

Charles M. Russell NWR - Narrative
Report - 1969

3 -1750a

Cont. NR-1

(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE Charles M. Russell National Wildlife RangeMONTHS OF September TO December, 1969

(1) Species	(2) CLASS C DATA Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen : total
	11/10-16 11	11/17-23 12	11/24-30 13	12/1-7 14	12/8-14 15	12/15-21 16	12/22-28 17	12/29-1/4 18		
<u>Swans:</u>										
Whistling										
Trumpeter										
<u>Geese:</u>										
Canada	1,900	1,050	450	500	480	350	300	200	102,760	
Cackling										
Brant										
White-fronted					1	1	1	1	28	
Snow										
Blue										
Other Total	1,900	1,050	450	500	481	351	301	201	102,788	
<u>Ducks:</u>										
Mallard	15,000	16,000	16,000	20,000	20,000	18,000	15,000	15,000	1,272,950	
Black										
Gadwall	150	150	75	75	50	50	-	-	47,250	
Baldpate	100	50	50	-	-	-	-	-	18,900	
Pintail	100	50	50	25	25	25	25	25	34,475	
Green-winged teal	50	50	25	-	-	-	-	-	16,275	
Blue-winged teal	75	75	50	-	-	-	-	-	75,600	
Cinnamon teal	-	-	-	-	-	-	-	-	7,700	
Shoveler	100	50	50	50	25	-	-	-	40,425	
Wood										
Redhead	150	50	25	25	25	10	-	-	17,045	
Ring-necked	-	-	-	-	-	-	-	-	1,470	
Canvasback	25	10	10	10	10	10	-	-	2,975	
Scaup	75	50	50	20	-	-	-	-	17,465	
Goldeneye	450	500	500	750	400	300	300	300	48,300	
Bufflehead	20	-	-	-	-	-	-	-	4,900	
Ruddy										
Other Merganser	2,000	2,000	2,500	2,500	1,500	800	800	500	154,000	
TOTAL	18,295	19,035	19,385	23,455	22,035	19,195	16,125	15,825	1,759,730	
<u>Coot:</u>	100	50	50	50	-	-	-	-	26,950	
				(over)						

	(5)	(6)	(7)
	Total Days Use	Peak Number	Total Production
Swans	0	0	
Geese	102,788	1,900	-
Ducks	1,759,730	23,455	-
Coots	26,950	800	-

SUMMARY

Principal feeding areas Cultivated bottom-lands on Wildlife

Range and adjacent grain field off the wildlife range.

Principal nesting areas

Reported by Peck, Gibbons, and Burkholder

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).

DISEASE

Refuge Hailstone, Halfbreed, Lake Mason, War Horse, Year 1969
Yellow Water

Botulism

Lead Poisoning or other Disease

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	_____	_____

(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 _____

Kind of disease _____

Species affected _____

Number Affected Species	Actual Count	Estimated
_____	_____	_____
_____	_____	_____
_____	_____	_____

Number Recovered _____

Number lost _____

Source of infection _____

Water conditions _____

Food conditions _____

Remarks None to report.

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

Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge Satellite Areas County Stillwater, Musselshell and Petroleum State Montana

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

No. of Permittees: Agricultural Operations _____ Haying Operations _____ Grazing Operations 14

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING	Number Animals	AUM'S	Cash Revenue	ACREAGE
None				1. Cattle	1062	4010	2131.35	14,421
				2. Other		None		
				1. Total Refuge Acreage Under Cultivation				
Hay - Wild				2. Acreage Cultivated as Service Operation				

Grazing licenses issued by Bureau of Land Management (all grazing administered by BLM under Taylor Grazing Act)

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

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

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

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

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

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

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

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

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

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

3-1751

Form NR-1A
(Nov. 1945)

MIGRATORY BIRDS

(other than waterfowl)

Refuge Charles M. Russell NW Range Months of September to December 1956

(1) Species Common Name	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total Estimated Number
	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	
I. Water and Marsh Birds:										
Common Loon	1	5/10	10	11/15	2	12/12				20
Western grebe	20	6/1	200	11/15	5	12/12				200
White pelican	9	4/8	2,500	9/1	1	11/20				3,500
Double crested cormorant	2	5/10	1,000	9/1	10	12/12				1,000
Great blue heron	1	3/28	150	9/1	2	11/20				150
II. Shorebirds, Gulls and Terns:										
Killdeer	2	3/12	1,000	9/1	2	10/15				1,000
Mountain plover	1	3/12	100	9/1	2	10/15				100
Upland plover	1	3/10	30	9/1	1	9/21				30
Black bellied plover	9	3/15	?	?	9	3/15				9
California gull	5	5/10	200	8/20	5	11/20				200
Franklin gull	2	4/1	5,000	8/20	1	12/12				5,000
Common tern	3	4/1	500	8/20	2	11/20				500

(over)

(1)	(2)	(3)	(4)	(5)	(6)				
III. <u>Doves and Pigeons:</u>									
Mourning dove	2	3/23	120,000	9/1	2	10/20			120,000
White-winged dove									
IV. <u>Predaceous Birds:</u>									
Golden eagle	Resident		50	11/30	2	12/31			50
Duck hawk	1	11/12	10	11/12	1	11/12			10
Horned owl	Resident		100	9/1	1	12/31			100
Magpie	Resident		1,000	9/1	2	12/31			1,000
Raven	None								
Crow	5	3/17	150	10/22	15	10/22			250
Bald eagle	1	11/10	15	12/31	1	12/31			15
Osprey	2	5/21	20	9/1	1	10/22			20
Burrowing owl	1	6/17	40	9/1	1	6/17			40

Reported by Bob L. Burkholder, Pilot biologist.

INSTRUCTIONS

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

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

WATERFOWL HUNTER KILL SURVEY

Refuge Charles M. Russell NW Range (East Unit)

REGULAR WATERFOWL SEASON

Year 1969

INSTRUCTIONS

(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
Oct 4 - Oct 10	2	4	Canada goose (1), Mallard (2), Gadwal (1)	4	1	5	15	38
Oct 11 - Oct 17	3	6	Mallard (3), Red Head (1), Widgeon (2)	6	2	8	25	67
Oct 18 - Oct 24	4	10	Canada goose (2), Mallard (4), Gadwal (5)	11	1	12	30	90
Oct 25 - Oct 31	4	6	Mallard (2), Widgeon (3), Gadwal (3), Red Head (2)	10	3	13	30	97
Nov 1 - Nov 7	3	8	Canada goose (1), Mallard (1), Gadwal (2)	4	0	4	20	26
(Duck Season Closed Nov 5)								
Nov 8 - Nov 14	1	4	Canada goose (1)	1	0	1	5	2
Nov 15 - Nov 21	0	0	(0)	0	0	0	5	1
Nov 22 - Nov 28	3	9	Canada goose (2)	2	0	2	8	4
Nov 29 - Dec 5	0	0		0	0	0	5	0
Dec 6 - Dec 12	0	0	-	0	0	0	2	0
Dec 13 - Dec 19	1	2	Canada goose (1)	1	0	1	5	3

(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. $Column\ 9 = \frac{Column\ 8}{Column\ 2} \times Column\ 7.$

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

WATERFOWL HUNTER KILL SURVEY

Refuge Charles M. Russell NWR (East Unit)

REGULAR WATERFOWL SEASON and
**SPECIAL MALLARD SEASON

Year 196⁹

INSTRUCTIONS

(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
Dec 20 - Dec 26	2	1	Canada goose (3)	3	0	3	4	4
Dec 27 - Jan 2	1	1	Canada goose (1) (Goose Season closed Dec. 28)	1	0	1	4	2
Totals	24	51		43	7	50	158	334
FORT PECK PUBLIC SHOOTING AREA								
** (Special Mallard Season)								
Dec 13 - Dec 19	31	39	Mallard (44)	44	13	57	126	232
Dec 20 - Dec 26	48	64	Mallard (91)	91	16	107	175	390
Dec 27 - Jan 2	44	43	Mallard (49)	49	7	56	147	187
Jan 3 - Jan 9	21	24	Mallard (50) (SEASON CLOSED - January 4)	50	6	56	88	234
Totals	144	170		234	42	276	536	1043

(over)

WATERFOWL HUNTER KILL SURVEY

Refuge Charles M. Russell NWR (East Unit)

REGULAR WATERFOWL SEASON and
**SPECIAL MALLARD SEASON

Year 1961

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. $\text{Column 9} = \frac{\text{Column 8}}{\text{Column 2}} \times \text{Column 7}$.

UPLAND GAME BIRDS

Refuge Charles M. Russell NW Range Months of September to December, 19 69

Form NR-2 - UPLAND GAME BIRDS*

(1) Species	(2) Density	(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
		Number broods obs'v'd.	Estimated Total		Hunting	For Re-stocking	For Research		
Common Name	Cover types, total acreage of habitat	Acres per Bird		Percentage			Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.	
Sharp-tailed grouse					150		7,500	Slight decrease from last year	
Sage grouse					100		1,500	Increased significantly	
Ring-necked Pheasant					20		350	Population stable but very low	
Gray Partridge					100		10,000		
Merriam's Turkey			5	50	30	13	325	50% decline in total amount	

(1) SPECIES
(2) DENSITY
(3) YOUNG PRODUCED
(4) SEX RATIO
(5) REMOVALS
(6) TOTAL
(7) REMARKS

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

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 Charles M. Russell NW Range

Calendar Year 1969

(1) Species	(2) Density	(3) Young Produced	(4) Removals				(5) Losses			(6) Introductions	(7) Estimated Total Refuge Population		(8) Sex Ratio	
			Hunting	For Re- stocking	Sold	For Research	Predation	Disease	Winter Loss		Number	Source		At period of Greatest use
Mule Deer	Timbered coulees 700,000 acres	3,500	500				60					6,500	3,000	42:100
White-tailed Deer	River bottoms above lake and below dam	200	50				20					500	800	30:100
Elk	Entire north side of wild- life range plus south side, east to Carroll Coulee. Includes all habitat types both "bottom" and breaks"	350	300				5					1,100	800	45:100
Antelope	Benchlands		20									Use "on-off basis"		
Bighorn sheep	Timbered breaks - 7,000 acres	23	5				1		2			100	90	30:100

Remarks:

Reported by Bob L. Burkholder, Pilot-biologist

INSTRUCTIONS

Form NR-3 - BIG GAME

- (1) SPECIES: Use correct common name; i.e., Mule deer, black-tailed deer, white-tailed deer. It is unnecessary to indicate sub-species such as northern or Louisiana white-tailed deer.
- (2) DENSITY: Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge: once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated total number of young produced on refuge.
- (4) REMOVALS: Indicate total number in each category removed during the year.
- (5) LOSSES: On the basis of known records or reliable estimates indicate total losses in each category during the year.
- (6) INTRODUCTIONS: Indicate the number and refuge or agency from which stock was secured.
- (7) TOTAL REFUGE POPULATION: Give the estimated population of each species on the refuge at period of its greatest abundance and also as of Dec. 31.
- (8) SEX RATIO: Indicate the percentage of males and females of each species as determined from field observations or through removals.

DISEASE

Refuge Charles M. Russell NW Range

Year 19 69

Botulism

NONE KNOWN

Lead Poisoning or other Disease NONE KNOWN

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	_____	_____

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 _____

Kind of disease _____

Species affected _____

Number Affected Species	Actual Count	Estimated
_____	_____	_____
_____	_____	_____
_____	_____	_____

Number Recovered _____

Number lost _____

Source of infection _____

Water conditions _____

Food conditions _____

Remarks _____

ANNUAL
~~MONTHLY~~ RECREATIONAL USE REPORT

*

Refuge name
Charles M. Russell NW Range
 State
Montana

State Code 26 (1-2) Congressional District Code 02 (3-4) Refuge Code 132 (5-7) Report Yr. 69 Mo. --- Period --- (8-11)

(Card Columns). (12-13) (14-18) (19-25)				(Card Columns). (12-13) (14-18) (19-25)			
ACTIVITY	Code	VISITS FOR THE MONTH		ACTIVITY	Code	VISITS FOR THE MONTH	
		Total Number	Total Hours			Total Number	Total Hours
Hunting: Big Game	01	5,625	21,000	On-Site Programs	22	750	328
Upland Game	02	1,490	8,980	*Miscellaneous Wildlife	23	127	376
Waterfowl	03	974	2,733				
Other Migratory	04	-	-	Swimming	24	21,006	42,008
Other	05	-	-	Boating	25	28,263	129,892
Bow	06	2,180	23,180	Water Skiing	26	6,787	15,154
Fishing: Salt Water	07	-	-	Camping	27	40,432	1,212,510
Warm Water	08	83,815	333,464	Group Camping	28	30	1,380
Cold Water	09	-	-	Picnicking	29	189,121	379,569
Environmental Education	10	-	-	Horseback Riding	30	152	1,260
Wildlife Photography	11	13,764	13,463	Bicycling	31	-	-
Wildlife Observation	12	53,980	50,920	Winter Sports	32	108	544
Conducted Programs	13	78	80	Fruit, Nut and Vegetable Collecting	33	20	80
Field Trials	14	-	-	*Miscellaneous Non-Wildlife	34	127,488	324,676
Wildlife Trails	15	300	150	Peak Load Day	35	62,375	
Wildlife Tours/Routes	16	1,215	2,730	Actual Visits	36	336,500	
Visitor Contact Stations	17	-	-				
Camping (wildlife related)	18	21,059	629,990	Fee Area Use	37		
Picnicking (wildlife related)	19	48,220	100,830	Number of Fee Areas	38		(14-18)
Wildlife Interpretive Center	20	-	-	Fee Collections	39	\$	
Off-Site Programs	21	287	157	Collection Costs	40	\$	

*TOTAL OF MONTHLY REPORTS

Use reverse side to indicate types of activities summarized under miscellaneous codes 23 and 34. MAKE NO OTHER ENTRIES ON FACE OF THIS FORM.

NONAGRICULTURAL COLLECTIONS, RECEIPTS, AND PLANTINGS

(1)

Refuge Charles M. Russell NW Range Year 19 69

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

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

Remarks: Nothing to report.

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

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

Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge Charles M. Russell NW Range

County Fergus

State Montana

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure, Cover and Water-fowl Browsing Crops Type and Kind	Total Acreage
	Acres	Bu./Tons	Harvested		Unharvested				
			Acres	Bu./Tons	Acres	Bu./Tons			
<u>Sharecropped</u>									
Barley					39	915 bu	39		
Winter wheat					92	1730 bu	92		
Winter wheat seeded					88	-	88		
<u>Refuge Farmed</u>									
Barley					15	600 bu.	15		
Alfalfa					35	35 ton	35	Alfalfa	35
								Fallow Ag. Land Sharecropped Refuge Farmed	150

No. of Permittees: Agricultural Operations 5 Haying Operations 6 Grazing Operations 6

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING	Number Animals	AUM'S	Cash Revenue	ACREAGE
Alfalfa	970	499	-	1. Cattle	Licensed by BLM			
				2. Other	None			
				1. Total Refuge Acreage Under Cultivation				296
Hay - Wild	265	258	-	2. Acreage Cultivated as Service Operation				15

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.

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.

