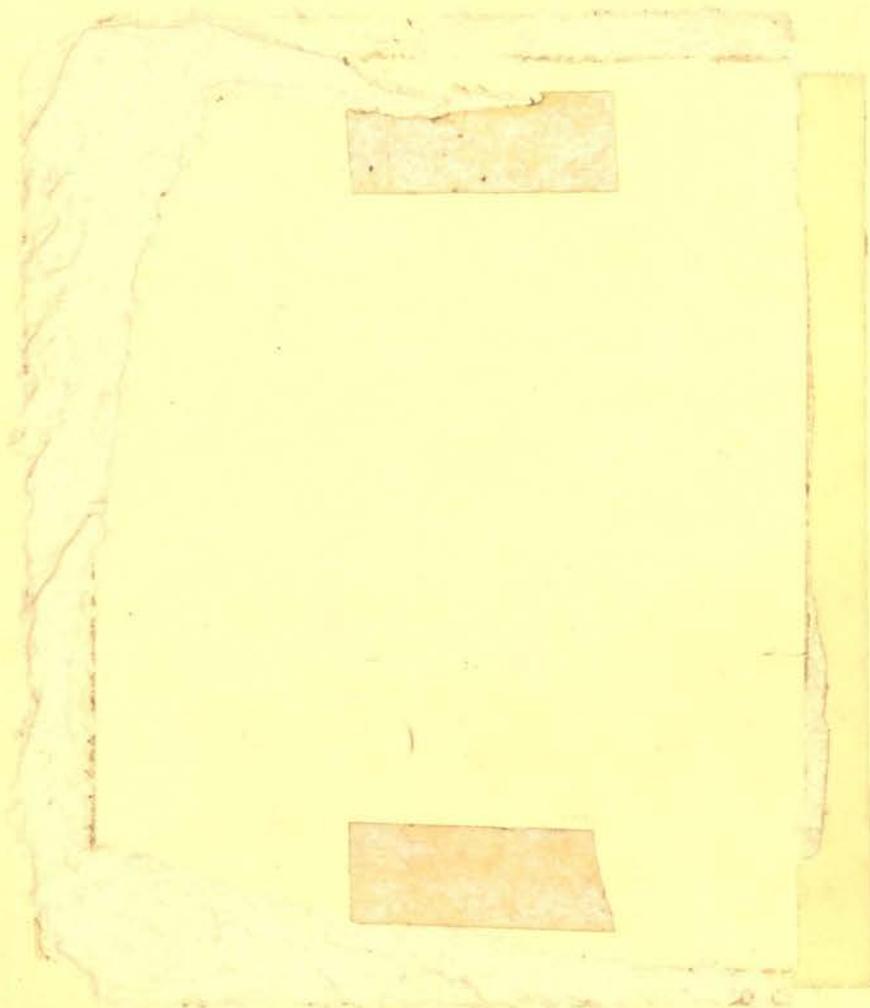


NARRATIVE REPORT

CHARLES M. RUSSELL NATIONAL WILDLIFE RANGE
LEWISTOWN, MONTANA

January - December 1970



Department of the Interior
Fish and Wildlife Service
Bureau of Sport Fisheries and Wildlife

NARRATIVE REPORT 1970

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

and

Hailstone, Halfbreed, Mason,
Yellow Water, War Horse & Wild Horse

Cover Photo
Pete, the male antelope at
Lewistown Wildlife Pasture.
Photo 70-671, FRM

CHARLES M. RUSSELL NATIONAL WILDLIFE RANGE
Narrative Report

January - December 1970

PERSONNEL

General Schedule

Frank R. Martin	Refuge Manager-in-Charge
Philip B. Aus	Refuge Manager (Lewistown) EOD 12/27
Michael B. Brownlee	Refuge Manager (Lewistown) Resigned 12/31
Bob L. Burkholder	Wildlife Pilot-Biologist
John R. Foster	Refuge Manager (U.L.Bend) Trans. 3/16
Charles W. Gibbons	Refuge Manager (Fort Peck)
William C. Krantz	Wildlife Biologist
Rolland J. Krieger	Refuge Manager (Slippery Ann) EOD 11/15
Betty L. Minnich	Clerk-Typist (part-time) Resigned 9/6
Charles S. Peck	Refuge Manager (Slippery Ann) Trans. 9/20
Marvin L. Plenert	Wildlife Biologist (Wilderness-R.O.)
Linda H. Wicks	Refuge Clerk

Unclassified

Floyd L. Emery	Maintenanceman (WAE)
Frank V. French	Maintenanceman (WAE) Trans. 4/12
Dean A. Gilbert	Shop Foreman (Resigned 7/3)
Harold H. Jones	Maintenance Foreman
Lynes D. Kilby	Maintenanceman (WAE)
John Kombol	Maintenanceman (WAE)
Joseph J. Kombol	Maintenanceman (WAE)
Samuel A. Sage	Maintenanceman
Gerald A. Sullivan	Mechanic HD
Joe F. Zupec	Maintenanceman (WAE)

Temporary

Dean Bolstad	Wildlife Conservation Aide (Work Study)
Walter W. Grovom	Maintenanceman
Joe A. Morton	Laborer
Donald H. Newton	Laborer (Youth Federal Summer Employment Program)

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CHARLES M. RUSSELL NATIONAL WILDLIFE RANGE
Lewistown, Montana

NARRATIVE REPORT
January - December 1970

I. GENERAL

A. Weather Conditions

Weather statistics are typified by diversity between the headquarters at Lewistown (elevation 4,083 feet), Slippery Ann (2,260 feet), and Fort Peck (120 miles east and 3° less longitude). It is even difficult to reconcile weather records of Slippery Ann with those of the Highway Department only five miles away, due to local storm variances. Despite this, personnel are in agreement that it was a tough, cold, and very long winter. Along in late January, with hardly enough snow for a white Christmas, there were those who invitingly thought "we got it made now" or "it doesn't matter what happens since there's so little winter left"--not realizing that winter conditions would continue till June.

The Canada geese were apparently fooled as well--they came earlier than usual and spent their time trying to hatch eggs that were predestined to failure. There were compensations, however.

The total precipitation of 14.78 inches assured a excellent growing year for the wildlife habitat on the west end of the one million acre area while the 11.79 inches was about normal for the east end.

Slippery Ann Weather Record

	Snow- fall	Precipitation			Temperature-1970	
		1970	1969	1968	Max.	Min.
January	9"	.36	.87	.22	50	-31
February	8"	.19	.06	.17	60	-5
March	13"	.49	.13	.14	61	-16
April	4"	2.45	1.25	.52	81	8
May	T	2.87	1.68	1.47	87	28
June	-	2.39	2.57	3.36	99	44
July	-	2.57	2.04	1.06	103	42
August	-	1.00	.11	2.23	105	41
September	-	.95	.44	1.24	91	19
October	T	.97	1.12	.29	91	16
November	2"	.21	-	-	64	-12
December	9"	.33	.11	.46	46	-29
Totals	45"	14.78"	10.38"	11.16"	105°F Hi	-31° Lo

The 45 inch snowfall almost duplicated the total of the two previous years (21 inches in 1968 and 28 inches in 1969) but it should be remembered that interpretation of snowfall figures on a calendar year basis can be misleading because of the split season.

Fort Peck Weather Record					
	Precipitation			Temperature-1970	
	1970	1969	1968	Max.	Min.
January	.24	1.03	.19	46	-33
February	.02	.06	.08	42	-13
March	.18	.45	.09	52	-5
April	2.57	3.12	.82	75	20
May	1.38	1.01	.60	81	34
June	2.36	2.93	2.38	96	46
July	.56	3.65	1.85	102	49
August	.29	.05	3.58	101	44
September	1.69	.11	.69	94	28
October	2.03	1.51	.13	80	24
November	.33	T	.13	57	-7
December	.13	.24	.30	47	-19
Totals	11.79"	14.16"	10.84"	102°F Hi	-33°F Lo

B. Habitat Conditions

1. Water

The Fort Peck Reservoir froze over on January 9 and was 100% ice-free by April 30. The highest water level attained in 1970 was 2247.3 on July 9. This compares with a high of 2246.8 in 1969; 2245.7 in 1967; 2245.9 in 1965; and 2244.8 in 1948. The 1970 high mark is the greatest elevation ever attained by the Fort Peck Reservoir.

FORT PECK RESERVOIR - POOL LEVEL

	1968	1969	1970
Jan 1	2238.0	2238.7	2239.5
Feb 1	2237.0	2237.5	2238.1
Mar 1	2236.4	2236.3	2236.8
Apr 1	2237.1	2238.4	2237.5
May 1	2238.5	2240.9	2238.0
Jun 1	2240.4	2242.3	2243.6
Jul 1	2244.4	2244.1	2247.0
Aug 1	2244.3	2246.4	2246.7
Sep 1	2243.7	2244.7	2245.1
Oct 1	2242.5	2243.3	2243.6
Nov 1	2241.2	2241.9	2242.0
Dec 1	2240.1	2240.7	2240.4

2. Food and Cover

This year was classified by natives of the area as "another good grass year"--and indeed it was. The above average precipitation coming in late spring and continuing through the summer kept the rangeland green, long after it is normally cured and brown. Browse transects indicate a slight upward trend also. Food and cover generally are both adequate to meet anticipated wildlife needs.

C. Aircraft Operations

A total of 50.8 hours was flown in support of the CMR operation in 1970 at a cost of \$1355.60. Of these totals, 20 hours @ \$500 were flown in Bureau aircraft (Cessna N-710) and the remainder 30.8 hours @ \$855.60 was charter. While this represents only 11% of the time flown in previous years, the cost equals 19% of the previous total.

II. WILDLIFE

A. Migratory Birds

1. Waterfowl

Except for Canada geese, waterfowl production was normal. A series of late spring storms was believed responsible for a decline in goose production. Not only were fewer broods seen but brood size was reduced from an average of 4.5 to 3.1 on the prime production area above the Fort Peck Reservoir. According to state sources, this reduction was general throughout the north central part of Montana as well.

