring Lake. Heavy rainfall was received shortly after germination, however, and most of the plots were drowned out. One four acre plot produced heavy seedheads and was completely utilized by migrant waterfowl.

2. Trees and Shrubs: None.

3. Upland Herbaceous Plants: None.

4. Cultivated Crops: No crops are planted by refuge personnel. A total of 175.6 acres was cultivated by five permittees in 1971. This acreage included 80.6 acres of corn, 10 acres of soybeans and 79 acres of winter rye. One acre was fallow this year.

A total of four acres of refuge corn was harvested. The remaining refuge share was left in the field for wildlife use.

C. Collections and Receipts.

A total of 3,675 trap tags were sold @ 10¢ for a return of $367.50.

D. Control of Vegetation.

Spot applications of 2,4-D were applied to roadside brush in the Pleasant Creek and Spring Lake closed areas.

E. Planned Burning.

None conducted during the year.

F. Fires.

No wild fires were noted on refuge land this year.

IV. RESOURCE MANAGEMENT

A. Grazing. None.

B. Haying.

A total of 18.3 acres of alfalfa hayland exists on the refuge. No hay was harvested from the 14.6 acre Potter tract and only eight tons were harvested by the Spring Lake permittee.

C. Fur Harvest, 1970-71.

A total of 89 permits were issued as compared to 109 last year. Results from only 67 permittees were obtained, however, as six did not trap and 16 did not report their success. Trapping pressure was down from last year as was the catch for all species of furbearers. The total value of the catch, ($ 5,789.54), was far below last years total of $ 12,245.40 (see following table, "Analysis of Fur Catch*Value*Tag Sales", for further details).

D. Timber Removal.

No cuttings were conducted on Bureau Fee lands. One operation by the Army Corps of Engineers, (contracted in 1969), was conducted just north of the Maquoketa River. Initial clearing for expansion of the Pleasant Creek public use area was also conducted by the Corps.

E. Commercial Fishing.

A total of 42 commercial fishing permits were issued for lower Spring Lake this year. Best success occurred during the spring spawning run with buffalo and sheepshead constituting the majority of the take. Commercial fishing visits were estimated at 9,020 for the entire district.

ANALYSIS OF FUR CATCH * VALUE * TAG SALES

Upper Mississippi Refuge - Savanna, District
Period: 1970-71 Trapping Season

Pool No.	No. fur catch reports returned	Muskrat	Mink	Raccoon	Beaver	Fox	Opposum
12	26	2,468	6	52	6	0	1
13	30	2,590	21	108	33	2	2
14	11	253	3	21	9	0	4
TOTAL (District)	67	5,311	30	181	48	2	7
Average per trapper: $		76.37	2.00	4.65	3.13	.24	.03
Average price: $		.96	4.47	1.72	4.36	8.00	.25
TOTAL VALUE : $		5,116.74	134.00	311.55	209.50	16.00	1.75

Total Value of all fur: $5,789.54
Total No. trapping permits: 89
Total No. trap tags sold: 3,675 @ 10¢ - $367.50

TOTAL REPORTED CATCH BY YEAR:

	1963-64	1964-65	1965-66	1966-67	1967-68	1968-69	1969-70	1970-71
Muskrat	11,703	6,865	11,263	22,288	11,957	10,824	8,199	5,311
Mink	153	104	20	51	26	48	38	30
Beaver	416	222	154	477	195	328	150	48
Raccoon	439	299	128	233	213	152	196	181
Fox	12	3	0	2	5	0	3	2
Opposum	76	91	5	28	40	12	14	7

F. Other Uses.

Two cabin site permits @ $25.00/year each; two free artesian well taps; two free permits to sportsmen's groups for development of public rec. sites; one permit @ $25.00/20 years to Jackson Co. Cons. Board for rental of Bellevue warehouse; one permit @ $300.00/year for barge mooring; one permit @ $25.00/year to Bowfin Yacht Club for houseboat mooring; one permit @ $150.00/year for boat slips in Frentress Lake.