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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 Charles M. Russell NW Range

County Phillips

State Montana

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure, Cover and Water-fowl Browsing Crops Type and Kind	Total Acreage
	Acres	Bu./Tons	Harvested		Unharvested				
			Acres	Bu./Tons	Acres	Bu./Tons			
<u>Sharecropped</u>									
Barley	22	264 bu.	114	2288 bu.	86	1790 bu.	222		
Winter wheat					61	1620 bu.	61		
Winter wheat seeded					79	-	79		
Proso Millet					18	Flooded/none	18		
<u>Refuge Farmed</u>									
Corn					13	650	13		
Proso Millet					11	660	11		
Barley					12	80 bu.	12		
Alfalfa			12	6 ton	12	18 ton	12	Alfalfa	12
Green needle grass					35	-	35	Green needle grass	35
								Fallow Ag. Land Sharecropped	140
								Refuge Farmed	92

No. of Permittees: Agricultural Operations 4 Haying Operations 4 Grazing Operations 16

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING	Number Animals	AUM'S	Cash Revenue	ACREAGE
Alfalfa	1830	742	---	1. Cattle	Licensed by BLM			
				2. Other	None			
				1. Total Refuge Acreage Under Cultivation				616
Hay - Wild	95	177	---	2. Acreage Cultivated as Service Operation				175

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

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

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

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

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

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

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

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

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

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

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

Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge Charles M. Russell NW Range County Valley State Montana

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure, Cover and Water-fowl Browsing Crops Type and Kind	Total Acreage
	Acres	Bu./Tons	Harvested		Unharvested				
			Acres	Bu./Tons	Acres	Bu./Tons			
<u>Sharecropped Lands</u>									
Barley	97	4225 bu	22	995 bu.			119		
Proso millet					4.5	45 bu	4.5		
Corn					4.5	270 bu	4.5		
<u>Refuge Farmed</u>									
Barley					16	400 bu.	16		
Red fortune wheat			30	750 bu.			30		
								Fallow Ag. Land Sharecropped Refuge Farmed	127 40

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

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING	Number Animals	AUM'S	Cash Revenue	ACREAGE
Alfalfa	24 ton	6		1. Cattle		Licensed	by BLM	
				2. Other		none		
				1. Total Refuge Acreage Under Cultivation				
Hay - Wild				2. Acreage Cultivated as Service Operation				

23
4

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.

REFUGE GRAIN REPORT

1969-70

Refuge Charles M. Russell NW Range - West Unit

Months of January through December, 1969

(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
Alfalfa	28 bu.	-	28 bu.	-	-	-	-	28 bu.	28 bu.	-	-
Barley	800 bu.	2290	3090	1800	10	500	2310	590	90	500	-
Crested wheat	450 lb	-	450	-	-	-	-	450	450	-	400
Western Wheat	45 lb	-	45	-	-	-	-	45	45	-	-
Canadian Clover	50 lb	-	50	-	-	-	-	50 lb	50 lb	-	-
Velvet lawn mixture	175 lb	-	175	-	-	-	-	175 lb	175 lb	-	-
Oats	20 bu	-	20	-	-	-	-	20 bu	2	18	-
Corn	-	4	4	-	4	-	4	-	-	-	-
Millet	-	10 bu	10	-	10	-	10	-	-	-	-

(8) Indicate shipping or collection points _____

(9) Grain is stored at _____

(10) Remarks * Considerable mice damage to stored seed during past. Exact amount of usable seed may be much reduced after cleaning.

*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.

3-1570
NR-28
(4/54)

REFUGE GRAIN REPORT

Refuge Charles M. Russell - East Unit

Months of January through December, 1969

(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
Barley	3790	2795	6585	-	15	3425	3440	3145	-	3145	
Red fortune wheat	470	750	1220	-	70	400	470	750	-	750	
Proso millet	14	-	14	-	7	-	7	7	7	-	

(8) Indicate shipping or collection points _____

(9) Grain is stored at _____

(10) Remarks _____

*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.

TIMBER REMOVAL

Refuge Charles M. Russell National Wildlife Range Year 1969

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
Lazy J.D. Cattle Co (Jess H. Robinson)	69-8	C.K. Burn Sec 21&22 T22N,R27E	N/A	up to 20 fire killed trees for corral poles	No charge	None	Fire killed trees	Ponderosa pine

Total acreage cut over N/A

Total income None

No. of units removed B. F. _____

Method of slash disposal Tops-topped and scattered

Cords _____

Ties _____
trees- up to 20 _____

ANNUAL REPORT OF PESTICIDE APPLICATION

Proposal Number

Reporting Year

1969

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)
1. June 3, 69	Mustard, Canadian thistle, fireweed	Ditch banks and roadsides-S.A.	7	2,4-D Amine	1½ gal	1½ lb a.e./ac.	Water 1:100	Power Sprayer
2-June 17, 69	Bindweed, Canadian thistle, fireweed	Tracts 7 & 8	13	2,4-D Amine	3 gal	1½ lb a.e./ac.	Water 1:100	Power Sprayer
3-June 18, 69	Russian thistle Fireweed	Airstrip-Slippery Ann	3	Ureabor	150 lb.	50 lb/acre	None	Broad-Cast
4-June 24, 69	Canadian thistle Pigweed, fireweed	Tracts 7 & 8	11	2,4-D Amine	3 gal.	1½ lb a.e./ac.	Water 1:100	Power Sprayer

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

1. 80% kill
2. 80% kill
3. 100% kill
4. 90% kill

ANNUAL REPORT OF PESTICIDE APPLICATION

Charles M. Russell NWR-East Unit

Proposal Number

Reporting Year

1969

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)
1. May 10	Fanweed, mustard, pigweed	71D (Sharecropped)	17.3	2,4-D Amine	7	2	1:75 Water	Power Sprayer
2. May 22	" "	62Da (PT) (Sharecropped)	24.5	2,4-D Amine	10	2	1:75 Water	Power Sprayer
3. June 4	" "	68D (Sharecropped)	42	2,4-D Amine	10	1	1:75 Water	Power Sprayer
4. June 5	" "	62Da (pt) (Sharecropped)	35	2,4-D Amine	8	1	1:75 Water	Power Sprayer

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

1. Est. 30% kill
2. Est. 95% kill
3. Est. 70% kill
4. Est. 70% kill

	(5)	(6)	(7)	
	Total Days Use	Peak Number	Total Production	SUMMARY
Swans	98	10		Principal feeding areas Submergent vegetation and
Geese	16,975	250		adjacent grasslands and grain fields.
Ducks	153,405	2,440		Principal nesting areas
Coots	6,020	175		

Reported by Charles W. Gibbons

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).

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

W A T E R F O W L

REFUGE Halfbreed

MONTHS OF September TO December, 1969

(1) Species	(2) CLASS C DATA									
	Weeks of reporting period									
	9/1-7	9/8-14	9/15-21	9/22-28	9/29-10/5	10/6-12	10/13-19	10/20-26	10/27-11/2	11/3-9
	1	2	3	4	5	6	7	8	9	10
Swans:										
Whistling Trumpeter								11	11	1
Geese:										
Canada	75	75	150	200	200	500	500	850	850	850
Cackling Brant										
White-fronted Snow										
Blue										
Other										
Ducks:										
Mallard	2,500	2,000	2,000	3,000	3,000	1,000	1,000	1,000	800	800
Black										
Gadwall	500	800	800	1,000	800	500	500	350	350	200
Baldpate	250	300	350	350	400	400	500	300	300	300
Pintail	500	600	600	500	350	350	200	200	200	100
Green-winged teal	200	300	500	500	200	100	100	100	50	50
Blue-winged teal	500	1,000	800	800	500	200	200	100	50	50
Cinnamon teal	100	150	100	100	50	20	-	-	-	-
Shoveler	350	800	1,000	500	350	350	200	200	100	50
Wood										
Redhead	75	75	75	150	200	200	150	150	75	75
Ring-necked	20	20	50	50	50	50	25	25	-	-
Canvasback	50	100	100	100	100	50	-	-	-	-
Scaup	150	350	350	500	200	300	300	150	150	75
Goldeneye	-	150	150	200	250	250	-	-	-	-
Bufflehead	20	50	50	50	50	50	25	25	25	-
Ruddy	15	25	25	-	-	-	-	-	-	-
Other										
Total Ducks	5,230	6,720	6,950	7,800	6,500	3,820	3,200	2,600	2,100	1,700
Coot:	800	1,000	1,000	500	500	500	350	200	100	100

3 -1750a

Cont. NR-1

(Rev. March 1953)

W A T E R F O W L
(Continuation Sheet)

REFUGE HalfbreedMONTHS OF September TO December, 19 69

(1) Species	(2) Weeks of reporting period				(3) Estimated waterfowl days use				(4) Production Broods: Estimated seen : total	
	11/10-16 11	11/17-23 12	11/24-30 13	12/1-7 14	12/8-14 15	12/15-21 16	12/22-28 17	12/29-1/4 18		
<u>Swans:</u>										
Whistling Trumpeter						FROZEN			196	
<u>Geese:</u>										
Canada	500	500	200	200					39,550	
Cackling Brant										
White-fronted Snow										
Blue Other										
<u>Ducks:</u>										
Mallard	800	500	500	500					135,800	
Black Gadwall	200	200	100	100					44,800	
Baldpate	200	200	200	150					29,400	
Pintail	100	100	100	100					28,000	
Green-winged teal	50	-	-	-					15,050	
Blue-winged teal	50	50	-	-					30,100	
Cinnamon teal	-	-	-	-					3,640	
Shoveler	50	25	25	25					28,175	
Wood Redhead	-	-	-	-					8,575	
Ring-necked	-	-	-	-					2,030	
Canvasback	-	-	-	-					3,500	
Scaup	75	50	50	-					18,900	
Goldeneye	-	-	-	-					7,000	
Bufflehead	-	-	-	-					2,175	
Ruddy	-	-	-	-					455	
Other										
Total Ducks	1,525	1,125	975	875					357,840	
<u>Coot:</u>	100	100	100	100					38,150	

(over)

	(5)	(6)	(7)
	Total Days Use	Peak Number	Total Production
Swans	196	14	
Geese	39,550	850	
Ducks	357,840	7,800	
Coots	38,150	1,000	

SUMMARY
Principal feeding areas <u>submergent - emergent vegetation</u> <u>Shoreline marshes.</u>
Principal nesting areas _____

Reported by Charles W. Gibbons

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).

UPLAND GAME BIRDS

Refuge Satellites Months of September to December, 19 69

Form NR-2 - UPLAND GAME BIRDS *

(1) Species	(2) Density	(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks	
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'v'd.	Estimated Total	Percentage	Hunting	For Re- stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
<u>Hailstone</u>									35	All species listed use refuges on an on-off basis.
Sage grouse									10	
Pheasant									25	
Gray Partridge									75	
<u>Halfbreed</u>									10	
Sage grouse									25	
pheasant									30	
Gray Partridge									60	
<u>Lake Mason</u>									45	
Sharp-tailed grouse									20	
Sage Grouse									75	
Pheasant									75	
Gray Partridge									50	
<u>War Horse</u>									15	
Sage Grouse										
<u>Wild Horse</u>										
Sage Grouse										
<u>Yellow Water</u>										
Sage Grouse										
Pheasant										

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 Satellites

Calendar Year 1969

(1) Species	(2) Density	(3) Young Produced	(4) Removals				(5) Losses			(6) Introductions	(7) Estimated Total Refuge Population		(8) Sex Ratio
			Hunting	For Re- stocking	Sold	For Research	Predation	Disease	Winter Loss		Number	Source	
<u>Hailstone</u> Antelope		4									35	15	25:100
<u>Halfbreed</u> Antelope		6									40	20	25:100
<u>Lake Mason</u> Antelope		25									125	100	25:100
<u>Mule Deer</u>		2									12	8	50:100
<u>War Horse</u> Antelope		6									30	20	50:100
<u>Mule Deer</u>		3									15	10	50:100
<u>Wild Horse</u> Antelope		5									25	20	50:100
<u>Mule Deer</u>		2									10	8	50:100
<u>Yellow Water</u> Antelope		6									20	15	50:100
<u>Mule Deer</u>		2									6	6	50:100

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 each species on the refuge at period of its greatest abundance and also as of Dec. 31.
- (8) SEX RATIO: Indicate the percentage of males and females of each species as determined from field observations or through removals.

WATERFOWL

REFUGE Charles M. Russell National Wildlife Range

MONTHS OF September TO December, 1969

(1) Species	(2) CLASS C DATA Weeks of reporting period									
	9/1-7 1	9/8-14 2	9/15-21 3	9/22-28 4	9/29-10/5 5	10/6-12 6	10/13-19 7	10/20-26 8	10/27-11/2 9	11/3-9 10
Swans:										
Whistling Trumpeter										
Geese:										
Canada	750	850	850	950	750	850	700	1,100	1,400	1,250
Cackling Brant										
White-fronted Snow										
Blue										
Other										
Ducks:										
Mallard	850	1,000	1,000	2,500	3,500	4,000	4,000	9,000	11,000	10,000
Black										
Gadwall	1,000	1,000	800	800	500	500	500	500	300	300
Baldpate	400	500	500	300	200	200	100	100	100	100
Pintail	500	800	1,000	800	500	400	200	200	100	100
Green-winged teal	600	600	200	200	100	100	100	100	100	100
Blue-winged teal	3,000	3,000	2,000	1,000	500	500	200	200	100	100
Cinnamon teal	500	300	200	50	50	-	-	-	-	-
Shoveler	1,500	1,500	800	600	250	250	200	200	100	100
Wood										
Redhead	-	-	100	200	300	300	350	350	350	200
Ring-necked	-	-	20	50	50	50	20	20	-	-
Canvasback	-	-	20	30	50	50	50	50	50	50
Scaup	-	-	150	250	450	450	400	400	100	100
Goldeneye	200	250	300	350	350	350	400	400	400	400
Bufflehead	40	100	200	100	50	50	50	50	20	20
Ruddy										
Blue Merganser	400	500	500	600	800	800	800	1,500	1,500	2,000
TOTAL	8,990	9,550	7,790	7,830	7,650	8,000	7,370	13,070	14,220	13,570
Coot:	700	800	800	500	300	100	100	100	100	100

3 -1750a

Cont. NR-1

(Rev. March 1953)

W A T E R F O W L
(Continuation Sheet)

REFUGE Lake MasonMONTHS OF September TO December, 1969

(1) Species	(2) CLASS C DATA Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen : total
	11/10-16 11	11/17-23 12	11/24-30 13	12/1-7 14	12/8-14 15	12/15-21 16	12/22-28 17	12/29-1/4 18		
Swans:										
Whistling	8								252	
Trumpeter										
Geese:										
Canada	250	250	200						13,790	
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	200	200	200						116,200	
Black										
Gadwall	500	300	200						63,000	
Baldpate	500	500	300						36,100	
Pintail	200	200	100						51,600	
Green-winged teal	100	100	50						26,250	
Blue-winged teal	300	200	200						60,200	
Cinnamon teal	-	-	-						2,170	
Shoveler	-	-	-						70,700	
Wood										
Redhead	50	50	50						22,575	
Ring-necked	-	-	-						6,300	
Canvasback	50	25	-						11,725	
Scaup	100	100	50						11,350	
Goldeneye	50	50	100						9,555	
Bufflehead	-	-	-						2,030	
Ruddy										
Other										
Total Ducks	2,050	1,725	1,250						489,055	
Coot:	200	100	100						115,250	

(over)

	(5)	(6)	(7)	SUMMARY
	Total Days Use	Peak Number	Total Production	
Swans	252	20		Principal feeding areas Submergent and emergent vegetation
Geese	13,790	250		and adjacent grasslands and stubble fields.
Ducks	489,055	11,320		Principal nesting areas
Coots	145,250	4,000		

Reported by Charles W. Gibbons

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).