Moving the captive flock 120 miles to Fort Peck was probably another important factor in the reduced number of broods. Hopefully, with a more normal year weatherwise, we can measure the captive flock influence and, conceivably, it may be necessary to maintain captive flocks in both areas in order to not lose the progress made in restoring a native population of Canada geese to the middle Missouri River above the Fort Peck Reservoir.

Winter feeding of mallards at Fort Peck commenced January 13 when the weight average of males reached 2 lb. 8 oz. Feeding operations ceased on March 5 when weather conditions eased, allowing the birds to find suitable food in farm fields. The wintering populations averaged 15,000 birds and a total of 3400 bushels of barley were fed. Following are listed mallard weight averages taken during the 1970 winter period:

	<u>Males</u>	<u>Females</u>
January 7	2 lb. 8 oz.	2 lb. 4 oz.
January 20	2 lb. 13 oz.	2 lb. 7 oz.
January 23	2 lb. 9 oz.	2 lb. 6 oz.
February 10	2 lb. 11 oz.	2 lb. 7 oz.
March 2	2 lb. 11 oz.	2 lb. 8 oz.

2. Captive Geese

In 1970, thirteen pair of geese nested in the enclosure at Fort Peck. Three nests were "lost" in a snowstorm in April; from those left, 18 goslings were reared. Four of these 18 were pinioned and the remainder wing-clipped. Some of the gosling loss could have been predation from great-horned owls; however, the low production was caused primarily by eggs not hatching. The entire captive flock was located at Slippery Ann for many years and moved to Fort Peck in 1969. In 1970 the pairs were adjusting to their environment and considerable strife resulted as breeders as well as non-breeders intruded on territories. For example, two pair attempted to use the same nest. They took turns laying eggs, but the final result was that neither pair brooded the eggs.

During the winter and early spring, a local sportsmen's club at Fort Peck with Bureau help set up twelve nesting platforms in trees below Fort Peck Dam. None were used this season by the geese but plans are to continue with additional nesting sites as the captive flock enlarges.

The use of nesting platforms on the west end of CMR remained high. Fifty-five of 85 structures were used as nest sites by geese and another three by great-horned owls.

While goose production was poor, migrant populations exceeded those of past years. Numbers fluctuated around 2,500 during October and mid-November when winter storms and early freezeup moved the birds further south.

3. Other Water Birds

No change was noted from previous years in the abundance of gulls, terns, cormorants, pelicans, or other colonial nesting birds. Little brown cranes again "overheaded" the Wildlife Range and were evident only by their calls as they passed by "on high".

4. Shore Birds

Populations of this group of birds appeared normal. Mountain plover and killdeer are dominant species on the prairie dog towns while the upland plover inhabits grassy benches that receive either light live-stock use or none at all.

5. Doves

The mourning dove population recovered from the estimated 30% decline of last year. An attempt to implement a cooperative study with the Montana State University failed because of funding problems. We need a study to fill the gaps in our knowledge of the ecology of this ground-nesting bird as it relates to livestock and big game management.

B. Upland Game Birds

Populations of sharptails and sage grouse remained high while gray partridge declined and pheasants began a recovery from the low level of the past several years.

The wild turkey populations continued to barely sustain itself in the face of a spring gobbler season and a regular fall season. Hunter success was poor with hunters outnumbering the turkeys 10 to 1. An inquiry from the State to again trap and transplant from the area was discouraged because of the few birds remaining. It is estimated that the entire population west of U. L. Bend is presently less than 20 birds.

C. Big Game Animals

1. Mule Deer

Populations continued to increase at a slow rate from the low of 1968. The doe:fawn ratio of 100:125 compared favorably with last year's 100:130, which improved from the 100:70 recorded in 1968.

Absence of snow cover and generally mild temperatures were believed to be responsible for poor hunter success rather than the lack of deer. The peak of rutting activity was delayed until a very few days before the close of hunting season on November 29, thus the hunter had little opportunity for those animals made unwary through pre-occupation. The 19% hunter success was significantly lower than the 14-year average of 39%. (Table I)

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, methods other than more liberal seasons and limits would have to be explored since hunting has already reached the point of diminishing returns. One salvation of the white-tailed deer in this area seems to be their adaptability to other than what is considered

Table I. Deer Hunter Success Data, Willow Creek Station -- 1960-1970.

Date	No. Hunters	No. Successful	Percent Success	Composition of Kill					
				Bucks		Does		Fawns	
				No.	%	No.	%	No.	%
1960 Oct. 2	602	251	42	110	44	85	34	56	22
1961 Oct. 15	435	151	35	63	42	67	44	21	14
1962 Oct. 21	222	66	29	31	47	23	35	12	18
1963 Oct. 20	247	80	32	37	46	28	35	15	19
1964 Oct. 18	228	76	33	38	50	22	29	16	27
1965 Oct. 24	300	63	21	31	49	31	49	10	16
1966 Oct. 23	180	50	28	25	50	15	30	10	20
1967 Oct. 29	210	62	30	23	38	21	35	16	27
1968 Oct. 27	112	43	38	24	56	13	30	6	14
1969 Oct. 26	143	46	32	29	63	13	28	4	9
1970 Oct. 18	297	55	19	33	60	16	29	6	11
14-yr. Average	302	117	39	53	46	44	38	20	16

Type of Season: 1960: Oct. 2-Nov. 20 -- Either sex, one deer, either species.
 1961: Oct. 15-Nov. 19 -- Either sex, one deer, either species.
 1962: Oct. 21-Nov. 25 -- Either sex, one deer, either species.
 1963: Oct. 20-Nov. 24 -- Either sex, one deer, either species.
 1964: Oct. 18-Nov. 22 -- Either sex, one deer, either species.
 1965: Oct. 24-Nov. 28 -- Either sex, two deer, tag "B" whitetail only.
 1966: Oct. 23-Nov. 27 -- Either sex, two deer, tag "B" whitetail only.
 1967: Oct. 29-Nov. 12 -- Either sex, two deer, tag "B" whitetail only.
 Nov. 13-Nov. 26 -- Either sex, two deer, tag "B" whitetail only.
 1968: Oct. 27-Nov. 26 -- Either sex, two deer, tag "B" whitetail only.
 1969: Oct. 26-Nov. 30 -- Either sex, two deer, tag "B" whitetail only.
 1970: Oct. 18-Nov. 29 -- Either sex, two deer, tag "B" whitetail only

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.

One item of interest concerning this species. A very large buck taken last year in the Missouri River Breaks but not on the Wildlife Range was unofficially scored (green measurement) in the top three in the Boone and Crockett competition. Just recently it was reported that a collector back east offered \$1500 for the mounted head, but the owner, a college student, refused to sell. This may be helpful in the process of RBU evaluation of the resource.

At Fort Peck six white-tailed deer were removed from the pasture through the use of a funnel-type trap which had a gate opening to the outside of the pasture. The trap was built late in the winter, providing little opportunity to use this year. An overpopulation of both whitetail and mule deer exists in the pasture. Now that the trap has been built, it will be used next winter in an attempt to remove as many deer as possible.

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, 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 equaling the increment. The Burnt Lodge herd is increasing due primarily to its relative inaccessibility. The entire population is estimated to approach 1000 animals.

The "west end herd" now has increased to an estimated 400 animals--85% of which are on the north side of the Missouri River. There is an AUM reserve for 385 elk on the south side (Fergus and Petroleum Counties) which is presently underutilized. While no problem concerning elk overuse or depredation exists on either side, management will attempt to encourage an increase on the south side while holding the line on the north.

The elk herd on CMR is one of the most productive in the state and provides a degree of hunter success seldom equaled anywhere. This year hunters were slightly less successful in the area receiving the most pressure. However, the management areas on either side provided better hunter success (See Hunting Section), indicating a shift in the population in response to hunting pressure.

Appreciation of elk on the Wildlife Range is not exclusively hunter-oriented. Throughout the summer and most of the fall hunting season, countless people enjoy seeing, listening, and photographing the elk that take up temporary residence adjacent to Slippery Ann. This area is closed to hunting and is part of the self-guided tour route. It provides additional opportunity for this non-consumptive public use, which numerically exceeds that of the hunting public.

4. Bighorn Sheep

This population seems to have stabilized somewhere between 50 and 70 animals. Known factors limiting herd size are legal and illegal kill, dispersion, and natural loss including predation. Each year from one to three illegal kills are found and one can only speculate as to the numbers not located. Also reports of wild bighorns in areas far removed from their usual habitat are not uncommon. These animals are not an extension of the herd but rather constitute another form of attrition. The proximity of domestic sheep is a probable decimating factor also.

This year two ewes were found shot during the deer season. One was marked with a state ear tag #S1292. Although there is no record of this particular tag, the series (and adjacent tag numbers) were used on a 1961 release at the Two-Calf enclosure and it seems logical to assume that this animal was released then. (Photo No. 70-943)

Eight mature rams were harvested the past two years (5 permits in 1969 and 3 in 1970). Among these are some outstanding trophies and yet the two largest rams have survived. One is identifiable because of its dark coloration and the other because of a unique horn growth. The latter is named "Old Crooked Horn" and is the ram on the left in Photo #70-1072.

5. Antelope

Although some good antelope habitat is present on the Wildlife Range, most is outside the boundaries. During severe winters these animals do concentrate in the "breaks" for protection.

Two young male antelope were added to the Leo B. Coleman Display Pasture at Fort Peck. One was obtained from Slippery Ann and the other from a ranch south of Malta in cooperation with the Montana Fish & Game Department. Two previous attempts to introduce males to the pasture have failed. Hopefully, these new additions will survive to accompany the female antelope placed in the display pasture in 1966.

At Lewistown display pasture, the antelope "herd" increased 100% with Sally giving birth to twins! (Photo #70-490) The newborn were soon rejected after they were molested by the bison. Attempts to reconcile the family failed and the twins were given to the Montana Fish & Game Department for their wildlife display.

6. Bison

At Lewistown the yearling bison was sold for \$300.75, leaving the original pair for display purposes. No calf was born this year so disposal procedures will not be necessary next year. A 12-acre addition fenced in early August on the south end of the pasture will allow resting the main pasture during the 1971 growing season. It will also allow separating the bison from the antelope when newborn young of the latter are vulnerable for a day or two after birth.