V. FIELD RESEARCH

A. Wood Duck Banding Program. - Quota 200

Operations were initiated July 19 and terminated August 19. Due to raccoon disturbance at the banding sites, only 17 after hatching year, 26 hatching year and 5 local wood ducks were banded.

B. Wood Duck Nest Box Survey.

Only a few boxes in the Pleasant Creek area were checked this year. Two wood duck nests were recorded in the ten boxes surveyed.

C. Mourning Dove Banding. - Quota 100

Trapping operations were initiated on July 26. Due to human interference on weekends, the quota was not reached until August 17.

D. Vegetative Transects.

The upper Spring Lake transects were sampled in late August. However, heavy rains had completely inundated transect B and the west leg of transect A just prior to the survey.

The following species breakdown was recorded on the portion of transect A sampled.

Species	Percent 1970	: 1971
Sedge	36.0	49.2
Sagittaria	29.0	7.0
Rice-cutgrass	18.5	23.4
Smartweed	7.0	0.0
Cattail	3.5	0.0
Willow	1.0	0.7
Spike rush	0.0	19.5
Others	5.0	0.2

In many respects this sample was not typical of the entire impoundment. The discrepancies observed were previously reported under section I. - B.2. in this report.

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11A

VI. PUBLIC RELATIONS

A. Recreational Use

19 71	FISHING	MISCEL-LANEOUS	HUNTING			TOTAL DAYS USE
			DUCKS	DEER	OTHER	
Spring	15,660	753			40	16,453
Summer	119,454	91,358				210,812
Fall	50,260	17,067	9,568	600	2,620	80,115
TOTAL DAYS USE	185,374	109,178	9,568	600	2,660	307,380

Decreases were recorded in all catagories of recreational use during the year. The greatest decrease from last year was noted in the miscellaneous catagory, (66.3%). Total visits for the year were down 47.4 percent from 1970.

The Palisades State Park naturalist conducted guided hikes on the Miller's Lake trail as the self-guiding leaflet is still being printed. A total of 516 individuals participated in these hikes.

B. Refuge Visitors.

Date	Name & Title	Purpose
2/17	Forrest Carpenter, Regional Refuge Supervisor.	Tour Upper Spring Lake
3/12	Bill Sontag & Karen Smith, RO Interpretive Specialists	Review interpretive plans for the district.
9/9-10	Charles Kastle, EPA, Chicago Office.	Investigate Savanna oil spill.
9/28	Virgil Wiesmuller, Corps of Engineers, Rock Is. District	Posting houseboats.

In addition to the above, Refuge Supervisor Gray and other Winona personnel were frequent visitors. The Palisades Park naturalist and other local state biologists and wardens also frequently visited the station.

C. Refuge Participation.

Presentations: All of the following programs were presented by district manager Bellinger.

Date	Type(no. showings)	Attendance	Organization
1/21	Film (1)	120	Clinton Izaak Waltons
1/21	Film (2)	337	Savanna High School
1/22	Film (2)	97	" " "
2/11	Film (1)	20	Savanna Camera Club
2/12	Slide Talk(2)	40	Hanover & Elizabeth Schools
2/19	Slide Talk(2)	48	Savanna High School
3/4	Film (1)	38	Dole Manager's Club
3/9	Film (1)	28	Clinton Izaak Waltons
3/18	Radio Program	-	Sterling Ill. Station
3/22	Film (1)	40	Savanna High School
3/23	Film (6)	650	" " "
3/24	Film (2)	384	Thomson Schools
3/24	Ecology Lecture(1)	25	Thomson Biology Class
3/26	Film (2)	350	Hanover & Elizabeth Schools
4/1	Slide Talk(1)	28	Dole Manager's Club
4/3	Spring Lake Tours	92	Refuge Open House
4/4	" " "	151	" " "
9/19	" " "	55	Joint fall meeting of Ill. Audubon Soc. & Iowa Orn. Union.
10/9	" " "	40	Morton Arboritium Camera Club from Chicago
10/16	" " "	9	Teachers from Sterling & Rock Falls schools
10/17	" " "	40	Lake Park Biology Club, Chicago.
10/20	" " "	70	Sterling school groups
10/31	" " "	2	Peoria,Ill. Sports Writers
11/6	" " "	153	"Migration Days" open house
11/9	" " "	35	Thomson Biology Club
12/6	Film (1)	60	Hanover youth group
	TOTAL	2,912	