W A T E R F O W L

REFUGE Lake Mason

MONTHS OF September TO December, 1969

(1) Species	(2) CLASS C DATA Weeks of reporting period									
	: 9/1-7 1	: 9/8-14 2	: 9/15-21 3	: 9/22-28 4	: 9/29-10/5 5	: 10/6-12 6	: 10/13-19 7	: 10/20-26 8	: 10/27-11/2 9	: 11/3-9 10
Swans:									20	8
Whistling Trumpeter										
Geese:										
Canada	50	50	100	100	150	150	150	150	150	220
Cackling Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	4,000	5,000	2,000	1,000	1,200	800	800	500	500	200
Black										
Gadwall	1,000	1,000	1,200	1,200	800	800	500	500	500	500
Baldpate	400	300	500	500	300	300	300	300	500	500
Pintail	800	1,000	1,000	1,200	1,000	500	500	500	500	300
Green-winged teal	400	500	500	500	500	300	200	200	200	200
Blue-winged teal	1,200	1,200	1,500	1,000	500	500	500	500	500	500
Cinnamon teal	50	20	100	50	50	20	20	-	-	-
Shoveler	1,400	1,500	2,000	1,500	1,500	1,000	500	500	200	-
Wood										
Redhead	200	300	500	500	500	300	300	300	100	75
Ring-necked	100	100	200	200	100	100	100	-	-	-
Canvasback	50	50	100	100	50	50	50	50	50	50
Scaup	300	200	300	300	200	100	100	100	100	100
Goldeneye	100	100	250	250	100	100	100	100	50	15
Bufflehead	-	50	50	50	50	20	20	20	20	10
Ruddy										
Other										
Total Ducks	10,000	11,320	10,200	8,350	6,850	4,890	3,990	3,570	3,220	2,450
Coot:	4,000	4,000	4,000	4,000	1,000	1,000	1,000	500	500	350

W A T E R F O W L

REFUGE War Horse Lake

MONTHS OF September TO December, 1969

(1) Species	(2) CLASS C DATA									
	Weeks of reporting period									
	:9/1-7	:9/8-14	:9/15-21	9/22-28	9/29-10/5	10/6-12	10/13-19	10/20-26	10/27-11/2	11/3-9
	: 1	: 2	: 3	: 4	: 5	: 6	: 7	: 8	: 9	: 10
Swans:										
Whistling Trumpeter									2	2
Geese:										
Canada	50	50	75	75	100	100	100	150	150	180
Cackling Brant										
White-fronted Snow										
Blue										
Other										
Ducks:										
Mallard	1,000	1,200	1,200	1,000	800	500	100	100	100	50
Black										
Gadwall	1,200	1,200	1,200	1,000	500	500	500	500	500	500
Baldpate	500	1,500	1,500	1,200	1,200	1,000	1,000	1,000	1,000	1,000
Pintail	800	1,000	800	500	800	500	100	100	100	50
Green-winged teal	500	800	800	1,000	200	200	200	200	100	100
Blue-winged teal	1,300	1,500	1,000	1,000	500	200	200	100	-	-
Cinnamon teal	100	150	150	50	50	20	-	-	-	-
Shoveler	500	800	800	500	500	100	100	50	50	25
Wood										
Redhead	1,200	1,200	1,000	1,000	1,200	1,200	1,500	1,500	1,500	1,500
Ring-necked	50	100	100	100	50	-	-	-	-	-
Canvasback	150	150	150	100	100	50	50	50	25	10
Scaup	400	500	800	800	800	500	200	100	100	100
Goldeneye	100	250	250	250	200	100	100	50	50	10
Bufflehead	50	100	50	50	25	-	-	-	-	-
Ruddy										
Other										
Total Ducks	7,850	10,450	9,800	7,950	6,925	4,870	4,050	3,750	3,525	3,345
Coot:	2,000	2,500	2,500	2,500	2,000	1,000	1,000	1,000	1,000	1,000

3 -1750a

Cont. NR-1

(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE War Horse LakeMONTHS OF September TO December, 19 69

(1) Species	(2) CLASS C DATA Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production : Broods: Estimated : seen : total	
	11/10-16 11	11/17-23 12	11/24-30 13	12/1-7 14	12/8-14 15	12/15-21 16	12/22-28 17	12/29-1/4 18			
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada	200	100	50	50						28	
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard	50	50	100	100							
Black											
Gadwall	400	100	100	100							
Baldpate	1,000	500	500	500							
Pintail	50	-	-	-							
Green-winged teal	100	50	50	50							
Blue-winged teal	-	-	-	-							
Cinnamon teal	-	-	-	-							
Shoveler	25	-	-	-							
Wood											
Redhead	1,200	1,200	800	800							
Ring-necked	-	-	-	-							
Canvasback	10	-	-	-							
Scaup	100	50	50	50							
Goldeneye	10	-	-	-							
Bufflehead	-	-	-	-							
Ruddy	-	-	-	-							
Other											
Total Ducks	2,945	1,950	1,600	1,600						494,270	
Coot:	500	500	500	500						129,500	

(over)

	(5)	(6)	(7)	SUMMARY
	Total Days Use	Peak Number	Total Production	
Swans	28	2		Principal feeding areas <u>Submergent vegetation and</u>
Geese	10,010	200		<u>cultivated grain fields in the area.</u>
Ducks	494,270	10,400		Principal nesting areas _____
Coots	129,500	2,500		
				Reported by <u>Charles W. Gibbons</u>

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).

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

W A T E R F O W L

REFUGE Wild Horse

MONTHS OF September TO December, 1969

(1) Species	(2) CLASS C DATA Weeks of reporting period									
	9/1-7 1	9/8-14 2	9/15-21 3	9/22-28 4	9/29-10/5 5	10/6-12 6	10/13-19 7	10/20-26 8	10/27-11/2 9	11/3-9 10
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada										
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard										
Black										
Gadwall										
Baldpate										
Pintail										
Green-winged teal										
Blue-winged teal										
Cinnamon teal										
Shoveler										
Wood										
Redhead										
Ring-necked										
Canvasback										
Scaup										
Goldeneye										
Bufflehead										
Ruddy										
Other										
Coot:										

DRY ENTIRE PERIOD

3 -1750a

Cont. NR-1

(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE Wild Horse LakeMONTHS OF September TO December, 1969

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen : total	
	11/10-16	11/17-23	11/24-30	12/1-7	12/8-14	12/15-21	12/22-28	12/29-1/4			
<u>Swans:</u>											
Whistling											
Trumpeter											
<u>Geese:</u>											
Canada											
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
<u>Ducks:</u>											
Mallard	----- dry entire period -----										
Black											
Gadwall											
Baldpate											
Pintail											
Green-winged teal											
Blue-winged teal											
Cinnamon teal											
Shoveler											
Wood											
Redhead											
Ring-necked											
Canvasback											
Scaup											
Goldeneye											
Bufflehead											
Ruddy											
Other											
<u>Coot:</u>											

(over)

	(5)	(6)	(7)	
	Total Days Use	Peak Number	Total Production	SUMMARY
Swans	0	0		Principal feeding areas <u>Entire lake bottom and adjacent</u>
Geese	0	0		<u>grasslands and stubble fields.</u>
Ducks	0	0		Principal nesting areas _____
Coots	0	0		

Reported by Charles W. Gibbons

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).

W A T E R F O W L

REFUGE Yellow Water Lake

MONTHS OF September TO December, 1969

(1) Species	:CLASS C DATA (2)									
	: Weeks of reporting period									
	:9/1-7 1	:9/8-14 2	:9/15-21 3	:9/22-28 4	:9/29-10/5 5	:10/6-12 6	:10/13-19 7	:10/20-26 8	:10/27-11/2 9	:11/3-9 10
Swans:										
Whistling Trumpeter							10	12	10	8
Geese:										
Canada	20	25	25	25	50	50	50	50	75	75
Cackling Brant										
White-fronted Snow										
Blue										
Other										
Ducks:										
Mallard	300	300	300	500	500	500	200	200	200	100
Black										
Gadwall	150	200	250	250	150	150	150	100	100	50
Baldpate	100	150	150	250	250	250	200	200	200	200
Pintail	150	250	300	250	250	150	150	50	50	50
Green-winged teal	300	400	400	200	200	200	200	200	100	100
Blue-winged teal	400	500	800	600	400	200	200	100	100	50
Cinnamon teal	25	50	50	25	25	25	25	-	-	-
Shoveler	150	250	350	350	250	250	150	150	150	75
Wood										
Redhead	-	-	-	150	250	250	100	50	50	25
Ring-necked	-	-	-	25	50	50	-	-	-	-
Canvasback	-	-	10	25	25	25	10	10	10	-
Scaup	-	-	150	250	300	300	100	100	100	100
Goldeneye	-	-	-	100	100	100	100	50	50	50
Bufflehead	10	10	20	20	50	40	20	-	-	-
Ruddy										
Other Merganser	-	150	150	100	50	50	-	-	-	-
Total Ducks	1,585	2,260	2,930	3,095	2,850	2,540	1,605	1,210	1,110	800
Coot:	250	500	1,000	1,000	800	500	500	100	100	100

3 -1750a

Cont. NR-1
(Rev. March 1953)WATERFOWL
(Continuation Sheet)REFUGE Yellow Water LakeMONTHS OF September TO December, 19 69

(1) Species	: CLASS C DATA (2)								: (3) Estimated waterfowl days use	: (4) Production : Broods: Estimated : seen : total	
	: Weeks of reporting period										
	11/10-16 11	11/17-23 12	11/24-30 13	12/1-7 14	12/8-14 15	12/15-21 16	12/22-28 17	12/29-1/4 18			
Swans:											
Whistling	8									56	
Trumpeter										280	
Geese:											
Canada	75	50	40	20						4,110	
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard	100	100	100	100						24,500	
Black											
Gadwall	50	50	-	-						11,550	
Baldpate	100	100	50	50						15,750	
Pintail	25	-	-	-						11,725	
Green-winged teal	100	50	50	50						17,850	
Blue-winged teal	50	-	-	-						23,800	
Cinnamon teal	-	-	-	-						1,575	
Shoveler	75	-	-	-						15,400	
Wood											
Redhead										6,125	
Ring-necked										875	
Canvasback										805	
Scaup										10,500	
Goldeneye	50	50	-	-						4,550	
Bufflehead										1,190	
Ruddy											
Worm-eating Merganser										3,500	
Total Ducks	650	350	200	200						149,695	
Coot:	100	50	50	50						35,700	
				(over)							

	(5)	(6)	(7)	SUMMARY
	Total Days Use	Peak Number	Total Production	
Swans	336	12	-	Principal feeding areas Inlet of reservoir and
Geese	4,410	75	-	adjacent grain fields.
Ducks	149,695	3,095	-	Principal nesting areas
Coots	35,700	1,000	-	
				Reported by Charles W. Gibbons

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).

3-1751

Form NR-1A
(Nov. 1945)MIGRATORY BIRDS
(other than waterfowl)Refuge Half Breed, Hailstone,
Lake MasonMonths of September to December 1959
Easement Refuges

(1) Species Common Name	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total Estimated Number
	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	
I. Water and Marsh Birds:										
Western Grebe	Last Period		150	8-69	4	11/20/69				150
Eared Grebe	"		1,000	8-69	100	10/ 4/69				1,000
Double-crested cormorant	"		400	10-69	75	10/ 4/69				400
White pelican	"		150	9-69	10	10/10/69				150
Great Blue Heron	"		10	8-69	1	10/ 4/69				10
American Bittern	"		5	8-69	1	10/20/69				5
II. Shorebirds, Gulls and Terns:										
Avocet	Last Period		150	8-69	1	9/25/69				250
California Gull	"		1,000	9-15-69	200	10/ 4/69				1,000
Wilson Phalarope	"		500	8-69	1	10/ 4/69				500
Killdeer	"		500	8-69	2	10/ 4/69				500
Common Tern	"		50	8-69	1	10/ 4/69				50

(over)

(1)	(2)	(3)	(4)	(5)	(6)	
III. <u>Doves and Pigeons:</u> Mourning dove White-winged dove	Last Period	500	9/8/69	3	11/20/69	800
IV. <u>Predaceous Birds:</u> Golden eagle Duck hawk Horned owl Magpie Raven Crow Bald Eagle	5-year long residents	-	-	1	10/4/69	
				2	10/4/69	

Reported by Charles W. Gibbons

INSTRUCTIONS

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

3-1751

Form NR-1A
(Nov. 1945)

MIGRATORY BIRDS

(other than waterfowl)

Refuge Wild Horse, War Horse
and Yellow WaterMonths of September to December 1969Bankhead-Jones Lands

(1) Species Common Name	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total Estimated Number
	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	
I. Water and Marsh Birds:										
Western Grebe	Last Period		250	8-69	1	10/ 4/69				250
Eared Grebe	"		500	8-69	4	10/ 4/69				500
Double-crested Cormorant	"		200	9/28/69	200	9/28/69				200
White Pelican	"		350	8-69	25	10/4/69				350
Great Blue Heron	"		10	8-69	2	10/ 4/69				10
II. Shorebirds, Gulls and Terns:										
California Gull	Last Period		350	8-69	50	10/20/69				350
Killdeer	"		50	8-69	4	10/4/69				50
Wilson phalarope	"		500	8-69	25	10/4/69				500
Avocet	"		75	8-69	1	10/4/69				75

(over)

NARRATIVE REPORT 1969

Charles M. Russell National Wildlife Range
Box 110 - Airport Road
Lewistown, Montana

and

Hailstone, Halfbreed, Mason,
Yellow Water, War Horse & Wild Horse
National Wildlife Refuges

Cover Photo
Coyote by Charles Peck
Photo No. 69-1460, August 1969

CHARLES M. RUSSELL NATIONAL WILDLIFE RANGE
Narrative Report

January - December 1969

PERSONNEL

General Schedule

Frank R. Martin	Refuge Manager-in-Charge
*Michael B. Brownlee	Refuge Manager (Lewistown)
Bob L. Burkholder	Wildlife Pilot-Biologist
John R. Foster	Refuge Manager (U.L. Bend) EOD 6/69
Charles W. Gibbons	Refuge Manager (Fort Peck)
John R. Gustafson	Asst. Refuge Manager (Slippery Ann) Resigned
William C. Krantz	Wildlife Biologist EOD 6/69 6/69
Betty L. Minnich	Clerk-Typist (part time)
Charles S. Peck	Refuge Manager (Slippery Ann)
Joel G. Peterson	Wildlife Biologist Trainee (5/5-7/11)
Marvin L. Plenert	Wildlife Biologist (Wilderness-R.O.)
Linda H. Wicks	Refuge Clerk

Unclassified

Floyd L. Emery	Maintenanceman (WAE)
Frank V. French	Maintenanceman (WAE)
Dean A. Gilbert	Shop Foreman
Harold H. Jones	Maintenanceman Foreman
Lynes D. Kilby	Maintenanceman (WAE)
John Kombol	Maintenanceman (WAE)
Joseph J. Kombol	Maintenanceman (WAE)
Stephen C. Linder	Maintenanceman - Resigned 9/69
Frank Oset, Jr.	Carpenter (WAE) Resigned 10/69
Samuel A. Sage	Maintenanceman
Gerald A. Sullivan	Mechanic HD
Joe F. Zupec	Maintenanceman (WAE)

Temporary

William F. Davis	General Operator HD
Nicholas J. Engler	Laborer
Curtis A. Fowler	General Operator HD
Walter W. Grovom	Maintenanceman
Harry R. van der Hagen	General Operator HD
Gerald R. Ulrich	Groundskeeper (College Work Study Program)

*Absent on 10 months' training assignment in Washington, D. C.

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Satellite Refuge Report follows

CHARLES M. RUSSELL NATIONAL WILDLIFE RANGE
Lewistown, Montana

NARRATIVE REPORT
January - December 1969

I. GENERAL

A. Weather Conditions

Winter conditions in January and February were reminiscent of the good old days in Montana. The snow was deep and it stayed late. Good early summer moisture resulted in an accelerated growth of grasses and the midsummer dry spell resulted in many fires in central Montana. Ten occurred on the Wildlife Range. The usual talk about closing hunting seasons was passed around among anxious hunters but it was not necessary. Some rainfall in October and November ended their concern.