The 240-acre display pasture at Fort Peck is again stocked with four bison - one male and three females. Two calves were born but only one survived and three heifers were sold at a price of \$1071. The surviving calf was vaccinated for black leg, shipping fever, malignant edema, and brucellosis. She was also branded on the left hip with the numeral "0" which denotes the year of birth.

7. Longhorn Cattle

The three registered longhorns at Fort Peck are now 7, 12, and 16 years and display an impressive horn growth reminiscent of the Texas cattle drives that terminated here in Montana about 100 years ago. They are contained in a special pasture area adjacent to that of the bison and provide additional opportunity for the public to view yet another animal which was important to our American heritage.

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

1. Fur Animals

Except for beaver and muskrat, fur animal populations on the Wildlife Range are at a low level which seems normal for this area. Beaver surpluses are harvested annually and the aerial food cache census indicated a quota of 95 for 1971 in the three management units above the Fort Peck Reservoir.

The total quota of 100 this year was harvested by three permittees but not without expenditure of a lot more time, money, and administration than was the case when the permittee was selected rather than picked by chance.

A permit was issued at Fort Peck for removal of "not to exceed" twelve beaver. This program helps alleviate a nuisance problem wherein trees are damaged in the townsite and recreation areas. Additional problems occur to the city water system by way of the filtration plant.

2. Predators

Control of coyotes is sometimes necessary on portions of the Wildlife Range for protection of livestock. The entire area is zoned to better delineate "1080" control areas and document the need for all control efforts. This year more of the area was placed in the "no control" category where the need for control work was slight and other values paramount. Flexibility is necessary to make the program work and zones may change from year to year to meet demonstrated needs. The number of 1080 stations was reduced on the areas zoned as "control needed" in an attempt to accomplish objectives with a minimal use of this lethal agent.

No other animal control programs were necessary. Mountain lions, bobcats, raccoons, and several different avian predators occur on the Wildlife Range but none created problems that warranted control.

Criticism has been growing among stockmen who wish fewer restrictions over the control program. To date, however, we have maintained a realistic program fending off both those requesting more liberal control and those who would want none at all.

3. Rodents

Prairie dog populations continue to increase in both numbers and size of area inhabited. Current estimates are that dog towns on the Wildlife Range number in excess of 55 and these total 3000 acres. These areas provide a habitat for a diversity of wildlife species, some of which are listed as rare and/or endangered. The dog towns are a focal point for both wildlife and man, providing an opportunity for each to experience the other, hopefully, to the detriment of neither.

Man is disposed to manage wildlife and its environment (although there is ample evidence to indicate that he has not yet learned to manage himself). Be that as it may, there is concern that we, as managers, should exert some influence on further prairie dog expansion, especially since there is a sufficient number and dispersion of these animals to meet our goals. In fact, it may be argued that to not "manage" them at their present level would be politically or even biologically detrimental to the species itself.

As a result, the Denver Wildlife Research Laboratory is conducting experiments designed to create stress in these rodent populations by limiting their food supply at critical periods which may indirectly exert a population control.

The food reduction phase was accomplished this year along with the controls necessary to monitor the program. Successive data gathering will be accomplished when the prairie dogs next exit forth into the "brave new world" of an altered environment.

Populations of both field mice and deer mice are quite abundant but have leveled off at a point considerably below that of 11 years ago when the populations erupted to create a problem requiring artificial control.

4. Other Mammals

Rabbits continue a gradual increase. Both the white-tailed jack and the cottontail are more numerous than last year; and in the case of the latter, this year represents the "high" for the past six.

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

No changes were noted in either bald or golden eagle populations during 1970. However, the latest mid-winter inventory (January 5, 1971) showed a rather drastic decline in the former.

Osprey again nested in the vicinity of the U. L. Bend area of the Fort Peck Reservoir (see Photo # 70-820) but nesting success was not known due to incomplete census data.

The western burrowing owl exists in limited numbers mostly on the east half of the Wildlife Range

One snowy owl was seen December 3, 1970 by Slippery Ann personnel across the river south of the Wildlife Station.

F. Other Birds

There were no sightings of "new" birds that could be added to the current bird list. This list was revised and updated in July. It is now awaiting Regional Office approval and printing. A late robin migration was noted both at Lewistown and Slippery Ann the latter part of December. About 50 robins are wintering at Slippery Ann.

G. Fish

Northern pike fishing success was similar to that of last year, decreasing from what anglers experienced in the mid-1960's. Northerns weighing up to 26 pounds are being taken; the average is about six pounds. The Montana Fish & Game Department received 1,200,000 northern pike fry from the Miles City National Fish

Hatchery and placed them in several stock watering ponds in the Fort Peck area in early spring. From this 1,200,000 fry, 10,000 five inch fingerlings were netted and then placed in the reservoir at Fort Peck. The State is attempting to maintain a brood stock of Northerns in order to take advantage of those years when suitable spawning conditions occur.

The U. S. Army Corps of Engineers constructed five miles of lake-shore road this past summer. When finished, this road will run from Fort Peck to the Pines and dike off several bays and coulees, hopefully creating ponds that will fill from runoff in the spring. The State intends using these ponds for pike-rearing ponds.

For the second consecutive year Coho salmon were planted in the reservoir. This year the entire plant of 165,600 four inch Coho were planted at Nelson Creek in the Big Dry Arm of the reservoir. In 1969, 92,000 three inch Coho were planted in the reservoir; and during the month of June, 1970, Coho fishing at Fort Peck, the Pines, and Rock Creek Recreation Area was excellent. The three inch Coho had grown to an average size of 16 - 18 inches and provided sport fishing to a degree never before experienced in Fort Peck Reservoir. Coho fishing slacked off in July and August, but picked up again in October and November as this year's plant of fish, already 12 inches in length, began appearing at Fort Peck.

In an effort to revive sport fishing in the trout pond, the State planted 1275 four inch Coho. Very few were taken by fishermen; and by fall the Coho only averaged eight inches in length. This past fall, 11,200 five inch rainbow, 2840 eleven inch rainbow, 500 two to six pound rainbow, and 625 large mouth bass were planted in the trout pond at Fort Peck. The trout were furnished and delivered by the Ennis National Fish Hatchery. Yellow perch now abound in the trout pond therefore the State has decided to convert the pond to a warm water fishery. The trout were providing excellent recreation in December for ice fishermen and this should continue for several months.

A lake trout plant made over 20 years ago that was believed unsuccessful is apparently responsible for a few "lakers" in 12 - 14 pound class that were taken by sport fishermen this past summer. Since they were unknown to these waters they provided a subject for much speculation and conversation among the local anglers as well as a news article in the Hunting and Fishing News.

Fishing for paddlefish on the Missouri River above the Fort Peck Reservoir as well as below the dam at Fort Peck continued to gain

in popularity. Snagging for these "prehistoric holdovers" begins with the spring breakup and continues until late fall with the most productive period occurring in June and early July. During this peak period the existing campground facilities are crowded far beyond their capacities with the overflow expanding on a "first come-first served" basis until all usable off-road parking is occupied.

The use of boats in this section of the river expanded at a more rapid rate than did bank fishing; and although qualitative data is lacking, it is believed that more paddlefish were caught and released than in the past.

H. Reptiles

Nothing to report.

I. Diseases

Nothing to report.

III. REFUGE DEVELOPMENT AND MAINTENANCE

A. Physical Development

The following items were accomplished out of the Fort Peck Wildlife Station on the East Unit during this reporting period:

1. Captive Goose Enclosure. This facility was built in 1968, but further work and refinement was accomplished in 1970. This work included the establishment of alfalfa, clover, and grasses in the pasture; construction of a third display and nesting pond; installation of a sprinkler system for irrigation; and the addition of power lines for electric outlets and night lights.
2. Leo B. Coleman Wildlife Exhibit. Established lawns; trimmed all trees; set charcoal grills, graveled all roads; and established an observation area for visitors viewing the captive geese.
3. Buffalo Pasture. Elevated and shaped road on west edge of the pasture and set two culverts.
4. Constructed $\frac{1}{2}$ mile of new fence between captive goose area and tract 2-D. Removed and picked up two miles of old fence line on the north side of the longhorn pasture.
5. Landplaned 20 acres in tract 70-D and fertilized all irrigated farm tracts.

6. Constructed a storage room in service building; repainted walk and ceiling of shop; installed new aluminum storm windows on Quarters #3, and painted all trim.
7. Assisted local sportsmen's club with the erection of 12 tree goose nesting platforms.
8. Built and erected six 4 x 4 feet public hunting signs designating Bureau lands at Fort Peck.

On the West Unit and at Lewistown headquarters, the following physical developments were completed:

1. New stringers were placed under the original log portion of Quarters #7 and concrete poured under and around the foundation logs. Three new windows were also installed.
2. Remodeling of the kitchen interior of Quarters #36 begun late last year; was completed early this year. The basement walls were also painted.
3. Stored grain was transferred to a sealed van to prevent continual loss to rodents.
4. Ten new picnic tables were built and placed in the six picnic and camping areas.
5. A new information and display board was erected at Stop #9 on the 18½ mile tour route.
6. A paddlefish weighing station was maintained during the fishing season.
7. Numerous additional directional and warning signs were erected along roads and trails.
8. Walk-thru fence passages were built at four campgrounds.
9. Rewiring was accomplished on irrigation pump #2.
10. Construction of a new dike and goose pond islands opposite Camp Charley.
11. At the Lewistown headquarters, a 12 acre pasture was fenced adjoining the 31 acre wildlife exhibit area to allow for a rotation of animal use.
12. A seal coat was placed on the blacktop courtyard at Lewistown headquarters.

B. Plantings

1. Aquatic and Marsh Plants

Nothing to report.

2. Trees and Shrubs

Nothing to report.

3. Upland Herbaceous Plants

Nothing to report.