In addition, two news releases were written and two boy scouts counseled for their conservation merit badges. Two Boy scouts fulfilled their public service requirements for eagle rank by assisting in the construction of the Miller's Lake trail.

Meetings Attended: The following meetings were attended by manager Bellinger during the year.

Date	Activity
1/15	Refuge Staff Meeting at LaCrosse, Wisc.
2/16	Assisted at NRA public hearing, Dubuque, Ia.

Meetings cont.

Date	Activity
3/29-30	Objectives Workshop, Winona, Minn.
4/7	Refuge Staff Meeting, Guttenberg, Ia.
7/23	" " " , Winona, Minn.
8/22-28	Civil Ser. Course BMT II, Omaha, Neb.
9/21	Outdoor Education meeting, Sterling, Ill.
9/22	Law Enforc. meeting, Yellow River Forest, Ia.
9/24	Joined Corps boat North Central, 12' channel investigation.
9/27	Outdoor Ed. meeting, Shimer College students
10/5-8	PPBE Workshop, Winona, Minn.
12/1	Refuge PPBE meeting, Guttenberg, Ia.
12/2	Meeting with Savanna Army Depot C.O. re. depot hunting program.

D. Hunting.

Early Teal Season: Illinois again conducted a teal season in 1971. The season ran from 9/18 to 9/26. A slight increase in hunting pressure was noted this year. However, success was down due to the movement of approximately one half of the teal population out of the district on 9/16.

Mourning Dove Season: The Illinois season opened on September 1 and continued through mid November. More hunters were recorded on opening weekend than in the past two years. Bag checks on the pipeline-crossing sandbars revealed the following information. A total of 21 hunters bagged 168 doves for an average bag of 8 birds/hunter. Eight hunters had complete bag limits of 12 birds each.

Regular Waterfowl Season: The Iowa season opened on October 2. Bag checks opening weekend revealed that 53 percent of the hunters had complete bag limits. However, most of these limits consisted of only two or three birds due to the large number of wood ducks (90 point birds) in the bag. Only fair success was noted on the October 23 Illinois opener.

A total of 456 hunters checked bagged 639 birds during the entire season in both states. This resulted in a success of 1.40 birds/hunter. This figure represented an increase of 34 percent over success recorded last year, (see following Bag Summary for further details).

Wood ducks were by far the most common specie bagged, (53.6% of the total). This was probably due to the early opening date of the Iowa season. Mallards dropped to second place this year with blue-winged teal third.

UM-13

Bag Check Summary of Species Taken
Upper Mississippi River Wildlife and Fish Refuge
Period:

	1969		1970		1971	
No. hunters checked	294		454		456	
No. ducks checked	388		483		639	
Average ducks per day	1.32		1.06		1.40	
Species	No.	%	No.	%	No.	%
Mallard	168	43.30	148	30.6	114	17.84
Black	10	2.58	5	1.0	2	.31
Gadwall	13	3.35	11	2.6	4	.63
Baldpate	54	13.92	36	7.5	8	1.25
Pintail	3	.77	11	2.8	3	.47
G.w.teal	26	7.22	56	11.6	54	8.45
B.w.teal	12	3.09	77	15.9	108	16.90
Shoveller	11	2.84	11	2.8	2	.31
Wood duck	77	19.85	105	21.7	343	53.67
Redhead	1	.26	5	1.0		
Ring-neck			8	2.1		
Canvas-back	2	.50	1	.2		
Scaup	7	1.80	6	1.2	1	.16
Golden-eye	1	.20				
Buffle-head	1	.20				
Ruddy			3	.6		
Mergansers						
Scoter						
Old squaw						