Slippery Ann Weather Record

	<u>Snowfall</u>	<u>Precipitation</u>			<u>Extremes</u>	
		<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>Max.</u>	<u>Min.</u>
January	19"	.25	.22	.87	34	-48
February	2"	.59	.17	.06	46	-27
March	2"	.82	.14	.13	71	-12
April	-	1.56	.52	1.25	82	30
May	-	1.15	1.47	1.68	91	28
June	-	3.27	3.36	2.57	96	31
July	-	.59	1.06	2.04	100	44
August	-	.01	2.23	.11	107	37
September	-	2.33	1.24	.44	98	32
October	3"	.80	.29	1.12	73	14
November	-	T	-	-	65	5
December	2"	.18	.46	.11	48	3
Totals	28"	11.55	11.16	10.38	107°	-48°

Extremes, both maximum and minimum temperatures, were greater than for the past several years. Spring and early summer precipitation was distributed from April through July in such a manner that not only decreased the fire danger but increased the opportunities for successful waterfowl production on stock ponds and natural potholes.

Fort Peck Weather Record

	<u>Precipitation</u>			<u>Extremes</u>	
	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>Max.</u>	<u>Min.</u>
January	.62	.19	1.03	44	-42
February	.18	.08	.06	44	-22
March	.71	.09	.45	63	-11
April	1.45	.82	3.12	77	24
May	.36	.60	1.01	93	30
June	1.59	2.38	2.93	90	34
July	.37	1.85	3.65	94	47
August	.02	3.58	.05	97	49
September	2.74	.69	.11	95	36
October	.72	.13	1.51	69	21
November	.31	.13	T	67	4
December	.22	.30	.24	55	4
Totals	9.29	10.84	14.16	97°	-42°

B. Habitat Conditions

1. Water

The Fort Peck Reservoir froze over on January 2 and was 100% ice-free by April 23. At the end of 1969 the reservoir was not yet frozen over. The open water area extended from Timber Creek east. The highest level attained was 2246.8 on July 21. This compares with 2245.7 in 1967; 2245.9 in 1965; and 2244.8 in 1948. The level reached in 1969 is the highest on record since the dam was built. Listed below is a record of water levels for the last three years.

FORT PECK RESERVOIR - POOL LEVEL

	<u>1967</u>	<u>1968</u>	<u>1969</u>
Jan 1	2235.5	2238.0	2238.7
Feb 1	2234.6	2237.0	2237.5
Mar 1	2234.1	2236.4	2236.3
Apr 1	2235.3	2237.1	2238.4
May 1	2235.9	2238.5	2240.9
Jun 1	2236.7	2240.4	2242.3
Jul 1	2243.8	2244.4	2244.1
Aug 1	2245.4	2244.3	2246.4
Sep 1	2244.1	2243.7	2244.7
Oct 1	2242.8	2242.5	2243.3
Nov 1	2241.0	2241.2	2241.9
Dec 1	2239.3	2240.1	2240.7

Ice on the Missouri River at the Robinson Bridge began breaking up on the night of April 2, and by the evening of April 3 the channel was clear and flowing. No unusual ice jams occurred and no flooding or damage

resulted from the breakup except upstream above the Wildlife Range. Destructive ice jams were barely averted during the week of March 17 to 24 when the river raised 10' in two days. The river ice was approximately 24" thick at this time and if it had broken up, jams would almost certainly have formed. The river did get out of its banks at this time but caused little damage on the Wildlife Range. It began to recede on March 23 and the ice rotted away and went out quietly on April 3.

2. Food and Cover

Due to better moisture conditions, food and cover for wildlife was excellent throughout the Wildlife Range. At Fort Peck, crops left standing from the 1968 farming program were utilized by wintering mallards and later by spring migrants.

Both Canada geese and ducks used crop residues and grain left standing in the west end units near Slippery Ann Wildlife Station.

The extremely severe winter caused no problems with wintering big game and browse, generally speaking, continues to improve from the conditions of the 1950's.

C. Aircraft Operation

This very important facet of the CMR operation was drastically curtailed in early spring because of Pilot-Biologist Burkholder's assignment to the Central Office and the delay in getting a major overhaul of the contract airplane engine after his return. (This work was scheduled during his absence but was delayed by the contractor.)

Later the flying arrangement at CMR was terminated after an accident involving power lines in the vicinity of the airstrip at Slippery Ann. No injuries resulted and damage to the aircraft was minimal considering the expected results of this type of accident. The aircraft was landed on the strip "dead-stick" and flown to Lewistown the same day after field repair.

Subsequent flying has been accomplished by occasional charter of aircraft and piloted by commercial sources at Lewistown and Fort Peck. This arrangement, however, is less than satisfactory resulting in impaired efficiency, much less quantity and quality of information at a much greater cost per unit effort.

Since 1964, when the aircraft operation was initiated, flying time averaged 425 hours per year. This year 76 hours were flown prior to the May 19 incident and about 30 charter hours during the remaining portion of the year.

II. WILDLIFE

A. Migratory Birds

1. Waterfowl

Production of waterfowl on the Wildlife Range was normal with an increase of an estimated 20% over last year's efforts. Adequate stock pond water was assured with a heavier than usual snow pack and good rains in early April.

Ice jams and resultant scourings of many miles of river nesting habitat occurred on the Missouri upstream from the Wildlife Range. In this case, whole islands were denuded and all cover removed from the river banks up to the first level flood plain. This situation has no doubt occurred previously but fortunately at very infrequent intervals. The effects on goose production was less than it might have been since habitat improvement on the Wildlife Range provided alternate nesting sites for the geese displaced by this natural phenomenon.

The wintering population of mallards at Fort Peck was down compared with past years. This may have been caused by the "special" mallard drake season which lasted until January 5, 1970. Normally, 10,000 to 20,000 mallards winter at Fort Peck but this year only about 5,000 mallards remained after the special 1968-69 special season closed. The winter feeding of mallards commenced January 9 and terminated March 13 when weather conditions eased up and allowed the birds to find suitable feed in nearby farm fields. The prolonged cold weather experienced during January and February necessitated feeding about 50 bushels of barley daily. The total amount fed during the winter was 3,175 bushels.

In mid-January, mallard weights showed the males averaged 2 lbs. 8 oz. and the females 2 lbs. 4 oz. By the middle of March the males averaged 2 lbs. 11 oz. and the females 2 lbs. 5 oz. Losses therefore were very minimal this year.

Due to lack of aerial coverage this year the number of flightless geese moulting on Fort Peck Reservoir was not determined. The population appeared about the same but it is unknown whether or not the increase of the past several years continued. Last year the goose population totaled 2,100; an increase of 400 over that tallied in 1967.

Due to the mild fall extending well into December, migratory waterfowl were present in greater numbers for a longer period of time than is normally the case. The mallards wintering at Fort Peck numbered 20,000 in November; dropping to 15,000 at the year's end. One oddity in December involved a white-fronted goose which took up residence with the captive flock at Fort Peck. This species is seldom seen on CMR and as an early migrant it should have been "long gone" from this latitude.

2. Captive Geese

The captive goose flock at Slippery Ann was phased out and the pinioned birds were transferred to the Fort Peck Wildlife Station. The captive flock had fulfilled its purpose on the west units. Over 100 pairs of Canada geese now nest within a 20 mile radius of the Slippery Ann Station. The captive flock now at Fort Peck should prove successful in establishing a nesting population there.

Since a number of the pinioned birds were mated with flying birds, pairs and their broods were caught immediately after hatching to avoid separating pairs. This practice made it possible to move all the pinioned birds without splitting pairs. It will be interesting to see if the migrating flyers return to their mates at Fort Peck or to their former nesting location at Slippery Ann in the spring of 1970.

Three pairs of Canada geese with 20 young were also transferred to the Benton Lake National Wildlife Refuge in a continuing attempt to establish a self-sustaining nesting population there.

Among pinioned birds at Slippery Ann, 14 pairs produced a total of 58 goslings for an average brood size of 4.1. This figure cannot be compared with the 23 broods averaging 4.5 in 1968 since the 1968 figures include flying birds that nested in the immediate vicinity of the captive flock. An additional 71 goslings were produced on the earthen nesting islands of the waterfowl impoundments just east of the captive goose pasture at Slippery Ann. This is a slight decrease from the 84 goslings produced in the same area in 1968. Great-horned owls nesting in the area were controlled and no other predation was noted to explain this decrease.

Twenty-five new elevated nesting platforms were erected along the river on the west end of the Wildlife Range (see Photo 69-298). There are now a total of 93 such structures on the river above Fort Peck Lake. An April 16 census indicated 48 (slightly over 50%) of these structures were in use by geese and 3 by great-horned owls. In addition, there were 55 paired geese and 23 singles on territory that was not associated with either the platforms or those birds nesting in the goose ponds at Slippery Ann. This indicates a production of over 400 geese as a result of the captive goose flock management. Hopefully, this success can be duplicated on the east end at Fort Peck.

The transfer of birds to Fort Peck began in February when 11 adults were moved from Slippery Ann. Of these, 3 pairs attempted to nest but only 1 gosling was produced. In May and June the remainder of the flock was moved (36 adults and 28 goslings). Ten goslings died and 4 adult geese flew out of the "pasture" to establish residence nearby. The captive flock now numbers 66. The number of established pairs is unknown but is estimated at 12.

Two trumpeter swans were transferred from Red Rock Lakes National Wildlife Refuge to the Fort Peck display enclosure. They were rendered incapable of flight by a process called "ankilosis of the wrist" and both appeared to readily accept their new home. In October, however, the male died. Necropsy failed to determine the cause of death.

3. Other Water Birds

No change was noted from previous years in the abundance of gulls, terns, cormorants, pelicans, or other water birds. Great blue herons were first sighted March 31 and the rookery at Harriet Island near Slippery Ann contained 48 active nests. This rookery is near the main access road and part of the self-guided tour route. It held up nicely under the increased public exposure and served an important function as a matter of public interest and education. Other heron/cormorant rookeries in the lake itself continue to decline as wave and ice action take their toll of over-water snags. Nesting sites of osprey and Canada geese are likewise affected since they both utilize the same habitat.

Little brown cranes again "overheaded" the CMR, preferring to remain overnight at some haven further south.

4. Shore Birds

No changes were noted. Due to manpower shortage and other work programs no banding of mountain plover was accomplished.

5. Doves

No satisfactory census technique for mourning doves has been developed for application at CMR. On the basis of gross observations during the summer and early fall the number of doves present appeared to be 25-40% less than during a corresponding period in 1968. Due to the reduced density of doves and a shortage of manpower only 91 doves were banded this year.

A long range cooperative study, designed jointly by Montana State University and the Bureau, is being implemented to answer some of the basic questions concerning mourning doves in this rangeland habitat. If the study is funded it will start next summer and continue for a two-year period. Hopefully, it will supply answers needed to carry out more effective management of this important dove production area.

B. Upland Game Birds

Sharp-tailed grouse showed a definite decrease from last year's abundant population but were present in numbers approximating the average of the past five years.

Sage grouse numbers increased considerably from last year and were the highest observed during the past five years. Unfortunately, the annual aerial survey of dancing grounds was not conducted and it is unknown if this apparent increase was reflected in this particular population index.

The gray partridge population appeared to be slightly lower than last year, possibly a result of the severe winter of 1968-69. Table I (Section 6) reflects these trends although measuring only a small portion of the Wildlife Range.

The pheasant population along the river is generally unchanged from a year ago and it is doubtful that they will again reach the numbers obtained prior to 1964. Many bottom lands that provided ideal pheasant habitat have been flooded by high water in the Fort Peck Reservoir since 1964 and few pheasants have been observed in these locations since. Most river bottoms upstream from the reservoir where cereal crops are grown have a limited number of pheasants which should produce well in those years when good nesting conditions prevail.

The wild turkey population in the west unit has decreased from 127 at the end of 1968 to an estimated 80 birds at the end of 1969. A number of factors probably account for this reduction. Fewer birds were sighted following the extremely cold winter of 1968-69 despite adequate available feed. The flock sustained one transplant of 13 birds, a spring gobbler hunt, and a fall hunting season. The Montana Fish and Game Department trapped the 13 turkeys in late winter and released them within 50 miles of the trap site. Although these trapped birds were marked with colored leg bands, none have been observed in the vicinity of the original trap site.

A general spring gobbler hunt was held during the first 10 days of May. Hunter success was extremely low and only 4 birds are known to have been taken; 1 was an illegal hen.

Production during the spring of 1969 was extremely poor with only 41 young observed. Weather conditions were not particularly adverse during this period and it is likely that the spring gobbler hunt during nesting season adversely affected the nesting success. Most hunters in this area walk the hills pursuing the birds rather than hunting from a blind and using a call. This method may account, in part, for the extremely low hunter success. An eight day general season for turkeys was held in September and October. The turkey hunters far outnumbered the turkeys. Only 13 birds are known to have been taken.

It is doubtful that the small turkey population can withstand the annual combined pressures exerted upon it.

The only other huntable population of turkeys on the Wildlife Range is in the Musselshell-Devils Creek area. This population is apparently holding its own but it sustains less pressure than the more accessible population at Slippery Ann.

The State transplant of 16 turkeys in the Pines area has apparently failed. Sixteen birds were introduced to the area in 1966 without our knowledge or sanction. After a few initial sightings the first year, the birds disappeared and the attempted transplant is now presumed to be a failure.

C. Big Game Animals

1. Mule Deer

The decline in deer numbers which progressed at a steady rate the past several years leveled off in 1968 and doe-fawn ratios increased slightly from the 100:70 recorded for 1967. This year doe-fawn index jumped to 100:130 and, interestingly enough, hunting pressure was the lowest on record. This reflects the poor hunter success of the past several years-- a point that was in controversy with the State who claimed that hunters were satisfied and doing well. From these and other indications, the mule deer population is judged to be on an "upswing" and the problem may soon be to provide for a suitable harvest and hold the population in harmony with its habitat.

2. White-tailed Deer

This species continues to flourish despite the heavy hunting pressure exerted upon it. Unlike the vulnerable mule deer, the "sneaky" white-tail while seemingly scarce during hunting season is obviously abundant immediately before and soon after the season. A reduction in numbers while not yet critical would be desirable. Should the need become critical, means other than more liberal seasons and limits would have to be explored since hunting has already reached a point of diminishing returns. One salvation of the white-tailed deer in this area seems to be their adaptability, good or bad, to other than what is considered their prime habitat on the river bottoms. Their encroachment on the typical mule deer habitat in the "breaks" seems to be a safety valve permissible only so long as this habitat is under-utilized by the latter.

3. Elk

This important reintroduced species is on a biologically sound basis as evidenced by herd productivity and general condition. Three fairly distinct herds occur from east to west--the Pines herd, the Burnt Lodge herd, and the west end herd. The latter has been managed for an increase while the former is managed at its present level with the harvest equalling the increment. The Burnt Lodge herd is increasing due primarily to its relative inaccessibility.

Hunting of these animals is controlled by permits. There is no general season except for bow and arrow which precedes the rifle season on deer. Last year 280 rifle hunting permits were issued. This year this was increased to 310 with the largest increase occurring in Unit 62 (Burnt Lodge area). Here, 170 permits were issued to encourage a larger take in this relatively inaccessible area.

Although the usual wildlife inventories were not possible this year, it is assumed that unantlered adult:calf ratios are still excellent--ranging from 100:56 west to 100:59 in the east. This elk herd is one of the most productive of any in the state and provides a degree of hunter success seldom equaled anywhere.

More hunters participated in the archery season for deer and elk than during the regular deer rifle season. Pressure from archers increased by an estimated 10% over the high participation level of last year. This was not only on weekends but continued through the week days as well.

Appreciation of elk on CMR is not all hunter-oriented. Throughout the summer and early fall, countless numbers of people enjoy seeing, hearing, and photographing the elk that take up temporary residence in the bottoms adjacent to Slippery Ann. This activity is part of the self-guided tour route and up to 75 elk made themselves available until late December for this form of non-consumptive public use.