4. Cultivated Crops

All farm lands are now sharecropped at Fort Peck. Until this year, 97 acres of tracts 70-D and 71-D were refuge farmed. This year, however, this acreage was allocated to operators already farming for the Bureau. A total of 128.6 acres of barley on all tracts produced 6776 bushels for an average of 53 bushels per acre. Nine hundred and forty-five bushels of wheat were produced from 31.5 acres for an average of 30 bushels per acre. Ten and one-half acres of corn was left standing in tract 71-D for waterfowl utilization during the coming winter. The corn left standing from the 1969 season was about 50% utilized by wintering mallards. The Bureau's share of barley is used as supplemental winter feed at Fort Peck. All farm tracts receive high waterfowl usage in the fall and spring months.

Wet spring weather and high reservoir levels caused the Gar cooperative farming agreement to be modified. Land which was to have been farmed could not be due to wet conditions. A field of winter wheat could not be harvested because the reservoir flooded it. The Fort Peck unit received 1254 bushels of barley harvested from 114 acres in tracts 11, 12, and 16. All other grains produced were left unharvested.

C. Collections and Receipts

None to report.

D. Control of Vegetation

Twenty-four acres of cropland and seven acres of ditch banks were sprayed by the Bureau with 2,4-D amine to control bindweed, Canadian thistle, and fireweed. Good control was accomplished.

E. Planned Burning

Nothing to report.

F. Fires

An unusually wet spring and summer sharply reduced both the number of fires and acreage burned within the Wildlife Range in 1970. A total of only five fires occurred within the Range boundaries as compared to ten in 1969. Several much larger fires, however, occurred on public lands adjacent to the Range boundary after mid-August as hot, dry weather and strong winds shipped several fires out of control. One Class A recreation-caused fire was handled by Range personnel. The four remaining lightning-caused fires were suppressed by Bureau of Land Management personnel in accordance with our joint memorandum of understanding.

The following is a list of all fires and acreages burned during 1970:

District	Name of Fire	Location	Date	Fuel Type	Total Acres Burned
Malta	Engineer*	Sec 36 T22N R24E	6/3	western wood	1
	Sutherland	Sec 34 T22-23N R37E	7/9	ponderosa pine	70
Miles City	Cabin Coulee	Sec 12 T21N R36E	8/28	pine & grass	1
	Jasper Coulee	Sec 8 T21N R38E	8/29	western wood	10
Lewistown	Carroll Coulee	Sec 35 T21N R26E	8/13	grass & juniper	10
					92

*Handled by BSWF personnel.

No problems were encountered with our cooperative program but the need for a new look at our fire suppression philosophy is in order. Certain segments within the BLM have taken the lead in suggesting that all fires are not Smokey Bear bad. Certainly from a wildlife standpoint we have long recognized the value of fire as a tool of management and as a natural ecological process. This is especially true in the Missouri River Breaks where even uncontrolled fires are seldom complete burns and do not usually involve large acreages.

IV. RESOURCE MANAGEMENT

A. Grazing

As reported in previous years, the administration of the grazing program on the Wildlife Range continues to be a major problem. As directed in the Secretary of the Interior's memorandum dated February 18, 1963, the Bureau of Land Management continues to administer the livestock grazing under the provisions of the Taylor Grazing Act. Their administration, however, is subject to the policies and programs of the Wildlife Range. This division of administrative authority has not worked to the advantage of either Bureau or to the basic resource and has often resulted in misunderstanding and conflict. During the past year we have cooperated with the BLM in their Unit Resource Analysis planning procedure with

the objective of resolving the dual administration problem. The results of this study and a joint decision concerning the Range boundary and its administration should be effected early in 1972.

The early 1958 appeal by permittees King and Lawrence Edwards and Francis Henning concerning the 24 percent cut in their permitted numbers has now been resolved. The attempted reduction was initiated because of a BLM error in issuing the licenses. After running the entire gamut from the local District Manager to the Secretary of the Interior, who upheld the original decision, subsequent court action reversed the decision indicating no reduction would be necessary.

In order to resolve other administrative problems, and at the suggestion of the court, the construction of several fences was approved to provide each of the permittees an individual allotment. With the resolution of this case through court action, the only appeal case pending which directly affects the Wildlife Range, is that of the Devils Creek Community Allotment. The origin of this appeal is similar to the Edwards appeal above and involves a 19 percent reduction in livestock numbers.

Perhaps one of the more pressing problems during the year was the purchase of the Wittmayer property in Valley County by a newly formed Federal Housing Administration grazing association consisting of some thirty members. The association not only purchased the 3300 acres of private land but was also awarded the grazing privileges on approximately 179,000 acres of P.D., L.U., and Corps of Engineer lands jointly administered by the BLM and BSWF (38,893 acres lie within the Wildlife Range). Before the \$900,000 FHA loan could be consummated, as with all FHA loans, a range allotment management plan had to be prepared and approved. Unfortunately, we were not made aware of these events until after much of the planning was completed. As a result, a lot of unnecessary confusion and last minute coordination, updating, and field work had to be done before we could approve the plans. The result will be the initiation of a three-pasture rest-rotational grazing system on the Range portion which should improve the previous winter grazing system.

Several other "improved" grazing systems (rest-rotation, deferred, etc.) have been proposed by BLM during the year. Among these are the Eide and East Slippery Ann Allotments. Again these proposals were not submitted until all field work was completed. These and other proposals are being studied and evaluated as to their possible impact upon wildlife.

The above further emphasizes the general lack of coordination and cooperation that so often presents itself. We continue to stress the need for joint participation in the preparation of these allotment management plans and have made some progress to improve this situation.

B. Haying

At Fort Peck six acres of sharecropped alfalfa produced 22 tons of hay. The Bureau's share is used for supplemental feed in the Leo B. Coleman Wildlife Exhibit and also for the three Texas longhorns.

C. Fur Harvest

Beaver were the only furbearers harvested on the Wildlife Range; 95 were trapped in three management units on the west end. At Fort Peck a permit was issued to reduce the nuisance beaver within the townsite and recreation area. Only five were taken. The total harvested on the Wildlife Range was 100. All proceeds reverted to the trappers in order to make it economically feasible for them to operate.

D. Timber Removal

No stands of commercial timber exist on the Wildlife Range. Although small quantities of dead and downed timber were used for corral poles and firewood, no growing timber was removed.

E. Commercial Fishing

Five commercial fishermen under permit from the Montana Fish & Game Department, operated on the Fort Peck Reservoir in 1970. One fisherman based his operations at Devils Creek; another at Nelson Creek; and the remaining three are based at Fort Peck. The operators at Fort Peck worked with goldeye only while the other two operators caught species commercially salable.

The results of the commercial fishing operations on the Fort Peck Reservoir during 1970 as reported by the Montana Fish & Game Department is shown below:

<u>Species</u>	<u>Pounds Taken</u>
Buffalo	400,000
Catfish	6,500
Carp	91,000
Drum	6,000
White carp	1,300
Goldeye	<u>52,000</u>
Total	556,900

F. Other Uses

Nothing to report.

V. FIELD INVESTIGATION OR APPLIED RESEARCH

A. Progress Report1. Nichols Coulee Resource Conservation Area

The Nichols Coulee four-pasture, rest-rotation grazing system was initiated in 1965. The six enclosures, sample points, and pellet transects, however, were not completed until 1967, when the first vegetative measurements were made. We now have four years data (one complete rotation) and the summary and statistical analysis of these data should be completed by the Denver Research Center later this spring. When the results are available, we will meet with the local Bureau of Land Management office to compare information and jointly evaluate our findings.

During the last week of July, personnel from the Denver Research Center, Regional Office, and our staff met to re-evaluate the objectives, procedures, and experimental design of the study. Such meetings are not only helpful but also sometimes necessary with changing personnel. As a result of the meeting, three additional control transects were established in similar vegetative types outside the rest-rotational area. As time permits, all control transects will be read in 1971 for base data. However, the previously set schedule for reading the transects will be followed (a 1972 reading and every fourth year thereafter). It was also decided that the Denver Center will, if possible, do the statistical analyses.

A summary of the 1970 vegetative readings is shown in Table II on the following page.

2. Bird Banding

The Wildlife Range did not receive a banding quota; however, the Montana Fish & Game Department requested that the Bureau band 1000 mallards including 500 of each sex at Fort Peck. This program started in late January; and by March, 518 males, 330 females, and 1 black duck had been banded. Spring migration and dispersal terminated the program. The males were banded in three days but the females were fewer in number and more difficult to catch.

A mourning dove banding laboratory was conducted at Slippery Ann involving Wildlife Range personnel, State employees, and U. S. Game Management Agent Cofer. Following this and a State banding program on the area (results of which are unknown), 279 doves were banded by Bureau personnel in assistance with the State program.

Table II - 1970 NICHOLS COULEE VEGETATIVE TRANSECT SUMMARY

Transect:	Agate Ridge (Excl.#1)		C.K. Burn (Excl.#2)		C.K. Creek (Excl.#3)		Opuntia Flats (Excl.#4)		Spring Coulee (Excl.#5)		Wiseman (Excl.#6)	
	Contact 1	Contact 2	Contact 1	Contact 2	Contact 1	Contact 2	Contact 1	Contact 2	Contact 1	Contact 2	Contact 1	Contact 2
<u>CONTROL</u>												
Grasses	14.0	-	17.3	-	24.6	-	23.3	-	28.6	-	11.3	-
Forbs	6.0	-	1.3	-	4.0	-	2.6	-	3.3	-	4.0	-
Shrubs	8.6	-	16.6	-	6.6	-	3.3	-	11.3	-	12.0	-
Litter	15.3	34.0	24.0	-	13.3	45.3	18.0	62.6	5.3	43.3	8.0	22.0
Nothing	56.0	-	40.6	74.0	51.3	-	52.0	-	51.3	-	64.7	-
Bareground	-	64.0	-	24.6	-	54.0	-	28.0	-	54.6	-	77.3
Lichen	-	1.3	-	-	-	0.6	0.6	8.6	-	2.0	-	-
Rock	-	0.6	-	1.3	-	-	-	0.6	-	-	-	0.6
<u>BIG GAME</u>												
Grasses	22.0	-	15.3	-	20.0	-	24.0	-	22.6	-	10.0	-
Forbs	2.0	-	7.3	-	8.6	-	2.0	-	6.0	-	4.6	-
Shrubs	17.3	-	15.3	-	10.0	-	8.0	-	14.6	-	10.0	-
Litter	21.3	38.6	20.0	58.0	36.6	54.6	22.6	62.6	16.6	52.6	12.0	17.3
Nothing	35.3	-	40.6	-	24.6	-	43.3	-	40.2	-	62.6	-
Bareground	-	56.0	0.6	38.6	-	42.6	-	14.6	-	43.3	-	82.0
Lichen	2.0	3.3	-	-	-	2.6	-	22.6	-	4.0	-	-
Rock	-	2.0	-	3.3	-	-	-	-	-	-	-	-
<u>LIVESTOCK</u>												
Grasses	18.0	-	14.6	-	19.3	-	20.6	-	26.6	0.6	4.6	-
Forbs	10.0	-	2.0	-	4.6	-	4.0	-	5.3	-	5.3	-
Shrubs	9.3	-	24.0	-	6.6	-	10.6	-	4.0	-	14.0	-
Litter	13.3	37.3	18.0	72.6	17.3	32.0	15.3	58.6	26.6	50.0	10.0	26.0
Nothing	49.3	-	40.6	-	52.0	0.6	48.6	-	35.7	-	66.0	-
Bareground	-	59.3	-	26.6	-	64.0	-	28.0	-	45.3	-	74.0
Lichen	-	3.3	-	0.6	-	3.3	0.6	10.6	-	1.3	-	-
Rock	-	-	-	-	-	-	-	2.6	-	0.6	-	-