Hunters took ducks as follows:

4*	36	12.24	11	2.46	6	1.31
3*	36	12.24	30	6.69	19	4.17
2	52	17.89	93	20.76	197	43.20
1	50	17.01	133	29.59	109	23.90
0	126	42.86	181	40.40	115	25.22
5					5	1.10
6					5	1.10

Skull boaters and hunters in stationary blinds killed approximately 150 geese in the district. Another 50 birds were harvested on private fields and refuge boundaries adjacent to the Spring Lake Closed Area.

White-tailed Deer: Shotgun hunters bagged approximately 40 deer in 320 visits on the district this year. Bow hunters took ten deer in 280 visits.

A check station was again conducted during the two-day Iowa season at the Pleasant Creek closed area. A total of 135 hunters took 28 deer for a success of 20.4%, (17.6 percent success last year). An interesting aspect of the hunt was that approximately 6.2 deer were harvested per square mile of habitat. The age breakdown was recorded as follows; 44% fawns, 31% 1½ yrs., 6% 2½ yrs., and 19% 3½ yrs. and older. Of the total, 56% were females and 44% males.

E. Violations.

The following apprehensions were made by Bureau personnel on the district in 1971.

Type	Number	Fines & Costs
Littering	1	30.00
Fishing with too many poles	1	30.00
Commercial fishing w/o permission	2	50.00 *
Early shooting (waterfowl)	5	150.00
Hunting outside blind	3	90.00
Hunting waterfowl with unplugged gun	2	60.00
Unsigned, unattached duck stamp	1	30.00
Transporting uncased gun in motor boat	2	60.00
Overlimit of waterfowl	1	30.00
Taking waterfowl out of season	1	30.00
Possession " " " "	1	115.00
Taking protected specie (cormorant)	1	30.00
Trapping too close to rat house	1	25.00 **
No boat running lights	1	15.00
No life saving device in boat	1	15.00
TOTALS	24	$760.00

* In addition to fine, lost commercial fishing permits for three years.
** In addition to fine, trapper also lost all trapping privileges on the refuge for three years.

The following pollution investigations were conducted by the district manager during the year.

Date	Type and Location
4/1	Oil at Savanna Railroad Yards
4/22	Landfill at Dubuque
5/11	Oil slick near Cordova
9/8-11	Oil spill at Savanna bulk plant
11/9	Initated investigation of oil sump lake at Alcoa plant near Betterdorf
12/30	Landfill at Clinton

F. Safety.

No lost time accidents occurred on the district. This included 1.25 man years of labor. Periodic safety discussions were held with temporary help through the summer period. Safety discussions were conducted at all refuge staff meetings.

VII. OTHER ITEMS

A. Items of Interest.

No transfers of personnel or other special events occurred during the year.

B. Photographs.- Appended.

SIGNATURE PAGE

Submitted by:

Jay R. Bellinger
(Signature)