4. Bighorn Sheep

The transplant of 43 Rocky Mountain bighorn sheep was concluded in 1961. These were introduced on CMR to replace the extinct Audubon's bighorn which disappeared sometime between 1916 and 1923 (see Photo 69-1564). The sheep have established themselves and the herd is slowly increasing. This year at least 23 lambs were sighted; 16 inside the enclosure and 7 outside. Last year the total known production was 22 lambs.

The Bureau recommended a limited harvest of old age class rams as a management measure and the State issued 5 permits for the area. The season extended from September 15 to December 14 and all permits were filled. In late November, 3 mature rams over 3/4 curl were sighted with 26 ewes inside the enclosure which would seem to insure an adequate breeding stock for next year.

Known losses in addition to those taken during hunting season include a five year old ewe that tangled with a porcupine during the late winter and starved to death as a result of a mouth full of quills and two ewes that were shot illegally during the deer season.

5. Antelope

This species used the Wildlife Range on an on-and-off basis. During a severe winter migrations occur to the shelter provided by the "breaks" habitat. Antelope numbers are increasing following the severe winter in 1966-67 but the recovery has not been rapid.

Another antelope, a male, was added to the Lewistown display pasture in September (see Photo 69-1440).

At Fort Peck an antelope died in the Leo B. Coleman Wildlife Display Pasture resulting in a net gain of zero to that wildlife display. Perhaps the unnamed male and Sally may cause some adjustment to future total numbers and a gain can be reported next year.

A yearling male pronghorn was obtained from a rancher near Malta this spring. The young animal was seen in the enclosure often and appeared to be the mate for the female pronghorn which has been in the enclosure since 1966. The young male died in September following a short period of sickness. This is the second unsuccessful attempt to have a male pronghorn in the Leo B. Coleman Enclosure.

6. Bison

At Lewistown the pair of bison received from surplus at Fort Peck continued to thrive. An addition to the pair afforded an opportunity for a naming contest among school children. The winning name "Chips" was judged by the local news editor and the originator was given an appropriate prize (see Photo 69-1146).

The three bison, antelope, ducks, geese, and other wildlife in the head-quarter's area provide a foci of conservation education among local youth groups. Guided tours are in constant demand (see Photo 69-832).

The 240 acre Leo B. Coleman Display Pasture at Fort Peck contains the original stocking of 3 buffalo (1 bull and 2 cows). This year 2 heifer calves were born. The heifer calf born in 1968 is still in the enclosure which brings the total to 6 buffalo at Fort Peck. The animals have become so accustomed to the enclosure that they can be found most anytime and pay little heed to visitors or vehicles near them.

Tentative arrangements have been made with the Bison Range to have the one surplus buffalo disposed of annually with the surplus at Moiese.

Numerous deer, both whitetail and mule deer, are found in the enclosure. Attempts to drive the animals out failed and other reduction methods will have to be attempted in order to protect the habitat.

7. Longhorn Cattle

In November the three longhorn steers were moved from the west end of CMR to Fort Peck and placed in a display pasture adjacent to that of the bison. They are a welcome addition to the wildlife display and have attained an unusual amount of publicity from the local press and radio station. These animals are 6, 11, and 15 years old and display impressive horns reminiscent of the Texas cattle drives that had their northern terminus on what is now the Charles M. Russell National Wildlife Range (see Photo 69-1524).

The Corps of Engineers provided under annual permit a tract of land for the longhorn exhibit. At the request of the Portland Regional Office, we did not establish this display as a permanent feature by asking for a long-term permit. This matter will be resolved in the upcoming Master Plan.

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

1. Fur Animals

Except for beaver, fur animal populations on the Wildlife Range continue at the low level which seems normal for this area. Beaver surpluses are harvested annually and the aerial cache census indicated a quota of 95 for the 1969-70 period. Last year 105 were trapped in the same units on the west end. At Fort Peck a permit was issued for 15 beaver and 50 muskrats, based primarily on the need to control the former because of the nuisance it creates near the summer homes around the lake. The only other trapping permitted is for mink at the Fort Peck Marina where they occasionally become a nuisance by feeding in the minnow tanks at this commercial establishment.

2. Predators

Control of coyotes is necessary on portions of the Wildlife Range for protection of livestock. The entire area was zoned to better delineate "1080" control areas and document the need for control. Some of the area was placed in a "no control" category where the need for control was slight and other values paramount. This is a flexible program and changes may occur from year to year depending upon the many variables. This program was coordinated at all times with Wildlife Services, the State, and the Bureau of Land Management. In addition, the Animal Control Plan was updated and approved. It reflects the current and future needs of the Wildlife Range and places a greater responsibility for policy decisions on the refuge manager.

Predation on nesting geese was not a problem during this reporting period and no control was necessary. Skunks although no more abundant than average constitute a nuisance problem around the Slippery Ann Station area and are controlled on an individual basis.

Mountain lions, bobcats, raccoons, and several avian predators occur on the Wildlife Range but pose no particular threat to prey species populations and are afforded the same protection as other wildlife on the area.

3. Rodents

Prairie dog populations are expanding rapidly. Established colonies are enlarging and new towns seem to "spring up overnight". Because black-footed ferret habitat is involved, the Denver Wildlife Research Laboratory was contacted for a possible solution to this problem and though no panacea is offered, there are some novel approaches that may warrant further attention.

Populations of both house mice and deer mice are presently higher than during the past several years. They constitute a considerable nuisance problem in residences and camp facilities and cause considerable damage to sacked seed grain stored at Slippery Ann. Although *Microtus* are present there were no indications their numbers would get out of hand like they did during the irruption that occurred about ten years ago.

4. Other Mammals

White-tailed jack rabbits continued to increase but the most spectacular increase has been with cottontail rabbits. They are presently more numerous than they have been at anytime during the past five years.

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

No change was noted in any of the above populations. The mid-winter eagle census showed no significant upward or downward trend. Osprey nesting within the Wildlife Range during the past year was believed to be even less successful than during the record low reproduction recorded in 1968. Lack of aerial coverage precluded the usual monitoring of this nesting activity. Nesting sites (inundated timber snags) are disappearing at a rapid rate due to wind, wave, and ice action on the reservoir.

F. Other Birds

There were some birds sighted this year not included in the present CMR bird list. Such first sightings included the pine grosbeak and dippers (water ouzel). The latter was observed December 15 in Duck Creek below the Fort Peck Dam.

G. Fish

The sport of snagging paddlefish continued to gain interest. Some enthusiasts began the first weekend after the river ice broke up in

the spring and continued their efforts until late fall. The most productive time for paddlefishing appears to be from mid-April to early July but a few "die-hards" made good catches in mid-October. The largest fish known to have been taken this year was a spawning female that weighed 110 pounds.

Fishery biologists from the Montana Fish and Game Department hope to implant telemetric devices in paddlefish next year in an effort to learn something of their spawning habits. Refuge personnel will participate to the extent that money and manpower permit.

Northern pike fishing success decreased from last year. The Montana Fish and Game Department trapped several adult northerns this spring and placed them in stock watering ponds near Fort Peck. When the fingerling northerns were from 4" to 6" in length they were planted in the Fort Peck Reservoir. About 5,000 fingerlings were planted. The State has asked the Corps of Engineers to construct several dikes near the Fort Peck Reservoir in coulees that will receive run-off in the spring. The State will plant these newly created ponds with adult pike and release the fingerlings into the reservoirs at the proper time. The State feels this will insure reproduction of northern pike in the reservoir. When natural spawning conditions arise through manipulation of water levels there should be sufficient numbers of pike to take advantage of the conditions and spawn. They do not feel this method of rearing pike will in itself provide enough pike to sustain a sport fishery.

We intend to keep informed on the proposals and will cooperate with both agencies if the proposals do not conflict with our primary goals.

On May 6, 18,450 4" rainbow trout were planted in the trout pond. Fishing was excellent during the summer and fall months for these fish. Yellow perch have also become established in the trout pond. If the perch attain a good size the State may change the "trout pond" into a warm water fishery by discontinuing the stocking of trout.

A total of 92,000 3" Coho salmon were planted in the Missouri River above the Fort Peck Reservoir. A total of 49,000 6" Coho salmon with a clipped adipose fin were planted at Nelson Creek in the Big Dry Arm of the reservoir. This is the initial plant of Coho for Fort Peck Reservoir as directed by the Montana Fish and Game Commission. Plants are scheduled to continue for three years.

In late September and throughout October 12" to 14" Coho began appearing at Fort Peck. Fishing pressure prior to the hunting season was about normal and many Coho were caught. Fish and Game biologists reported trapping Coho in significant numbers in their traps through November but few were caught by fishermen as fishing pressure had almost ceased. All Coho caught or trapped were in the Fort Peck area.

H. Reptiles

Nothing to report.

I. Diseases

Nothing to report.

III. REFUGE DEVELOPMENT AND MAINTENANCE

A. Physical Development

At the Slippery Ann Wildlife Station (West Unit) the following projects were accomplishing during the reporting period:

1. Twenty-five goose nesting platforms were constructed and erected along the Missouri River upstream from the Slippery Ann Station. This brings the total number of nest platforms in place to 92.
2. Ten additional picnic tables were built and placed in picnic areas. Two toilets were fabricated and will be set on fiberglass vaults prior to the next public use season.
3. A combination drinking fountain water tap was installed along the tour route at the station. This was intended to replace the artesian well overflow as a facility for visitors drinking water but most visitors ignored the fountain and continued to use the well.
4. A display board for the tour route at Slippery Ann has been built and will be erected prior to the next visitor season.
5. In cooperation with the BLM, directional signs leading to the Turkey Joe Boat Ramp on the Wildlife Range were built and placed.
6. Information signs explaining certain refuge regulations affecting travel and public use on the Wildlife Range were constructed and posted at all main access points to the area. This is part of our program to gain better control over vehicular travel on the Wildlife Range and will follow by an extensive posting program in future years.
7. The pump supplying water for the Camp Charley complex was raised 20 feet in an attempt to improve the quality of the water. No improvement resulted and consultations are presently underway with Bureau engineers to correct this situation.
8. Four blind curves on the Sand Creek Trail were straightened to improve visibility and reduce the hazard to refuge visitors. A blind curve on Knox Ridge Road, site of a head-on collision last year, was straightened also.

9. A shale slide on the access road to Tract 635 was cleared and the drainage ditch cleaned. The above three jobs were done with minimal disturbance to the landscape in order to maintain the integrity of the area for consideration as a wilderness waterway.
10. Approximately 300 yards of Sand Creek Trail had to be moved when an owner of private land within the Wildlife Range boundary decided to fence his land on the property line. His new fence would have necessitated four gates or cattle guards in 300 yards and it was deemed more practical to move the location of the road. This is a bladed trail and not an elevated grade so little additional work was required.
11. A section of the main access road to the Slippery Ann Station developed a slide and required extensive repair. The slide was approximately 200 feet long and at times was dropping vertically at the rate of 3 feet in 24 hours. This section of road had been in place for nearly ten years and had not previously shown signs of instability. A range fire several years ago which destroyed the vegetative cover on the hillside may have been responsible for the slide.
12. Perforated steel landing mat obtained from excess property was laid at the pump site along the river. The pump site silts in annually when the river rises and the matting will provide a surface that will support the equipment needed to launch the pump float. A ramp walkway with cable hand rails was also installed to provide access to the pump float. The ramp is hinged in the middle permitting vertical movement with the fluctuating river level.
13. Two unusually heavy mid-summer rainstorms caused considerable damage to the sheet steel piling terraces on the Rock Creek spillway. Run-off water cut out below and around the piling. Several pilings had to be pulled and re-driven and the dirt fill around them replaced and tamped. Rock riprap is needed below the structures but such rock must be hauled so far that the cost is prohibitive.
14. The same cloudbursts that caused the above damage also flooded a campground and washed out a toilet and fiberglass vault. The facilities were repaired when the water receded.

In addition to the above, CMR personnel also assisted with the following work at the new U. L. Bend National Wildlife Refuge:

1. Completion of the pump access road including graveling.
2. Installation of a culvert at Hawley Creek.
3. Survey of dikes to be constructed.
4. Dismantling and salvaging timber bridge at Fourchette Creek.
5. Construction of abutments for new Fourchette Creek bridge.

At the Fort Peck Station (East Unit) the following items were accomplished during the year:

1. The captive goose pen was completed with the addition of two ponds, which were sealed with bentonite. An 18" wire extension was put into the ground from the bottom of the fence to discourage "digging under" by predators. A pump site on the dredge cut was constructed and riprapped with concrete blocks acquired from the Corps of Engineers.
2. Approximately 4.5 miles of fence was constructed around a portion of the existing horse pasture to hold the "Texas" longhorn cattle. About a mile of new fence was necessary to enclose a pasture to facilitate public viewing of the longhorns. The fence is 5 feet in height with six strands of barbed wire. Four metal gates were installed to facilitate entering and leaving the pasture.
3. The ceiling in the storage portion of the service building was finished. A ceiling and lighting was also provided for the rest-room. Doors were added to the shelving in the shop and peg boards installed for tools.
4. At Quarters #3 the board fence on the highway side of the house was replaced.
5. Prior to the hunting season, wooden recognition signs were placed on all the main access roads between Fourchette Creek and Fort Peck. Several signs were also set on roads at the Wildlife Range boundary in McCone County.
6. Throughout the period all vehicles and buildings at Fort Peck received maintenance as required.

B. Plantings

1. Aquatic and Marsh Plants

Nothing to report.

2. Trees and Shrubs

Several lilac bushes and sumac trees donated by one of the employees were set out at Slippery Ann and a number of Russian olive trees transplanted from the garden to locations around the station grounds.

3. Upland Herbaceous Plants

Nothing to report.

4. Cultivated Crops

Yields from refuge-farmed irrigated lands in the west unit were slightly less than last year but in all cases were adequate for the wildlife present. Inasmuch as all refuge-farmed crops were left unharvested, reported yields are estimated. Thirteen acres of corn produced an estimated 650 bushels, which will be nearly 100% utilized by the spring of 1970. Yields from this field would have been higher but elk and deer found the ears in the silk highly palatable. Fall use by migrating geese and winter use by wild turkeys and deer will clean up corn trampled by elk. An 11 acre millet field produced an estimated 660 bushels. This grain was used heavily by geese, mourning doves, elk, deer, turkeys, and pheasants. The corn and millet fields are adjacent to the tour route and work well to concentrate wildlife where they can be viewed by the visiting public.

Most sharecropped lands in the west unit are not irrigated and crop yields are dependent on precipitation. Rainfall during the past summer was a bit late for optimum grain production and is reflected by the yields which are lighter than last year. Except for 109 acres of barley, which was harvested to provide grain for the winter mallard feeding program at Fort Peck, all sharecropped cereal crops were also left unharvested and reported yields are again estimated. The harvested barley produced 2,300 bushels and unharvested barley is estimated to average 20 bushels per acre. Winter wheat yields were slightly higher and are estimated to average 30 bushels per acre.

On the refuge-farmed tracts below Fort Peck Dam, 30 acres were planted to wheat and 16 acres to barley. Wheat yields averaged 40 bushels per acre and the barley yield averaged 50 bushels per acre. All refuge-farmed crops were harvested and stored in grain bins for winter use.

C. Collections and Receipts

None to report.

D. Control of Vegetation

Thirty-four acres of cropland and 7 acres of ditch bank were sprayed with 2,4-D amine at the acid equivalent rate of $1\frac{1}{2}$ pounds per acre. Results were good with kill rate averages of 80% to 90%. The airstrip at Slippery Ann was treated with Ureabor at the rate of 50 pounds per acre. The application was 100% effective and totally eliminated weeds.

E. Planned Burning

None to report.

F. Fires

Fires on the Wildlife Range were not a serious problem in 1969. Ten fires totaling about 472 acres occurred within the boundary. Several larger fires, however, ranging from 500 to 3,000 acres burned on public lands adjacent to the Wildlife Range and refuge personnel and equipment were called to assist in suppression activities. August was an extremely hot dry month and most fires took place in late August and early September. This is considerably different than the usual pattern in which most fires occur between mid-June and late July. All fires within the Wildlife Range during 1969 were lightning-caused. Following is a list of all fires occurring on the Wildlife Range in 1969.