3. Prairie Dog

Considerable interest has recently been focused on the development of control methods for black-tailed prairie dogs to replace compound 1080. This compound exhibits not only high primary toxicity to many rodent genera, but also has some undesirable secondary characteristics to nontarget wildlife species and domestic animals. Certainly, the need for a replacement control agent cannot be ignored.

The use of herbicides as rodent control agents is a relatively new concept. Keith et al. (1959) reported effective control of pocket gopher (Thomomys talpoides) populations in western Colorado through spraying of infested areas with 2,4-D (2,4-dichlorophenoxyacetic acid). More recent studies (Tietjen et al. 1967) show that the decline in gopher numbers on sprayed areas is directly related to the depletion of essential (forbs) with starvation resulting. This indicates that further investigations into the applicability of 2,4-D as a control agent for other rodent species--in this case, the prairie dog, is warranted.

The Denver Research Laboratory was asked to evaluate this theory on the Charles M. Russell National Wildlife Range and devise a technique to control prairie dog expansion and at the same time protect the habitat provided by prairie dogs and the several endangered species associated with this habitat.

The study's progress to date involves the following:

1. Selection of suitable study areas.
2. Inventory of vegetation prior to treatment.
3. Population index (pre-treatment).
4. Modification of study plan to meet existing conditions.
5. Food habits study (pre-treatment).

Follow-up work will be conducted the spring of 1971 using both Research and Wildlife Range personnel. Duration of the study will be dictated by the reaction, if any, of the prairie dogs to the treatment.

4. Black-footed Ferret

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 ferrets.

Progress was made in each category. The buffer zone limiting control methods around dog towns was maintained. The effort continues to make the public ferret-conscious by means of talks and slide shows--and the search for ferrets continues. A college student was hired with his primary activity assigned to ferret-finding. Mr. Don Fortenbery gave him a orientation to the latest techniques but no ferrets were sighted despite an accumulation of "clues" confirming the presence of the illusive mustelid. One sighting in the adjacent Little Rocky Mountains north of the Wildlife Range was investigated and leaves little doubt that there is at least a ferret or two in the vicinity.

A kit fox sighted at U. L. Bend confirms the identification of tracks recorded as kit fox on CMR the previous year.

5. Wilderness

The objectives of the wilderness study are to evaluate the entire Wildlife Range for its suitability, totally or in part, for inclusion in the National Wilderness Preservation System. To date preliminary delineation work has been completed and further progress is dependent upon master planning of the Bureau and resource planning of BLM as it affects CMR. During this interim period Marvin Plenert has been actively reviewing other wilderness areas and assisting with CMR planning.

VI. PUBLIC RELATIONS

A. Recreational Uses

The car counters installed on the major access roads used by recreationists provide the basis for recreation visits. These figures together with those provided by the Army Corps of Engineers at Fort Peck are included in the Annual Recreational Use Report.

The captive buffalo at the Lewistown headquarters and at Fort Peck, together with the captive goose flock trumpeter swan and Texas "longhorn" cattle at the latter location, continue to be a popular attraction not only to the visiting public but also to the local residents as well.

B. Wildlife Range Visitors

As in the past, a great number and variety of visitors visited the Range during 1970. No attempt, however, will be made to list all visitors. Only those visits of official business are recorded and these are on the following page.

<u>Agency</u>	<u>No. Visits</u>
Bureau of Sport Fisheries & Wildlife	42
Bureau of Land Management	21
Army Corps of Engineers	5
Montana Department of Fish & Game	10
Denver Wildlife Research Center	2
U. S. Forest Service	2
Montana Wildlife Federation	3
U. S. Department of Justice	2
Montana Weather Bureau	1

C. Refuge Participation

1. Talks, Films, and Displays

January Talk and film "Pulse of Life" shown to
Fergus High School - Burkholder
Film shown to Big Muddy Sportsmen's Club - Gibbons
Talk on ecology to St. Leo's High School - Burkholder

February Talk to Garfield County Woolgrowers
Annual Convention - Burkholder
Assisted local garden club with wildlife
display - Burkholder
Erect display and booth for annual snowmobile
rally and Fort Peck "Open House" - Gibbons
Film shown to local sportsmen's club - Gibbons
Talk "Pesticides and the Environment" to
Great Falls Rotary Club - Krantz

March Display for annual Sportsmen's Show - Gibbons
Talk to Lewistown civic clubs on Wildlife Week - Burkholder
Talk to local Rod & Gun Club concerning refuge
recreation plans - Burkholder

April Talk to grade school concerning "Earth Day" - Burkholder
Earth Day address to 650 students and teachers
at Fergus High School - Martin
Talks to St. Leo's and Fergus High School on
"Environment and Ecology" - Burkholder
"Open House" with film "Time and the Trumpeter Swan"
shown at Lewistown headquarters - Staff
Talk and film presented to high school biology
class on "Our Environment" - Krantz
Talk and film "Trumpeter Swan" to Girl Scouts - Krantz
Talk "Conservation of Natural Resources" and
film to local grade school - Krantz

May Film "The Deer Family" shown to Lions Club - Burkholder

June Slide talk to party on annual Missouri River
Float Trip - Burkholder

September Film shown to Big Muddy Sportsmen's Club - Gibbons

December Talk and films presented to Fergus High School,
"The River Must Live" and "The Pond" - Burkholder
Film shown to local sportsmen's club - Gibbons

2. Meetings

January Fort Peck Businessmen's meeting - Gibbons
Chain Buttes Grazing Association - Krantz
Coast Guard Auxiliary - Gibbons

February Montana State Grazing Advisory Board in Billings -Krantz

March Valley County Development Council - Gibbons

April BSW and BLM annual joint meeting - Staff

May Refuge staff and BSW workshop meeting in Glasgow-Staff

October Valley County Development Council - Gibbons
Fort Peck Interagency meeting in Glasgow - Gibbons

November BLM - concerning Range boundary adjustment -
Martin, Plenert, and Krantz

December BLM - "Rest-Rotation Grazing Management" training
session in Billings presented by A. L. Hormay - Krantz

3. Tours

June Participated in SCS sponsored tour of
Plant Materials Center in Bridger - Krantz

August Helene Monberg (Washington correspondent) given
tour of Wildlife Range - Gibbons

October Conducted tours of Range for 24 children from
Lodgepole School - Jones

4. News Releases and Publications

January	- Drawing for Trapping Permits
February	- Signs of Spring?
March	- National Wildlife Week Wildlife Range Open House Fish & Wildlife Service Booth
August	- Want to Buy a Bison?
September	- Wildlife Range Vehicle Policy
October	- Bighorn Ewe Illegally Killed on Wildlife Range
November	- Opportunity Increases for Waterfowl Hunting Wildlife Range Manager Explains Travel Regulations

Publications

Organochlorine and Heavy Metal Residues in Bald Eagle Eggs - Krantz, et. al., and Some Aspects of the Population Dynamics of Brown Pelicans; Henny and Krantz were submitted for publication during 1970.

How to Get the News in the Newspapers - December Insight; Martin

D. Hunting

Some form of hunting was permissible on CMR for one-third of the year. Upland bird season opened September 12, and waterfowl season closed December 31--for 110 days of continuous hunting. The various seasons included 5 big game species, 4 upland bird species, and waterfowl. In addition, a ten day spring turkey brought the total hunting days to 120.

1. Big Game

This was the second year that bighorn sheep were hunted since their 1958 reintroduction. Permits were issued for three rams and all permit holders were again successful. Although an "archery only" season was not approved, two of the permit holders chose to use this means to hunt their trophies; taking up the gun only after running out of time and/or patience. This season extended from September 15 through November 29.

The general big game (rifle) season dates were October 18 through November 29. This was preceded by a "archery only" season on deer and elk from September 13 through October 11. Two important changes occurred in the elk season: (1) The season ran concurrent with the regular deer season; and (2) There was no open season on CMR on the south side of the Missouri River. Again there were 310 permits issued in three hunting districts; and although final tabulation is not available, it is believed that hunter success will approximate that of the past several years.

On the following page is a tabulation (Table III) of elk hunting success by State management units on the north side of the Wildlife Range.

Each year more hunters participate in the special archery season for elk and deer. Last year a 10% increase was noted and more hunters were involved than during the regular rifle season for deer. This year the rifle season for deer and elk ran concurrently and the rifle hunters had the edge despite an increase in archers.

More archers participated but the kill decreased from 25 last year to 15 this year. The famous Mr. Fred Bear and his entourage operated with guidance of the Montana Fish & Game Department for several weeks in the Timber Creek area out of Fort Peck and Glasgow. They reported some excellent movie footage but Mr. Bear was apparently unsuccessful in bagging his elk despite an all-out effort on the part of the State, which included the use of a helicopter in support of the operation.