Jay R. Bellinger

Date: February 24, 1972

District Refuge Manager
Title

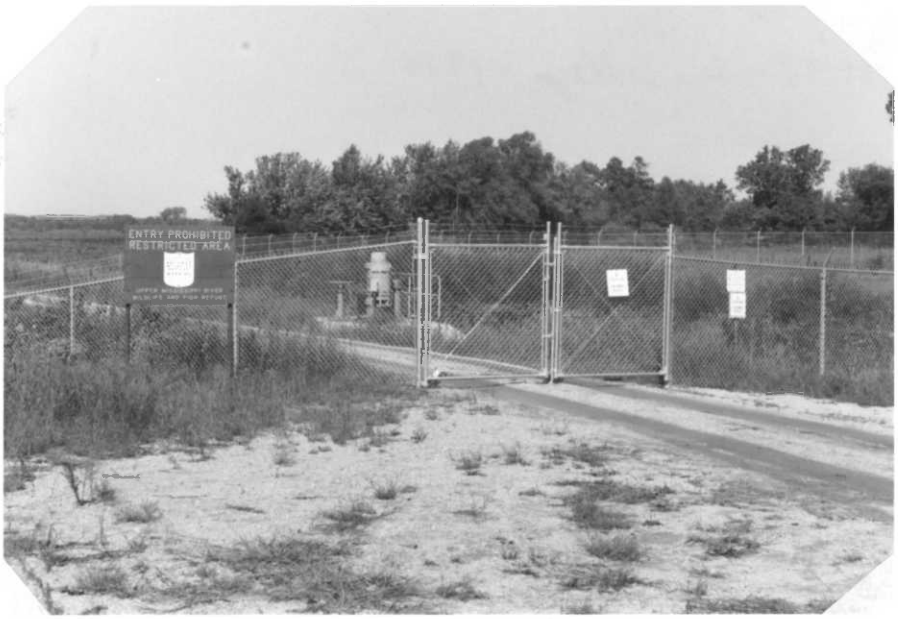
Approved, Regional Office:

Date: MAR 10 1972

James B. Monnie ASST
(Signature)

ASST

Regional Refuge Supervisor



UMR - Sav., Neg. 1971-3

A 500 foot chain-link fence was installed around the Spring Lake pump to prevent vandalism.

UMR - Sav., Neg. 1971-4

500 tons of rip-rap were placed in eroded portions of the Spring Lake cross-dike.

UMR * Sav., Neg. 1971-1

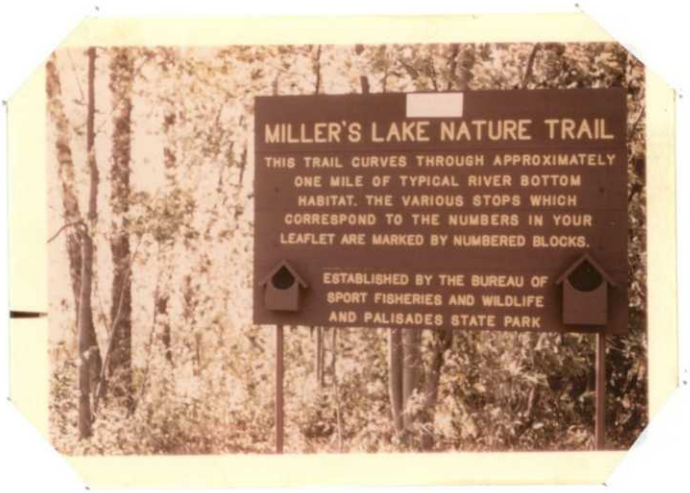
Bare mudflats appear as water receeds from upper Spring Lake impoundment.

Vegetative development in upper Spring Lake impoundment. Rice-cutgrass in foreground and smartweed stand in background.

Smartweed growth in upper Spring Lake. Over 200 acres of this rank growth responded to the drawdown.

The four-acre plot of millet hand seeded in upper Spring Lake. Some seedheads were eight inches long and weighed approximately $\frac{1}{4}$ lb.

Farmfields in the Pleasant Creek area were summer fallowed and seeded to winter rye.



The Miller's Lake trail was established this year. This trail is located near a major launching area and should receive extensive use.

A thick overstory of fairly mature trees resulted in very sparse understory and ground debris on one half of the trail area. Driftwood was salvaged from river islands to delineate the path on this portion of the trail. These border logs were staked down to prevent their loss during high water.

FEB 72

UMR - Sav. Neg. 1971-2

This raised foot-bridge was also constructed on the nature trail. College student Steve Lekwa,(background) and work-study students Paul Vesely and Jay Richey, (Dave Stingley not in picture), deserve most of the credit for construction of the trail. These fellows did a commendable job in completing many refuge projects this summer.