BLM							Total Acres
District	Fire Name	Location	Date	Fuel Type	Burned		
Malta	Duvall Coulee	Sec 9 T22N R24E	4/24/69	western woodland	0.5		
	Killed Woman	Sec 23 T23N R32E	9/3/69	ponderosa pine	80.0		
	Beauchamp Creek	Sec 7 T22N R28E	8/27/69	western woodland	7.0		
	Nichols Coulee	Sec 17 T22N R27E	8/27/69	" "	2.0		
	C. K. Creek	Sec 8 T22N R27E	8/27/69	" "	1.0		
Lewistown	Carroll Coulee	Sec 21 T21N R26E	8/27/69	grass & timber	1.0		
Miles City	East Hill Coulee	Sec 31 T22N R35E	5/27/69	p. pine & grass	28.0		
	No Name Creek	Sec 10 T19N R30E	8/4/69	western woodland	1.0		
	Gilmore Coulee	Sec 19 T20N R31E	8/4/69	" "	350.0		
	Boatdock	Sec 16 T22N R38E	8/4/69	p. pine & grass	2.0		
						<u>472.5</u>	

IV. RESOURCE MANAGEMENT

A. Grazing

The Secretary of the Interior's memorandum of February 18, 1963 vested in the Bureau of Sport Fisheries and Wildlife the primary responsibility for establishing the policies and approving the programs under which the Bureau of Land Management continues to administer the livestock grazing on this Wildlife Range under the provisions of the Taylor Grazing Act. Just as it has during previous reporting periods, this division of administrative authority continues to present a number of problems which often oppose and sometimes inhibit the development and management of the area in accord with our primary management objectives for wildlife. Some of these problems include the following:

1. The 1952-53 Range Survey of the Wildlife Range established the grazing capacities used by the BLM in issuing their grazing licenses. However, when grazing allotments used by the permittees within the Wildlife Range are contiguous with land outside with no intervening fence, there actually exists an "on-off" situation in which the actual grazing use may be more or less than the capacity and license permits.

2. Because of the large number of livestock (in excess of 60,000 AUMs) grazing within the Wildlife Range, the potential for and occurrence of trespass livestock presents a very difficult problem to handle, particularly when as many as eight different permittees graze cattle within a single allotment under the present "on-off" situation.
3. Under the present appeal system provided under the Taylor Grazing Act, abusive grazing practices have and are continuing during the appeal period.
4. Adjudication procedures required under the Taylor Grazing Act establishing the grazing privileges connected with certain lands has been completed for all lands involved within the Wildlife Range. There remains the question, however, of why or how federally owned lands can serve as a "base" for grazing privileges on other government lands.
5. Under the BLM administration of the livestock grazing within the Wildlife Range, some year-long grazing is permitted. Of a more serious consequence is the early spring grazing (April 1 turn-out date) presently permitted, particularly when the same areas receive the early heavy use each year.
6. The preferential interests of the grazing permittees is continually exerting pressure on the BLM for the construction of additional water developments within the Wildlife Range in order to better distribute cattle and more fully utilize the forage resources. Certainly the construction of these water developments and the initiation of more intensive management systems, strictly from a range management point of view, is justified. However, the necessity of these developments for wildlife needs is not always obvious and, in fact, often unjustified. The result has sometimes led to misunderstanding and controversy between the two agencies.

The 1952-53 joint range survey conducted by the BSF&W and BLM of the entire Wildlife Range provides the basis for the carrying capacities for both livestock and big game animals. By more closely associating and working with the three local BLM district offices and more actively participating in the planning and decisions concerning livestock grazing problems within and adjacent to the Wildlife Range, some of the problems enumerated above may be eliminated. It would appear, however, that some of these problems will always exist under the joint administration of the area because of the different vested interests of the two agencies.

B. Haying

Alfalfa yields in the west unit averaged about 2½ tons per acre. This increase from about two tons per acre in 1968 is largely the result of

an increased production on 370 acres of irrigated alfalfa that produced nearly three tons per acre. Other meadows produced about an average yield or slightly under two tons per acre.

Wild hay produced an average of 0.6 ton per acre on those meadows not flooded. Considerable acreage of alfalfa and wild hay could not be harvested as a result of high water in the Fort Peck Reservoir.

C. Fur Harvest

The only fur bearers harvested within the west unit of the Wildlife Range during the 1968-69 trapping season were beaver. During this trapping period a total of 105 animals were taken. On the basis of beaver cache counts this fall, the following quota for the 1969-70 season was recommended:

<u>Unit</u>	<u>Beaver Quota</u>
I	35
II	30
III	20
Rock Creek Channel	<u>10</u>
Total	95

The reduction in the beaver quota for the 1969-70 season over the previous year is reflected in a decrease in the beaver population in Unit III caused by some flooding from the backwaters of the Fort Peck Reservoir.

Within the east (Fort Peck) unit of the Wildlife Range a total of only 9 beaver were taken. These animals were trapped along Duck Creek below the dam and included 5 adults (3 males and 2 females) and 4 young (3 males and 1 female). In addition to the beaver trapped in this unit, a total of 53 muskrat were taken (45 from the Trout Pond and 8 along Duck Creek).

D. Timber Removal

No growing timber was removed from the west unit. A few permits were issued to individuals to gather downed dead cottonwood logs for firewood to meet their own needs. One permit was also issued within the west unit to cut a maximum of 20 fire-killed trees within the C. K. Burn for use as corral poles.

E. Commercial Fishing

A total of five commercial fishing permits were issued by the Montana Fish and Game Department within the Wildlife Range during 1969. Four of the permittees operated on the Fort Peck Reservoir; two were based

at Fort Peck, one at Nelson Creek primarily fishing the arm of the Big Dry and one based at Devils Creek fishing over a large portion of the lake.

The results of the commercial fishing operation on the Fort Peck Reservoir during 1969 as reported by the Fish and Game Department is shown below:

<u>Species</u>	<u>Pounds Taken</u>
Buffalo	304,000
Catfish	5,000
Carp	70,000
Drum	5,000
White Carp	1,000
Goldeye	<u>40,000</u>
Total	425,000

The fifth commercial fishing permittee restricted his activities to the dredge cuts in the river below the dam. Fishing activity in this area was far less than in previous years resulting in a lower catch.

<u>Species</u>	<u>Pounds Taken</u>
Buffalo	6,800
Carp	500
White Carp	<u>500</u>
Total	7,800

F. Other Uses

Nothing to report.

V. FIELD INVESTIGATION OR APPLIED RESEARCH

A. Progress Report

1. Nichols Coulee Resource Conservation Area

The Nichols Coulee Resource Conservation Area was first established in the fall of 1963 when the Directors of the Bureau of Sport Fisheries and Wildlife and the Bureau of Land Management issued a joint memorandum providing the broad policy outlines. Plans were then formulated for conducting soil surveys, preliminary vegetative surveys, and establishing carrying capacities within this grazing allotment. The construction of the necessary fences and stock reservoirs to implement a four pasture rest rotation grazing system was also begun and early in 1965 this grazing system was initiated. Since then there have been several changes in the plan to accommodate additional stock water and other physical developments. Subsequent changes may complicate and delay the analyses.

In 1965 three of the planned six sets of exclosures were constructed and an inventory and study of the prairie dog towns within the area initiated. During the fall of 1966 the remaining three sets of exclosures were constructed representing three vegetational types. Each of the six sets of exclosure study plots is within Pasture 3 and consists of: (1) big game exclosure, (2) livestock exclosure, and (3) control plot. A summary of the costs involved in the construction of each of these exclosures and the date of their completion is shown in the table on page 22a.

Thirty randomly selected sampling points have been established in each of the sets of exclosure plots and the vegetation is sampled using an "A" frame point contact system developed in cooperation with the Denver Wildlife Research Center. The vegetative measurements are recorded on page reader forms under a template as described by:

Loveless, C.M., G.N. Sarconi, J.W. DeGrazio and C.H. Halvorson, 1966.
A simplified Data-Recording Method, J.Wildl. Mgmt. 30(3): 519-522.

With the completion of the study exclosures in 1966 and the locating of the thirty randomly selected sampling points in each of the study plots, the reading of the vegetative transects was begun in June and July 1967 and has been continued each year to the present. The data recorded on page reader forms is sent each year to the Denver Wildlife Research Center where these data are summarized in the form of a frequency distribution. These data have now been summarized for 1967 and 1968. Any changes, however, in the vegetational composition resulting from livestock grazing are not apparent and will only be evident with considerably more time.

These vegetative transects will be read each year during the first rotation and every fourth year thereafter at the same point during the rotation. It is anticipated that a minimum of two full rotations (8 years) will be required before any changes will be apparent. The statistical analysis of these data will be conducted with the assistance of and in cooperation with the Denver Wildlife Research Center. The experimental design for these studies seems to follow a randomized complete block design and it is assumed that these data will be statistically analyzed in this way.

Four pellet group transects have also been randomly located in each of these study exclosure plots exclusive of the big game exclosure. These transects are roughly 1/36 of an acre and measure 6 feet wide by 200 feet long. In addition to the pellet group transects which will be read each year, there is need for a number of browse transects within each of the exclosures. During the spring of 1970, several Cole browse transects will be established in each of these exclosures to empirically evaluate the condition of the browse in each of the areas and to measure any trends in browse condition under the rest rotation system of grazing management. This will compliment the present "Laycock Angle Order" method of browse measurement.

SUMMARY OF EXPENSES - NICHOLS COULEE R.C.A. ENCLOSURE PLOTS

A. Material:	Agate Ridge (No. 1)		C. K. Burn (No. 2)		C. K. Creek (No. 3)		Spring Coulee (No. 4)		Opuntia Flats (No. 5)		Wiseman (No. 6)		Total
	No.	Cost	No.	Cost	No.	Cost	No.	Cost	No.	Cost	No.	Cost	Expenses
12 ft. wood posts	49	329.77	31	208.63	30	201.90	47	316.31	37	249.01	41	275.93	\$1,581.55
6 ft. wood posts	20	58.00	14	40.60	24	69.60	14	40.60	14	40.60	18	52.20	301.60
12 ft. (4x4) braces	21	46.20	16	35.20	16	35.20	20	44.00	16	35.20	19	41.80	237.60
6 ft. (4x4) braces	16	17.60	12	13.20	16	17.60	12	13.20	12	13.20	14	15.40	90.20
10 ft. steel posts	97	126.10	44	57.20	56	72.80	90	117.00	70	91.00	76	98.80	562.90
6 ft. steel posts	114	94.62	64	53.12	75	62.25	72	59.76	100	83.00	84	69.72	422.47
4 ft. woven wire	4501'	336.67	2490'	186.25	2346'	175.48	3560'	266.29	2800'	209.44	3408'	254.92	1,429.05
Barbed Wire	8692'	57.25	5492'	36.19	4200'	27.67	4600'	30.27	6400'	41.76	5652'	37.24	230.38
#9 Smooth Wire	50#	<u>10.00</u>	50#	<u>10.00</u>	50#	<u>10.00</u>	50#	<u>10.00</u>	50#	<u>10.00</u>	50#	<u>10.00</u>	<u>60.00</u>
Sub-Total		1,076.21		640.39		672.50		897.43		773.21		856.01	\$4,915.75
B. Labor:													
	250 hrs.	\$500.00	262 hrs.	\$500.00	190 hrs.	500.00		612.50		612.50		500.00	\$3,225.00
Sub-Total		500.00		500.00		500.00		612.50		612.50		500.00	\$3,225.00
TOTAL EXPENSES		\$1,576.21		\$1,140.39		\$1,172.50		\$1,509.93		\$1,385.71		\$1,356.01	\$8,140.75
C. Date Completed:		8/27/66		10/29/65		10/1/65		9/2/66		8/2/66		12/7/65	

The management plan for this R.C.A. was not completed and approved until February 1969. This plan was written primarily by the Bureau of Land Management with the assistance and cooperation of the staff of the Charles M. Russell Wildlife Range. Although this plan is well written and clearly outlines the grazing system, capacities, and the number of range improvements necessary, unfortunately, the plan lacks detail in a number of cases. This management plan will be supplemented with a wildlife study plan during the coming year and will outline in detail the various studies in this area, the objectives and analysis procedures.

The management plan calls for and approved the construction of 30 stock reservoirs within the R.C.A. Since the Bureau must approve all improvements within the area administered by the Charles M. Russell Wildlife Range and since the management plan did not detail the location of the stock reservoirs, there has been some difficulty in completing the approved number of structures. In 1967 the Bureau of Land Management submitted a list of 33 proposed reservoir sites of which 12 were approved. In 1969 an additional 7 sites were approved, which should nearly complete the number of stock reservoirs within that portion of the R.C.A. administered by the Wildlife Range.

The studies and inventory of prairie dog towns within the Wildlife Range, and particularly within the R.C.A. will be continued and intensified. General observations throughout the area indicate that existing prairie dog towns are expanding and new towns are being established.

More intensive waterfowl brood counts on each of the reservoirs should also be conducted. These brood counts have been conducted during the past several years but with the lack of specific guidelines and changing personnel, these data are not in all cases comparable. More intensive counts and a careful examination of these stock reservoirs may indicate the preferred locations and types of reservoirs for wildlife use.

We feel confident that with the careful and systematic collection of field data from each of the vegetative, pellet groups and browse transects, we will eventually be able to analyze these data and fulfill the management objectives outlined in the Nichols Coulee Management Plan to:

1. determine the changes in the vegetative composition resulting from the rest rotational grazing system.
2. determine the degree of competition between wildlife and livestock resulting from the rest rotational grazing system.
3. determine the most economic and practical methods of management for the Missouri River Breaks area, considering wildlife and esthetic values.

This year's aerial census data was not recovered due to assignment of the pilot-biologist to the Central Office. Future aerial work will have to be done by local charter rather than a "Service" pilot and for this reason it is anticipated that both quantity and quality of data will not be comparable to that recorded prior to this year.

2. Bird Banding

Banding results were reduced in all categories despite a full level attempt in some cases. For example, only 172 geese were banded from the flock moulting on Fort Peck Reservoir. The goal was 500. Weather and lack of proper aerial coverage was the reason for missing the goal by such a large margin. Again in the case of mourning doves, less than 100 were banded. We had plans for 2,000. This was a case of the birds just not cooperating this year.

CMR was not included in the national duck banding quotas but the State requested that we band 1,000 mallards at Fort Peck after the special mallard season terminated January 5, 1969. Due to a severe winter temperature at the time this effort could not begin until mid-March. Only 318 mallards were marked prior to their spring dispersal.

The following lists the numbers of each species banded in 1969.

Mallards	318
Geese, moulting	172
Geese, captive flock	27
Mourning Doves	<u>91</u>
Total bands used	608

Due to limitation in funds and manpower no mountain plover banding was conducted.

Since this was the last year programmed for banding the moulting geese at Fort Peck, a brief resume is in order to document the results to date.

This project was conceived after aerial census indicated a heretofore unknown population of 1,600 moulting Canada geese on the reservoir in 1966. Few, if any, goslings were noted and there was much speculation about where the birds came from; what percentages reflected the captive flock operation at Slippery Ann; where the birds went; sex, age, and reproductive status, etc. There was also an increased emphasis by the State on the "Hi-line" goose population about that time. Prior to this time it was only known that geese were present on the reservoir and it was assumed that this population represented a collection of post-nesting geese from further up river. The only other known fact was that the concentration was increasing.