Deer hunters were less successful this year than last; and according to State checking station figures (See Table I), hunter success was the lowest in 10 years and was 50% lower than the past 14-year average. These figures refer only to the northeast portion of the Wildlife Range but this same trend does apply elsewhere though not to the same degree.

A special emphasis was placed on the harvest of white-tailed deer by issuing special non-resident \$35 licenses for this species by area. The attempt was unsuccessful in significantly altering the harvest but did result in the sale of many additional licenses and in making lots of disgruntled hunters.

2. Upland Birds

Hunting for sharptails and sage grouse was excellent throughout the season. Pheasant hunting was moderately good and a big improvement over the past several years. One factor which made bird hunting on the Wildlife Range more desirable was the knowledge that the use of mercury was banned prior to the past growing season. Elsewhere the risk of mercury and pesticide contamination was believed greater. The net result was that hunters consider birds from the Wildlife Range more desirable than others taken elsewhere.

Turkey hunting was poor and few birds were available to the hunter. We will again recommend a closed season on this species.

3. Waterfowl

The Central Flyway waterfowl season extended from October 3 to December 31 to allow 13 consecutive weeks of hunting. The season was based on a point system with 100 plus points being the daily limit. In the

Table III. Sex and Age Composition of Elk Harvest, Areas 62, 62.1 and 63, 1970.

Area and Type of Permit	Bull				Cow				Calf Total	% Hunter Success	
	1½	2½	Mat.	Unkn.	1½	2½	Mat.	Unkn.			
Area 62											
Either Sex (120)	9	0	1	4	0	0	0	35	1	50	42
Antlered Bull (70)	6	4	4	2	-	-	-	-	-	16	23
Subtotal	15	4	5	6	0	0	0	35	1	66	35
Area 62.1											
Either Sex. ¹ (30)	12	4	5	7	0	0	0	15	2	45	75
Antlered Bull (30)	-	-	-	-	-	-	-	-	-	-	-
Subtotal	12	4	5	7	0	0	0	15	2	45	75
Area 63											
Either Sex (25)	6	2	1	0	0	0	0	9	2	20	80
Antlered Bull (35)	16	4	1	0	-	-	-	-	-	21	60
Subtotal	22	6	2	0	0	0	0	9	2	41	68
Grand Total	49	14	12	13	0	0	0	59	5	152	

1. Harvest could not be separated by Either Sex or Antlered Bull because of mixup in issuance of permits.

case of mallard, the drakes were counted as 20 points and the hens 90. The "special" late mallard season held in 1968 and 1969 was not repeated in 1970. On the public hunting areas at Fort Peck, a total of 1803 mallards were taken by 516 hunters for an average of 3.5 birds/hunter. This compares with 1.95 birds/hunter in 1969 and 2.6 birds/hunter in 1968. Conditions were excellent for duck hunting at Fort Peck as the weather turned cold in November and remained that way for the remainder of the season. The ducks apparently can't resist the small seep below Fort Peck Dam known as Duck Creek and an estimated 75% of the total kill takes place at this small area. The early snow cover on the fields made cereal grains more difficult to obtain for the birds. However, 10,000-15,000 mallards remained at Fort Peck throughout December when most of the hunting occurred.

Several hundred Canada geese were in the Fort Peck area the earlier part of the season but few were taken by hunters. Hunting pressure in the private fields adjacent to the captive goose flock increased this year but only two geese were known killed.

On the river above the reservoir, goose hunting was excellent both on the Wildlife Range and off. The closed area (see regulations map) provides a needed sanctuary that holds the geese in the Central Montana area during a greater portion of the season. The geese were mostly gone by mid-November as a result of freezeup.

4. Mourning Dove

Mourning doves are classified as song birds in Montana and there is no open season. Repeated attempts by the Montana Fish & Game Department to move the legislature to reclassify them as a game bird have failed. We are on record in support of this proposed reclassification.

E. Violations

As in the past, most of the violations on the Range were handled by State wardens. The one notable exception was the two individuals apprehended for possession of an illegally killed bighorn ewe by our maintenance foreman, Casey Jones. Other violations and their disposition as reported by each of the wardens is as follows:

<u>Violation</u>	<u>No.</u>	<u>Disposition</u>
Possession of sage grouse during closed season	1	\$ 75.00
Possession of sharp-tailed grouse during closed season	1	75.00
Failure to tag deer	1	200.00*

*Revoke license 16 months.

Violation (continued)	No.	Disposition
Failure to tag deer	1	\$100.00
" " " "	1	28.50
" " " "	1	57.00
" " " "	1	30.00
Littering in recreation area	1	13.50
Attempt to kill bighorn sheep	2	50.00
Kill mule deer w/whitetail permit	1	30.00
Illegally killed mule deer doe	1	30.00
Operated boat w/o adequate life preserver	9	130.00
Operated boat w/o license	1	15.00
Fishing w/o license	1	25.00
Tagging violation	2	50.00
Over limit big game	1	30.00
Shooting swan	3	75.00
		<u>\$1014.00</u>

F. Safety

The Wildlife Range experienced an unusually fine safety record during 1970. Only two relatively minor, although potentially dangerous and somewhat painful, accidents occurred during the year. In one case, our shop mechanic suffered a nasty blow to the bridge of his nose when a wrench he was using broke. In the other case, the assistant manager at Slippery Ann suffered a slight injury to or near an eye while soldering some water pipe in one of the residences. Apparently when the hot solder came in contact with the moisture in the pipes, some splattering occurred, hitting the employee in or near his eye. Fortunately, although each of the accidents could have resulted in serious injury, neither was of much consequence and no lost time resulted. As of December 31, 1970, this station has accumulated a total of 897 days without a lost-time accident.

In compliance with Bureau safety standards for all tractors, several roll bars were designed and installed by our shop mechanic. All tractors and road patrols have now been equipped with the required safety devices.

During the year Chairman Krantz held monthly safety meetings as busy field schedules would permit. In addition, in February, five staff members completed the Standard First Aid Course. The following safety discussions and films were shown during the year:

	<u>Safety Topic or Film</u>
January	First Aid - Pulse of Life
February	Automotive Tire Hydroplaning
March	Safety Everywhere - All the Time
April	Grass & Brush Firefighting
May	Lifting - Man's Age-old Problem
June	Before They Happen
	<u>Defensive Driving Training</u>
August	Limited Access Highways - II
September	Highways and Byways - III
October	Freeway Driving is Different
November	Deadly Driving Errors -
	1. A Matter of Speed
	2. A Matter of Distance
	3. A Matter of Adjustment
December	Final Factor

Culminating our safety program for 1970 was the presentation of the Bureau Safety Awards to a number of our staff by Refuge Manager Martin at our annual Christmas party. These coveted awards reflect accident-free performance by the employee. Awards were presented to the following:

Frank Martin	20 years	John Kombol	5 years
Linda Wicks	20 years	Joseph Kombol	5 years
Lynes Kilby	10 years	Marvin Plenert	5 years
Sam Sage	10 years	Joe Zupec	5 years
Charles Gibbons	5 years		

VII. OTHER ITEMS

A. Items of Interest

Sally and Pete gave birth to antelope twins in the headquarters pasture. The newness of the baby antelope was apparently more than the bison could cope with and the end result was that the fawns were rejected by Sally after the big bullies molested them. The twins were donated to the Montana Fish & Game Department after a tranquilized Sally still refused to nurse them.

A 12-acre pasture was added to the one at Lewistown. A pasture rotation is now possible and such incidents as described above can be prevented by isolating individual animals at critical times.

John Foster, Refuge Manager of U.L. Bend NWR was temporarily assigned to the staff at CMR pending formal establishment of the new refuge at U.L. Bend. He transferred to Bowdoin NWR in March when the two refuge areas were combined administratively. John left his mark here in several ways--not the least of which is improved methods of catching fish through the ice. He also took with him an old CMR hand, WAE employee Frank French.

Many "Photo by Frank Martin" notations were made in local newspapers, periodicals, as well as national publications. Various local organizations benefited, as did the Bureau, from these efforts. For example: Photos of flood damage at the State Fish Hatchery played a decisive role in securing \$50,000 rehabilitation money from the Montana Legislature. His contribution to In-Sight related to photography and was entitled "How to Get News in the Newspapers."

A policy restricting off-the-road vehicle travel on CMR was placed in effect after a year of preparatory public relations work. Only warnings were given when violations were noted. Since none of the people warned were caught the second time, no citations were issued. A more active enforcement will begin after the marking of roads and trails is more nearly complete.

Helene Monberg, Washington, D. C. news correspondent, was assisted with a writing project concerning the Wildlife Range at Fort Peck. Before returning to Washington, she wrote Assistant Secretary Glasgow about the lack of developments in the area, precipitating a reply from us to the Secretary.

Fred Bear, while unsuccessful in getting an elk with his bow, did provide excellent film footage for the sponsoring American Sportsmen T.V. series. The entire entourage was hosted on the Wildlife Range by the Glasgow District of the Montana Fish & Game Department.

A great deal of time and effort has gone into the BLM planning system for the Missouri River Breaks in which the lands of the Wildlife Range play a dominant role. This is called a "joint-planning effort," but, in reality, is a BLM plan which we shore-up and strengthen. The obvious effect of this "joint-planning" is that the BLM planning goes forward while our Bureau master planning, wilderness planning, and public use plans are held in abeyance.

Phase III of the building program at Fort Peck was completed with the acceptance of 29 new houses by the Corps. This brings the total of new homes built the past three years to 79. This is the final phase of housing construction although a chapel is still under construction and will not be completed until the spring of 1971.

Assistant Manager Mike Brownlee resigned from the Bureau following a training session in Washington, D. C., in which he ended up as a permanent member of Senator Magnuson's staff. We wish Mike well and feel strongly that the Bureau will certainly miss his talents.

Another resignation occurred when Dean Gilbert, shop foreman at Lewistown, decided to work for a local auto dealer as an automotive mechanic. Dean is employed in Lewistown and, socially speaking, his ties with the Bureau are not entirely severed.

Charles Peck, assistant manager at Slippery Ann, transferred to J. Clark Salyer NWR to join with another former CMR employee, manager Bob Fields. Charley is sorely missed, especially since fortunately for him, his transfer was timed to make the omission of his usual contributions to this report less of a obligation perhaps, but no less a disaster for sure!

On the brighter side the staff on CMR was recently replenished with two outstanding individuals. Mr. Phil Aus, assistant manager at Lewistown, filled Mike's position. Rollie Krieger replaced Charley at Slippery Ann. Both of these men bring talents from other areas that may result in a fresh look and possibly some new solutions to some old problems. We take this opportunity to again welcome them aboard.

A district office for the Division of Wildlife Services opened at Lewistown and office space was made available at CMR headquarters. Richard Wonacott, the man in charge, hails from California and provides a close liaison with the local situation in Central Montana and the Billings State Supervisor.

Dean Bolstad, a college freshman employed as a "ferret finder" during the past summer worked out so well that we are hopeful that he will return to us next year. The admiration seemed mutual since Dean, a geologist, is planning to change his emphasis to wildlife.

Betty Minnich, clerk-typist, resigned to accompany her husband on a military assignment to Oslo, Norway.

Manager ^Martin spent five days in August in the Bob Marshall Wilderness as a guest of the Forest Service. He visited his son, Stephen, who was stationed as a summer lookout on Beartop Mountain. Together they took about 200 photos, most of which will go to the Forest Service, who furnished a saddle horse and pack mule to get Frank and his cameras into the area. Despite one of the best padded saddles owned by the Forest Service, the elder Martin discovered that a saddle sore is not a fanciful illusion.

B. Photographs

A section of photographs taken by several members of the staff is included.

C. Credits

All members of the staff were involved in writing this report. Field managers Gibbons and Krieger wrote drafts applying to their respective districts of the Wildlife Range. Bob Burkholder and Bill Krantz did the majority of the final writing and compiling at headquarters. Linda Wicks did the big job of assembly and typing.

Submitted by:

Frank Martin

(Signature)

Refuge Manager

(Title)

Date: 2/26/71

Approved, Regional Office:

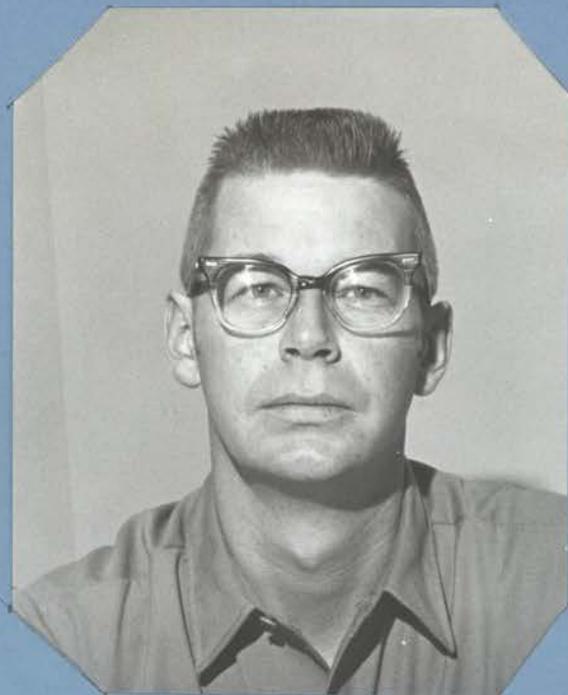
Date: 3/19/71

Crawford Long

(Signature)

Asst. Refuge Supervisor

(Title)

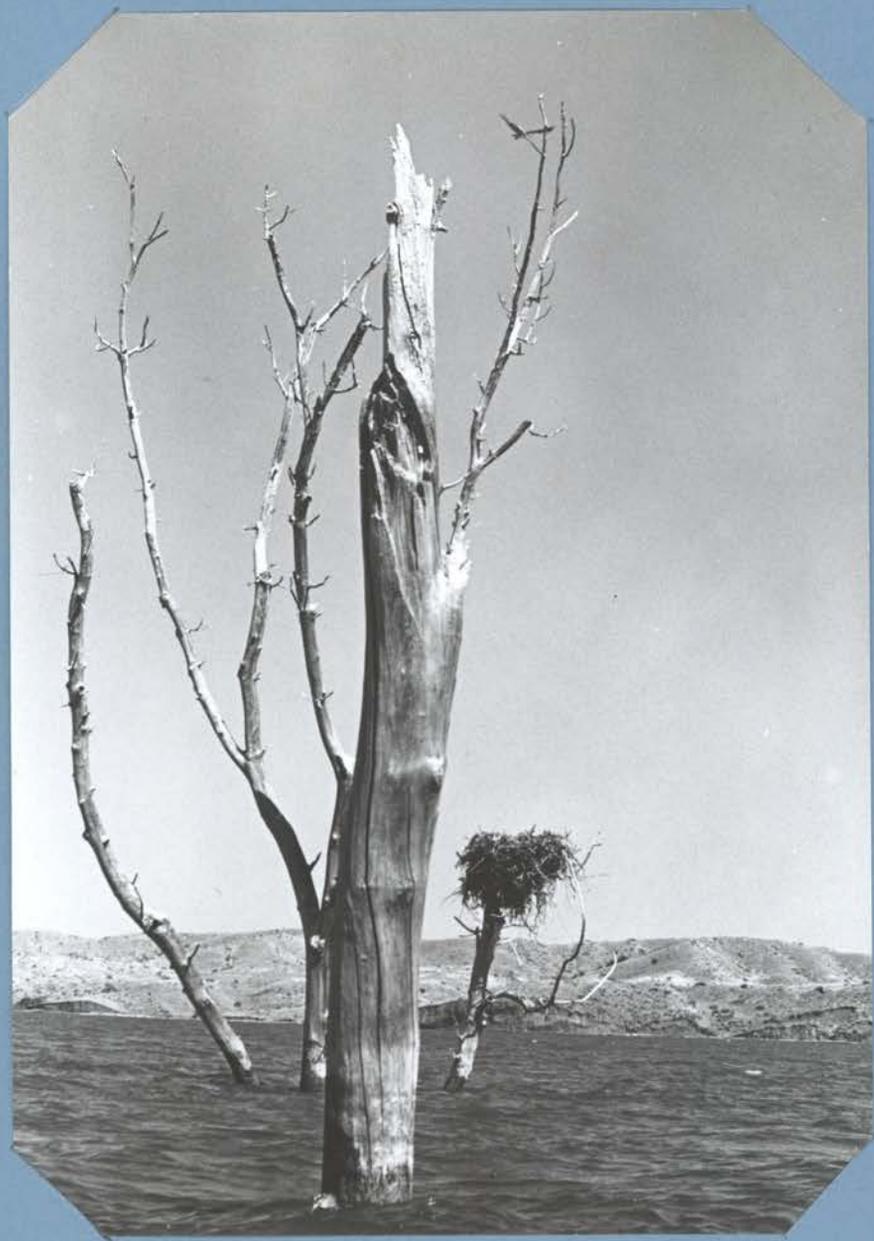


Philip B. Aus (Refuge Manager GS-11) transferred to CMR from the Devils Lake Wetland Office on December 27, 1970. He filled the assistant manager's position at Lewistown.
-Photo 71-3. FRM



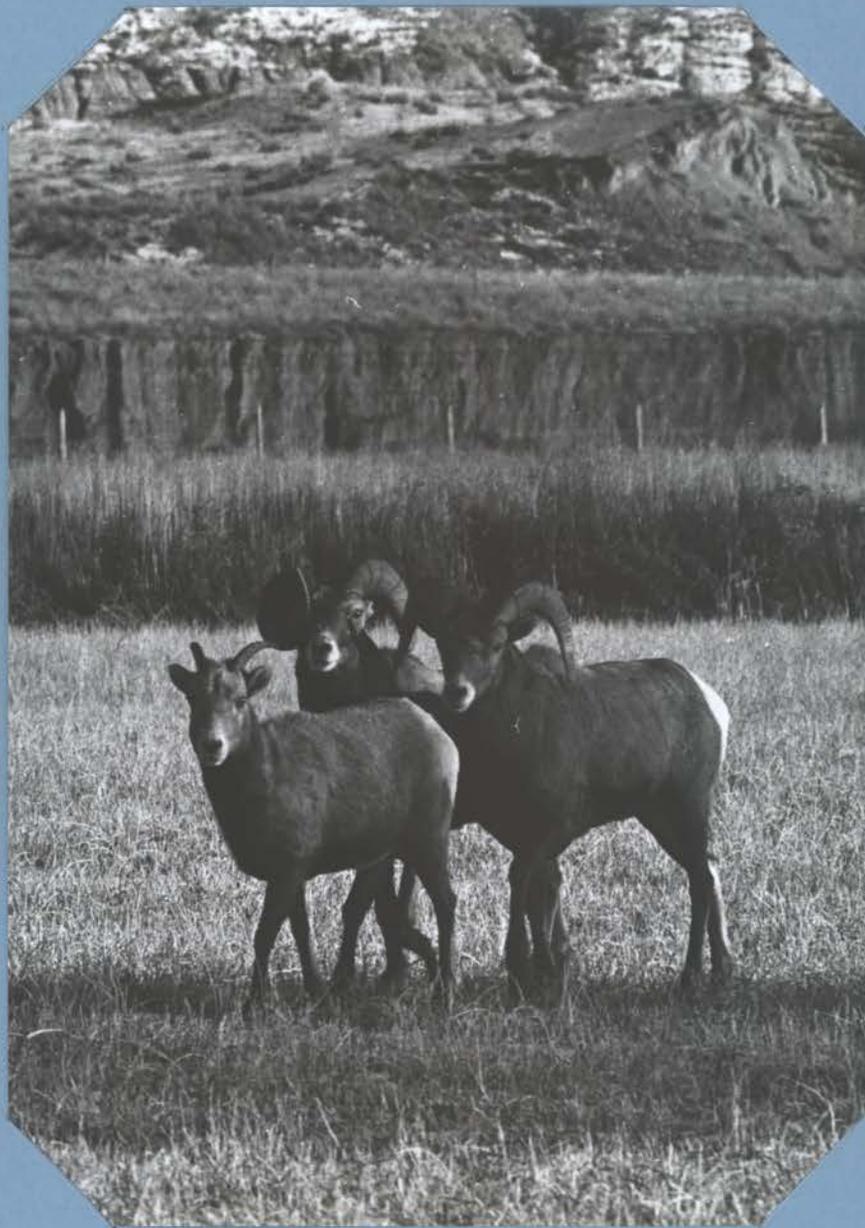
Rolland J. Krieger (Refuge Manager, GS-9) transferred to Slippery Ann from Basket Slough NWR on November 15, 1970. He filled the vacancy created by Charles Peck's transfer to J. Clark Salyer NWR.
-Photo 71-33. FRM

Note: All other permanent personnel as listed in this report are still employed and are pictured in 1968 and 1969 NRs.