The following documents this increase to date:

<u>Year</u>	<u>Moulting Population</u>
1965	1500
1966	1600
1967	1700
1968	2100
1969	? (no equivalent aerial coverage)

It was decided to seek further information by banding the moulters over a three-year period. The first year would be used primarily to develop banding techniques and the next two to provide a representative sample of the population. An arbitrary quota of 500 per year was set in order to provide for sufficient band returns realizing:

1. the number of birds banded the first year would likely be minimal;
2. the flock was increasing at an unknown rate;
3. mortality of banded birds plus replacement of unbanded birds would decrease the percentage of band returns.

The operation was coordinated with the Regional Office (Marshall) and the North Prairie Research Station (Nelson) to provide assistance and guidance. Harvey Miller assisted in techniques of trapping, sexing and aging in 1967. The operation has been conducted in cooperation with the Montana Fish and Game and Corps of Engineers.

The first year (1967) 211 geese were captured and 199 of these were banded. There were 11 retraps but none from Slippery Ann. Thirty-four percent of those banded were also sexed and aged. Seventy-five percent of the females were classified as non-breeders.

In 1968, 541 geese were banded and 48 retraps were recorded, 34 of which were products of our last year's efforts. Four of the retraps were banded as goslings the year before in Colorado. Retrap information indicates a 30% mortality on this goose population.

To date 59 returns have been received from the following areas:

	<u>Band Returns to 1970</u>	
Montana	29	49%
Colorado	16	27%
Wyoming	6	10%
New Mexico	2	4%
Idaho	2	4%
Utah-Neb-Calif-Canada	1 ea.	5%
Total	59	100%

The 27 young geese transported from Slippery Ann to Fort Peck were color marked with a red plastic band on the left leg in addition to the standard metal band. A record of this color coding on progeny of the captive geese is as follows:

Year	No.	Color	Placement	Location
1962	111	Red	Left leg	Slippery Ann
1963	118	Red	Right leg	" "
1964	114	White	Right leg	" "
1965	75	White	Left leg	" "
1966	121	Green	Left leg	" "
1967*	55	Green	Right leg	" "
1968	58	-	-	" "
1969	27	Red	Left leg	Fort Peck

*50 additional birds were unmarked and given to the State of Montana

3. Black-footed Ferret Investigations

This program is divided into three phases:

1. Protection of Ferret Habitat
2. Extension-type Work with other Agencies and the Public
3. Search for Evidence of Ferret Activity

All phases of the program are conducted opportunistically, mostly in conjunction with other projects since there are no funds available to us for this project.

Protection of habitat is provided by perpetuation of prairie dog colonies in the Wildlife Range. In addition to a "no-rodent control" policy, a buffer zone around each dog town prevents any animal control by means potentially dangerous to the ferret (traps, chemically lethal agents, etc.).

An instructional slide program depicting ferrets, their habits, and the evaluation of "signs" indicating evidence of ferret activity was presented to various groups and the Bureau of Land Management State Wildlife Conference.

The search for ferret activity was slowed down because of the reduced level of flying activity and the shortage of funds. The most effective technique for locating evidence of ferret activity over large isolated areas is by aircraft. This technique was developed here on the GMR and was successful in locating suspected ferret "signs" at several widely scattered areas on U. L. Bend, CMR, and elsewhere in central Montana. However, little was accomplished this past year due to the reduced level of flying activity.

Perhaps as a result of the public relations' reports, a ferret sighting was reported and subsequently investigated (Photo 69-1615). This suspect sighting occurred on a dog town off the Wildlife Range in R28E, T24N, Common Corner of Sections 5, 6, 7, and 8. Results of the field investigations were mostly negative except that a large number of covered dog holes was found which is one diagnostic characteristic of the presence of ferrets.

The techniques and abilities are at hand to confirm the presence of the black-footed ferret in its historic range in Montana. What is lacking is the time and money to accomplish the job.

4. Wilderness

The objectives of the wilderness study are to evaluate the entire Wildlife Range for its suitability for inclusion in the National Wilderness Preservation System as required by the Wilderness Act (P. L. 88-577).

The initial phase of the study was spent doing a general reconnaissance of the range to locate and document existing man-made facilities. A number of wilderness study units have been established and will be evaluated independently as to whether or not the criteria for wilderness designation is met.

Continuation of the study is temporarily held up pending completion of the Master Plan, Transportation Plan, and possibly a Public Use Management Plan.

VI. PUBLIC RELATIONS

A. Recreational Users

A car counter was installed on the access road leading to the new captive goose pen and display area at Fort Peck. The captive geese not only served a management function but also in our public relations efforts. During the period May 12 through October 31 a total of 25,176 visits were recorded.

Counters were also used at headquarters and at Slippery Ann Station to record automobile visits. All car count figures are included in the annual summary form.

B. Wildlife Range Visitors (Other than Montana)

March	7	Virginia Murphy, Realty, BSWF, Portland, Oregon
	19	William Lindsey & Tom Smith, Realty, BSWF, Portland, Oregon
April	7	Harold Hardesty, Regional Transport, Tulelake, California
	17	Tom Smith & Richard Munding, Realty, BSWF, Portland, Oregon

- May 1 A. E. Weinrich & E. V. Cofer, M&E, BSWF, Sacramento & Bakersfield, California
- 15 H. H. Josephson, Corps of Engineers, Riverdale, No. Dakota
- 23 Bruce Stollberg, WS, & Dick Eldredge, RBS, Washington, D. C.
- June 16 Joe Mazzone, Wilderness, BSWF, Portland, Oregon
- 19 Tom Smith, Realty, BSWF, Portland, Oregon
- 19 Bob & Craig Ballou, Armandale, Virginia
- 19 James N. Malkowski, Forest Assn., Omaha, Nebraska
- 24 Leon C. Snyder, Los Banos, California
- July 9 Wayne Gueswel, BSWF, Albuquerque, New Mexico
- 29 Travis S. Roberts, Refuges, BSWF, Portland, Oregon
- Aug. 6 Phillip Lehenbauer, WS, Portland, Oregon
Daniel Stiles, Wildlife Enhancement, Washington, D.C.
- Sept. 9 Pete Carter, Sheldon-Hart Mt. Refuge, Lakeview, Oregon
- 16 James Shaw, Realty, BSWF, Portland, Oregon

C. Refuge Participation

1. Talks, Films and Displays

- January Talk on careers to Fergus Key Club--Martin
- February Slide talk, K of C, St. Leo's High School--Martin
Wildlife display at Fort Peck Shopping Center--Gibbons
- March Slide talk "Whooping Crane", Moccasin Club--Sullivan
"The Pond" & "How to Fight Fire in the Kitchen" shown
to Roy 4-H Club--Peck
Talks to High School Biology Classes--Burkholder
Rare and Endangered Program to BLM Wildlife Meeting--Burkholder
- April Talk to Boy Scouts at headquarters--Burkholder
- May "So Little Time" shown to Lewistown Lions Club--Burkholder
- July Talk on Wildlife Range at Ag Lenders Range School--Gibbons

- August Slide talk to 4-H Club at Forest Grove--Martin
- October Slide talk to Lewistown VFW Club--Martin
Slide talk on "Birds and Pesticides"--Krantz
Slide talk to Lewistown Rotary Club--Martin
Talk to Lewistown Chamber of Commerce meeting
about new road restrictions--Martin
- November "So Little Time" shown at two schools--loaned to schools
Talk to Lewistown Kiwanis Club re new road policy--Martin
"So Little Time" showed to VFW Club--Martin
"So Little Time" showed to Chamber of Commerce--Burkholder
Slide talk to Forest Grove 4-H Club--Krantz
Two films shown to Big Muddy Sportsmen's Club, Ft Peck--Gibbons
- December Talk on Texas longhorns to Valley County Development
Council--Gibbons

2. Meetings

- January BLM and Solicitor (Edwards-Henning controversy)--Burkholder
Garfield County Commission re road problems--Gibbons
Valley County Development Commission re range activities--Gibbons
- February Annual Garfield County Woolgrowers Meeting--Gibbons
- March North American Wildlife Conference in Washington, D. C.
--Burkholder
Solicitor and Realty in Billings (Lock case)--Martin & Brownlee
- April BLM Land Classification meeting at Roundup--Gibbons
- May Desert Bighorn Council meeting, Monticello, Utah--Martin
Organizational meeting of Lake Mason Grazing Association
at Roundup--Gibbons
Teaching assignment at Arden Hills--Brownlee
- June Defensive Driver's Training Course at Malta--Davis,
Peterson and van der Hagen
- July Ag Lenders Range School--Gibbons
- August Alaska Science Conference--Burkholder
Training session on Personnel & Human Relations in Portland--Peck
Billings meeting with Solicitor, Lock, Ekedahl, Realty, U. S.
Attorneys--Martin & Foster
- September Wildlife Services Field Conference, Billings--Burkholder

- October Interagency meeting at Jordan--Plenert & Gibbons
 Montana Wildlife Federation meeting at Fort Peck--Gibbons
- November Annual meeting with Wildlife Services re animal control--staff
 Glasgow Chamber of Commerce to explain travel restrictions--Gibbons

3. Tours

- March Field tour of headquarters display for 15 Cub Scouts--Martin
- April Field tour of headquarters display for 27 Cub Scouts--Martin
- May Field tour of headquarters display for 60 students--Burkholder
- July Fergus High biology students (75) taken on tour at Slippery
 Ann--Peck
- August National Geographic photographer given tour of Fort Peck
 area--Gibbons
- September Three pre-season sheep hunt tours of hunters in bighorn area--Peck
- November Field tour of headquarters display for 15 Cub Scouts--Burkholder

4. News Releases and Publications

A. News Releases

- February "Mallards Should Make It"
- March "Migrant Canada Geese Reported at Slippery Ann Station"
- May "Bonnie and Clyde Have a Baby"
- June "Central Montana Important to Ducks"
 "An 18 Year Old Duck"
- July "Krantz Joins Wildlife Range Staff"
 "Manager of NWR Arrives in Lewistown"
 "Name the Buffalo Contest Winner"
- September "New Arrival (antelope) at Wildlife Display Pasture"
- October "Off-the-Road Travel Restrictions"
 "Additional Waterfowl Hunting Available on Wildlife Range"
- November "Mercury Fungicide Banned on Wildlife Range"

B. Publications

Outdoor Life (December) published a popular type article on deer hunting written by the refuge manager.

D. Hunting

The Charles M. Russell National Wildlife Range was open to some form of hunting activity 34% of the year. Upland bird season opened September 13 and duck season ended January 4 for a total of 114 continuous days. This included five big game species, four upland bird species, and migratory waterfowl. In addition, there was a 10 day spring turkey season bring the total hunting days to 124.

This was the first year that the bighorn sheep was legal on the Wildlife Range since the last transplant in 1958. The State issued permits for five 3/4 curl rams and all permits were filled. One interesting aspect not predicted was the short time in which the individual sheep "wised up" to their status as legal game. This was evidenced by the effort expended by the hunters to take outstanding trophies (see Photo 69-1521) and the fact that some of the most outstanding trophies still remain. This season extended from September 15 to December 14.

In the case of the general big game season (deer October 26 - November 30), the most noticeable factor was the lack of hunting pressure on all but that portion of the Wildlife Range in State Management Unit 70, Garfield County. Here there were 700 \$35 non-resident licenses sold and this accounts for the activity there. The drastic reduction in deer hunting activity elsewhere is a culmination of several years of poor hunter success; a fact that we have unconvincingly argued with the State. The primary reason for conducting the hunter survey specific to the Wildlife Range the past couple seasons was to verify this fact which is now obvious to all. Actually there was more hunting pressure during the archery season (deer and elk September 21 - October 19) than during the rifle deer season. Ironically there were more deer this year than last and those few hunters using the Wildlife Range did well. The State reports 48 hunters took 30 deer this year compared to a nine-year average of 103 hunters:51 deer.

Participation in the archery season again increased. The big drawing card in this case was the elk which could be hunted by anyone with a bow license. This was not just a weekend effort either since most of the archers arranged their schedules to hunt for a week or two and some for the whole season. The elk kill by bow and arrow increased to an estimated 25 animals.

There were 310 elk permits issued for rifle hunters (December 7-28); an increase of 40 from last year. Most of this increase was in Unit 62, the relatively remote area of Burnt Lodge. Harvest information is not presently available.

No permits were issued for the south side of the Missouri River (Unit 410) and, hopefully the few elk on that side will remain there to become established and a larger population of huntable animals will result. In the past the State issued 40 permits for about 20 elk and those that were not killed moved to the north side where the season was not opened till later in the year. One would think that the animals would move back reversing the process when the later season opened but such is not the case. The Missouri's flowing ice is apparently a barrier sufficient to prevent this return trip.

Hunting for sage grouse, sharp-tailed grouse, and gray partridge was judged excellent. Sharptails seemed slightly less numerous than last year but serious hunters could get their limit of four birds on the north side of the river or three on the south side without too much strain on themselves or their pocketbooks. The following data on page 33 shows opening day harvest trends at Fort Peck.

Turkey hunting was a different story. Only 4 birds (1 a hen) were known taken during the ten day spring gobbler season and 13 birds were killed during the eight day fall hunt. Hunters outnumbered the turkeys killed 10 to 1.

Due to the mild weather conditions duck hunting was only fair during the regular waterfowl season. On the public hunting grounds at Fort Peck an estimated 158 hunters killed 334 birds. For the first time since the Wildlife Range was established the entire Fort Peck Reservoir was open to waterfowl hunting. Hunting pressure on the reservoir was light since birds use the area sporadically and hunting opportunities are limited.

Duck hunting during the late "special" mallard season was excellent even though fewer birds were taken this year as compared with last. An estimated 536 hunters bagged 1,043 ducks compared with 600 hunters taking 1,560 mallards in 1968. Milder weather conditions no doubt attributed to this and also discouraged many of the mallards from leaving the Fort Peck area. At the close of the season an estimated 11,500 mallards remained at Fort Peck compared with 6,000 at the same time a year ago. Prior to the season both years, 15,000 mallards were estimated at Fort Peck.

The Wildlife Range supported a lot of goose hunting, mostly off the Wildlife Range near Winnett, Grass Range, Winifred, and Sun Prairie. Occasional hunters with decoys were successful on the Range when the birds could be lured from the closed area.

Table I. Prairie Grouse Opening Day Hunter Harvest Data, Fort Peck Dam, 1967, 1968, and 1969.

	<u>1967</u>	<u>1968</u>	<u>1969</u> ¹	<u>15-yr. Average</u>
No. of Hunters	85	99	131	129
Hours hunted	340	437	556	512
Total birds	119	182	289	203
Birds/hunter	1.4	1.8	2.2	1.6
Hours per bird	2.9	2.4	1.9	2.5
Sharp-tailed Grouse				
No. birds	90	160	229	141
Birds/hunter	1.1	1.6	1.7	1.1
No. adults	19	66	74	48
No. juveniles	71	87	129	85
Juv./100 adults	376	132	174	177
Sage Grouse				
No. birds	27	16	50	44
Birds/hunter	0.3	0.2	0.4	0.3
No. adult females	6	4	3	6
No. juveniles	20	2	33	40
Juv./100 adult females	--	--	1100	717
Hungarian Partridge				
No. birds	2	6	10	27
No. adults	1	4	0	7
No. juveniles	1	2	3	18
Juv./100 adults	--	--	--	257

1. Station operated on Saturday opening and Sunday.

A factor that will influence future hunting is the plan to enforce existing refuge regulations regarding off-the-road travel. Last year this campaign was begun by restricting tracked vehicles and those with single-wheel drive to designated roads and trails. This year this restriction was extended to include all vehicles in a portion of Garfield County where the local residents were favorable to the plan. Another phase of this program is on the public relations front. Various news releases were written and appearances at public meetings were held to explain the purpose of the program and answer criticism. We estimate that presently over 1,000 miles of roads and trails will be designated. This, of course, is an ambitious program and one requiring a considerable effort to meet the Bureau's responsibilities. Progress of the program will depend on future financing and manpower availability.

E. Violations

No apprehensions were made by Bureau personnel. Only one of the three state districts involved on the Wildlife Range responded to our requests for information and this one listed the following in Area 410:

- November 5 Failure to obtain landowner's permission to hunt; apprehended on CMR.
- November 5 Improperly tagged deer.
- November 12 Untagged deer and possession of illegal game (bird).

F. Safety

The Safety Plan for the CMR was revised and approved in November 1968. This updated and revised Safety Plan was implemented during 1969 and undoubtedly aided in creating an awareness and familiarity with our safety program.

Safety meetings were held throughout the year in conjunction with our regularly scheduled monthly staff meetings. Attendance at these meetings was often restricted because of the extensive travel involved, other field assignments, and special details away from the area. In addition to the regularly scheduled meetings, a number of informal safety discussions were held in the field emphasizing the various safety precautions required for certain types of work.

A seemingly inconsequential bump on the shinbone of one of our temporary employees during normal routine work duties subsequently resulted in a very painful and swollen leg several days later which required some medical attention. The incident emphasized the need and wisdom in completing all of the necessary accident forms despite the seemingly

inconsequential nature of an accident. Fortunately, despite a very painful leg, the employee suffered no more than a bruise and no lost time accrued as a result of the accident. This station has now accumulated a safety record of 531 days without a lost time accident as of December 31, 1969.

VII. OTHER ITEMS

A. Items of Interest

A most unusual wildlife sighting was made on September 19 by Wildlife Range personnel near U. L. Bend. A small bull moose was observed just east of Beauchamp Creek. He was subsequently reported off the Wildlife Range near Sun Prairie and eventually made his way into the Fort Belknap Indian Reservation where his wanderings were abruptly terminated. He was 250 miles from the nearest known moose range--a goodly distance even for a long-legged moose!

Assistant Manager Mike Brownlee was assigned to the Interior Departmental Management Training Program in August. Mike has had many interesting assignments during this program in Washington, D. C. These included a job of liaison between the Department and Congress and an upcoming environmental study to be completed in June 1970.

A spotlight of interest is focused on the last free flowing stretch of the mighty Missouri River. (See Photo 69-967). Various plans are "in the mill" to develop this primitive area as a national park, a wilderness or wild and scenic river, a recreational waterway, a refuge, or hydroelectric project, or combinations of some or all of these. Regardless of what is decided the country adjoining the Charles M. Russell National Wildlife Range, 160 miles up river to Fort Benton, will no longer have the advantage of obscurity. It has been "discovered" and it will be "administered and developed", hopefully, in the national interest.

Pilot-biologist Burkholder was assigned to the Central Office in the Branch of Resources for a six week period during January, February and March; and then to Alaska for a similar period in late summer to assist with an evaluation of the proposed Trans-Alaska Pipeline System. His absence seriously curtailed the wildlife census and monitoring work that would ordinarily have been accomplished.

On April 5, 1969, a Canada goose in the display pasture at Lewistown headquarters flew into a power line, was electrocuted and fell to the ground inside the pasture. The male bison having witnessed the incident "attacked" the dead bird with its horns, throwing it in the air repeatedly. The bird, a gander, was banded at Slippery Ann July 8, 1966 and weighed 12 pounds 6 ounces.

For the first time we got involved this year in the Work Study Program. Under this federal aid to students program, college students employed by a school can work for other agencies which pay a small fraction of the wage. The University of Montana hired Gerald Ulrich, one of their students, as a Groundskeeper (one of 21 categories) to work at CMR headquarters at a wage of \$2.50 per hour. The cost to the Bureau amounted to 70¢ per hour and the University, as the hiring agency with federal assistance paid the remainder. This is a good source of cheap labor for any project leader.

We prohibited the use of mercury-bearing fungicides on the CMR after the State determined that upland birds were contaminated. We are now advised that USDA is planning to cancel all federal registrations on mercurial fungicides before the next planting season.

Four staff members received length-of-service awards during the year. Maintenance man Zupec, John Kombol, and Emery received 10 year pins. Linda Wicks, Refuge Clerk, and Harold (Casey Jones), Maintenance Foreman, received 20 year pins.

Joel Peterson was employed as a Wildlife Management Biologist May 5 and worked through July 11, when he resigned to accept a position with the Montana Fish and Game Department. Joel was a good "hand" and we were sorry to lose his services. His wife, Sheila, in addition to being a most pleasant person to know is also a graduate botanist and as such was a real help to both Joel and our operation.

The CMR staff boasts several archers of varying degrees of proficiency but there is one whose claim to fame will go unchallenged. Floyd Emery, maintenance man at Slippery Ann, killed a bull elk with a well-executed 50 yard shot.

B. Photographs

A selection of photographs is included following the NR forms.

C. Credits

Bob Burkholder was assigned the responsibility of producing the report. This is no little job with five people writing it and two typists involved in the annual chore. Betty Minnich did the rough draft and Linda Wicks the final copy. Messrs. Peck, Gibbons, Krantz, Burkholder, and Martin divided up the writing and editing and we got it out on schedule.

SIGNATURE PAGE

Submitted by:

Frank Martin
(Signature)

Refuge Manager
(Title)

Date: Jan 22, 1970

Approved, Regional Office:

Date: 1/30/70

Carroll J. Langford
(Signature)

Asst. Regional
Refuge Supervisor
(Title)



William C. Krantz (Wildlife Biologist, GS-11) transferred to CMR from the Patuxent Research Center on June 1, 1969. He filled the vacancy created by Marvin Kaschke's transfer to the Bison Range. Photo 69-1084. F. R. Martin



John R. Foster (Refuge Manager, GS-11) is the first manager of the U.L. Bend National Wildlife Refuge with temporary headquarters at Lewistown. He transferred from the Mingo Job Corps Center on June 29, 1969. Photo 69-1090. F. R. Martin

Note: All other permanent personnel as listed in this report are still employed and are pictured in the 1968 NR.



One of the five bighorn sheep trophies taken on the Wildlife Range in 1969. This fine trophy was taken by Jack Lyon of Missoula. Some of the biggest and best trophies, however, still remain. Photo 69-1521, August 1969. W. C. Krantz



New buffalo calf arrived in May at Lewistown wildlife enclosure.
Photo 69-1012, May 1969. F. R. Martin



Male antelope delivered to Lewistown headquarters from Malheur by Pete Carter (Sheldon-Hart Mt.) during an equipment move.
Photo 69-1440, Sept. 1969. F. R. Martin



Glen Childers, Brusett rancher, poses with Bob Burkholder and old mounted sheep head (circa 1915) which he hopes to have renewed. It may be the Audubon's sheep--now extinct. Photo 69-1564, Dec. 1969. F. R. Martin



Many school groups visited the wildlife enclosure at the Lewistown headquarters during 1969. Photo 69-832, 1969. F. R. Martin



Erecting new goose nesting platforms and refurbishing the old ones is an annual late winter job. Photo 69-298, Jan. 1969. Chas. Peck



Bob Burkholder spent two nights in this black-footed ferret finders camp near north boundary of wildlife range after rumor was heard that a ferret was seen here. Photo 69-1615, Oct. 1969. B. Burkholder



In February Manager Gibbons erected a display at the new Fort Peck shopping center. Photo 69-270, Feb. 1969. Chas. Gibbons



The three longhorns were brought out of hiding in the remote bighorn pasture and moved to an enclosure at Fort Peck. Photo 69-1524, Nov. 1969. Chas. Gibbons

SATELLITE AREA NARRATIVE
Hailstone, Halfbreed, Mason, War Horse,
Wild Horse, and Yellow Water National Wildlife Refuges

NARRATIVE REPORT
January - December 1969

I. GENERAL

A. Weather Conditions

Temperatures in 1969 were comparable with past years. The highest temperature at Billings was 100° and at Roundup 104°, with the lowest temperature being -23° and -41° respectively. Moisture received in 1969 was down from 1967 and 1968 but still above the ten-year average. This moisture is reflected in the water levels on the various refuges. All areas except Wild Horse maintained good water levels throughout the period.

Weather statistics listed below were obtained from the Billings Airport Station and Roundup Station. The Roundup weather applies to Lake Mason Refuge only.

	1969		Billings Weather Station Precipitation			Snowfall		
	Max.	Min.	1967	1968	1969	1967	1968	1969
Jan	47	-23	.36	1.22	.99	6.1	13.2	12.2
Feb	44	4	.39	.58	.17	3.7	1.6	2.0
Mar	71	-3	1.55	.66	.57	16.2	6.8	5.5
Apr	80	26	1.63	1.50	1.48	11.4	12.3	3.0
May	93	32	1.84	1.79	.78	7.7	T	T
Jun	94	32	5.18	3.86	5.74	-	-	T
Jly	97	47	.37	.25	1.69	-	-	-
Aug	100	46	.54	2.35	.42	-	-	-
Sep	95	38	.66	1.38	.36	-	T	-
Oct	73	18	1.04	.51	1.56	-	T	10.2
Nov	72	13	.50	1.71	.66	5.1	4.6	5.0
Dec	56	5	.79	.81	.31	9.0	8.6	2.3
Totals			14.85	16.62	14.73	59.2	47.1	40.20

	Roundup Weather Station			
	1969		Precipitation	
	Max.	Min.	1968	1969
January	51	-41	.62	.96
February	47	- 3	.11	.09
March	68	-10	.05	.06
April	82	27	.89	.87
May	95	26	2.75	.92
June	96	31	6.05	4.51
July	98	46	.89	1.79
August	104	39	2.44	.42
September	97	34	1.00	.38
October	76	17	.62	.95
November	74	10	.92	.12
December	69	5	.22	.11
Totals			16.56	11.18

B. Habitat Conditions

1. Water

Again this year excellent water levels were maintained at Halfbreed, Hailstone, Lake Mason, War Horse, and Yellow Water. Wild Horse dried up in May which is the usual condition. Water ran over the control structure at Halfbreed this year. At Hailstone water reached within two or three feet of the spillway. Water came within one foot spilling at Lake Mason, but was several feet below this high point by fall. Good run-off commenced in 1967 at Lake Mason and continued throughout 1968 and the spring of 1969. Moisture received this year was well below that of 1968 thus the lake level receded during the summer and fall months.

2. Food and Cover

Aquatic vegetation in the water areas was adequate for waterfowl and they remained on all areas until "freezeup", which occurs the second week of December.

Considerable acreage of cereal grain is raised in the proximity of each area. Waterfowl utilize this food source especially during the fall migration.

Grass production was good but as usual was heavily grazed around Lake Mason, War Horse, Yellow Water, and Wild Horse. Nesting cover could be increased at this area with later livestock turn-in dates.

II. WILDLIFE

A. Migrating Birds

The six satellite areas were ice-free by the end of March and did not freeze over again until the second week of December. The estimated peak spring migration totaled about 11,000 ducks for all areas compared with 17,000 in 1968. The peak fall migration for the six satellites was estimated at 35,000 birds compared with 46,000 in 1968. About 1,625 Canada geese were using these areas during the fall period prior to "freezeup".

Duck production for the satellite areas totaled about 1,500 for 1969. Production was estimated on the basis of pair counts made June 2 and follow-up brood counts on July 10 and 18. On War Horse Lake baldpates and gadwalls accounted for most of the production while pintails, shovelers, and mallards predominate at Halfbreed and Lake Mason.

B. Upland Game Birds

A slight increase in upland birds, especially sage grouse, was noticed at Halfbreed and Lake Mason. No change has been noted in the total estimated number of 60 pheasants on Halfbreed, Hailstone, and Lake Mason.

Overgrazing by livestock at several of the areas no doubt affects production of upland birds through loss of cover. Upland birds found on the six areas are ring-necked pheasant, sage grouse, gray partridge, and sharp-tailed grouse. Sharp-tailed grouse are reported only at Lake Mason but may be present in limited numbers at War Horse, Wild Horse and possibly Yellow Water.

C. Big Game Animals

Mule deer and antelope are the only big game species found on the satellite areas. Antelope are especially noticeable at Lake Mason and Halfbreed and probably total 150 animals during the period of greatest use. Mule deer and antelope are not restricted in their movements and use the refuges intermittently.

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

Muskrat activity is increasing on most of the areas since water has been present the past few years. The population is not yet sufficient, however, to warrant harvesting.

Coyote and fox populations continue to increase in central Montana. Land-owners and cooperators in the vicinity of the satellite refuges report increases in the number of predators but point out that no serious problems exist. Predation on waterfowl is not excessive and no corrective measures are contemplated. Skunks are frequently seen and are probably the most serious threat to the waterfowl nesting effort.

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

As in the past, golden eagles were again seen at Yellow Water, Hailstone, Halfbreed, and War Horse during the year. Migrant bald eagles were also observed at Lake Mason and War Horse the first week of November. Eagles of both species no doubt frequent all areas at some time during the year. Marsh hawks, red-tailed hawks, Swainson's hawks, and sparrow hawks were observed near or on each area but no production from these species is known to occur. Magpies can be observed most any time of the year but crows are summer residents only.

F. Other Birds

An annual build-up of long-billed curlews at Halfbreed Lake Refuge was reported although numbers appeared less than last year with about 175 birds compared with 250 in 1968.

About 500 eared grebe nests were counted in July on the southern portion of Lake Mason. In addition to the nests at Lake Mason, eared grebes and pied-billed grebes also nest on Talhbett Lake, Halfbreed Lake and Hailstone Lake.

G. Fish

Yellow Water Reservoir and War Horse Lake furnish the sport fishing on the satellite refuges. The quality of bass fishing at War Horse decreased with a decrease in fish size. At Yellow Water, however, good rainbow fishing was maintained and fishing for bullheads improved largely due to a commercial fishery on the latter, which resulted in relieving a overpopulated stunted fish population. Surviving bullheads reached worthwhile size and catches were made in the one pound class.

H. Reptiles

Nothing to report.

I. Disease

Nothing to report.

III. REFUGE DEVELOPMENT AND MAINTENANCE

A. Physical Development

The only physical development accomplished on the satellite refuges during the year was the installation of two 3-foot culverts below the spillway at Halfbreed Lake. Adjacent landowners assisted in this project. Although this roadway below the spillway was constructed in 1968, the culverts used in the project were inadequate for the volume of water.

IV. RESOURCE MANAGEMENT

A. Grazing

The Bureau exercises little control of grazing on the satellite areas primarily due to the checkerboard pattern of land jurisdiction. At Halfbreed winter grazing and a winter feeding program make up the primary use pattern. The grass growth and nesting cover is excellent as a result. Since Hailstone is fenced from livestock grazing because of "bad water", the adjacent vegetation is as good as the site will allow. At Lake Mason the shoreline is heavily used and grossly overgrazed. The same conditions exist at Yellow Water and War Horse where private lands along the lake shore preclude effective management for wildlife purposes. Presently, the only Bureau control at War Horse, Wild Horse, and Yellow Water are several scattered tracts of Bankhead-Jones land on which the Bureau of Land Management administers livestock grazing. Overgrazing is evident on each of these areas.

VI. PUBLIC RELATIONS

Yellow Water and War Horse are both popular sport fishing reservoirs. Good catches have been reported and public use continues to increase. Lake Mason is the only satellite refuge on which public hunting is permitted. Waterfowl hunting during the season was severely curtailed as the landowners closed much of the area to trespassers. No violations were reported from any of the areas during the year.

VII. ITEMS OF INTEREST

The Daugherty Ranch located near the Lake Mason National Wildlife Refuge was sold to the Lake Mason Grazing Association. Approximately 2,000 acres of Bankhead-Jones land administered by the Bureau of Sport Fisheries and Wildlife is involved. Grazing patterns will continue much as in the past until boundaries are firmed up and the refuge fenced.

The Division of Realty has commenced work at both Lake Mason and War Horse with the intent of rounding out the boundaries at both of these areas. Although some land will have to be purchased at Lake Mason, most of the required acreage can be obtained through trade which will consolidate Bureau holdings.

This Satellite Area Narrative was prepared by Refuge Manager Charles Gibbons.