One of the few remaining osprey nests in cottonwood snag. Photo taken near mouth Crooked Creek.

-Photo 70-820, 8/26/70. FRM



"Crooked Horn", the bighorn ram on the left, along with other rams, jumped inside the 2,000 acre enclosure during the late fall breeding season.
-Photo 70-1072, 12/70. RK

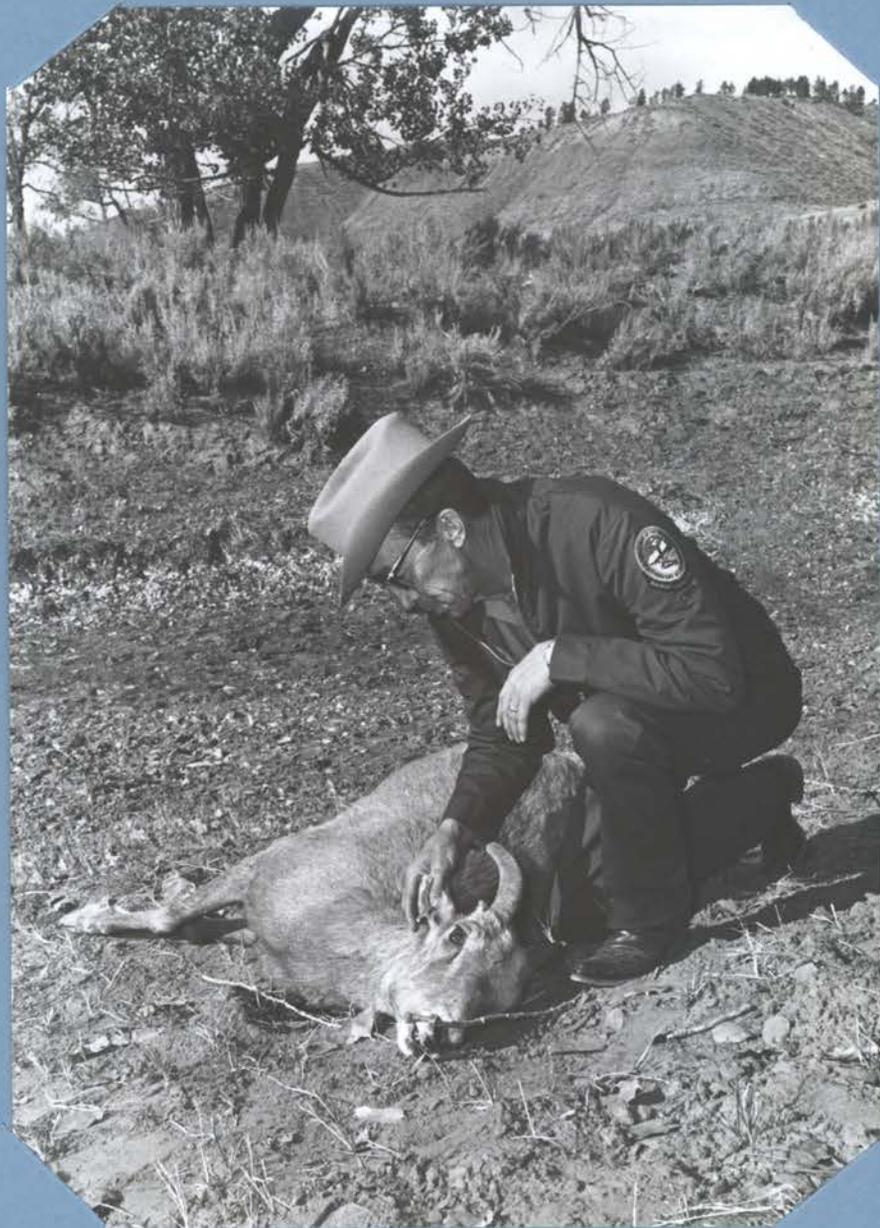


Campers along the Missouri River above the Wildlife Range. This family floated from Virgelle to the Fred Robinson Bridge.

-Photo 70-802, 1/70. BB



Commercial fisherman pulling net in Big Dry Arm of the
Fort Peck Reservoir. -Photo 70-726, 7/28/70. FRM



Harold (Casey) Jones inspects ear tag in illegally
killed bighorn ewe found lower Two Calf drainage.
-Photo 70-943, 10/18/70. FRM



Unauthorized road constructed east of Burke Ranch
in Valley County. Regional Solicitor is considering
trespass action against Burke.
-Unnumbered Photo by Bob Burkholder, 10/15/70

3-1750a

Cont. NR-1
(Rev. March 1953)WATERFOWL
(Continuation Sheet)REFUGE Charles M. Russell NWRMONTHS OF January TO April, 19 70

(1) Species	(2) Class D Weeks of reporting period								(3) Estimated	(4) Production
	3/15-21 11	3/22-28 12	3/29-4/4 13	4/5-11 14	4/12-18 15	4/19-25 16	4/26-5/2 17	18	waterfowl days use	Broods: Estimated seen : total
Swans:	Reservoir Frozen									
Whistling	River Frozen									
Trumpeter										
Geese:										
Canada	565	700	750	550	550	500	500		38,073	
Cackling										
Brant										
White-fronted	1	1	1	1	1	1	1		119	
Snow						2	2		28	
Blue										
Other Total	566	701	751	551	551	503	503		38,220	
Ducks:										
Mallard	5,200	4,050	4,050	3,200	2,500	2,000	2,000		994,525	
Black										
Gadwall	100	450	800	800	500	500	200		23,450	
Baldpate										
Pintail	2,200	1,050	1,050	500	500	300	300		45,150	
Green-winged teal		100	250	200	100	50	50		5,250	
Blue-winged teal		200	500	500	300	150	50		11,900	
Cinnamon teal										
Shoveler	500	600	800	800	400	250	250		25,200	
Wood										
Redhead			50	150	150	150	100		4,200	
Ring-necked										
Canvasback			10	50	100	100	50		2,170	
Scaup			100	350	350	300	300		9,800	
Goldeneye	260	260	450	450	350	250	250		29,820	
Bufflehead				25	25	50	50		1,050	
Ruddy										
Other Merganser	300	400	400	300	300	300	300		33,600	
Totals	8,560	7,110	8,460	7,325	5,575	4,400	3,900		1,186,185	
Coot:					50	70	200		2,240	

(over)

	(5)	(6)	(7)
	Total Days Use	Peak Number	Total Production
Swans			
Geese	38,220	751	20
Ducks	1,186,185	17,950	
Coots	2,240	200	

SUMMARY
Principal feeding areas <u>Grain stubble fields both adjacent to or on the Wildlife Range</u>
Principal nesting areas <u>River island and stock ponds</u>

Reported by Bob L. Burkholder, Pilot-biologist

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 Charles M. Russell NWR

MONTHS OF May TO August, 1970

(1) Species	(2) Weeks of reporting period									
	5/3-9 1	5/10-16 2	5/17-23 3	5/24-30 4	5/31-6/6 5	6/7-13 6	6/14-20 7	6/21-27 8	6/28-7/4 9	7/5-11 10
Swans:										
Whistling Trumpeter										
Geese:										
Canada	600	600	550	900	950	1,000	1,000	2,500	3,000	3,500
Cackling Brant										
White-fronted Snow	1	1	1							
Blue										
Other TOTAL	601	601	551	900	950	1,000	1,000	2,500	3,000	3,500
Ducks:										
Mallard	1,800	1,200	800	800	600	600	600	600	600	600
Black										
Gadwall	200	200	200	100	100	100	100	100	100	100
Baldpate										
Pintail	200	200	100	100	100	100	100	100	100	100
Green-winged teal	50	50	50	50	50	50	50	50	50	50
Blue-winged teal	50	50	50	50	50	50	50	50	50	50
Cinnamon teal	10	10								
Shoveler	300	300	300	300	300	300	300	300	300	300
Wood										
Redhead	100	100	50	50						
Ring-necked	25									
Canvasback	25	25								
Scaup	100	100	100	50						
Goldeneye	250	250	250	250	250	250	250	250	250	250
Bufflehead	25	25								
Ruddy										
Other Merganser	300	300	300	300	300	300	300	300	300	300
TOTAL	3,435	2,810	2,200	2,050	1,750	1,750	1,750	1,750	1,750	1,750
Coot:	250	250	200	200	150	150	150	150	150	100

3 -1750a

Cont. NR-1

(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE Charles M. Russell NWRMONTHS OF May TO August, 19 70

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen : total	
	7/12-18	7/19-25	7/26-8/1	8/2-8	8/9-15	8/16-22	8/23-29	8/30-9/5			
Swans:											
Whistling Trumpeter											
Geese:											
Canada	3,000	2,500	2,000	1,000	900	950	950	1,000	188,300	25	400
Cackling Brant											
White-fronted Snow									21		
Blue Other											
TOTAL	3,000	2,500	2,000	1,000	900	950	950	1,000	188,321	25	400
Ducks:											
Mallard	400	400	400	350	350	400	500	500	80,500	15	350
Black Gadwall											
Baldpate	75	75	75	75	100	100	100	250	15,050	4	60
Pintail								150	1,050	6	100
Green-winged teal	100	100	100	100	100	100	125	150	14,525	8	85
Blue-winged teal	50	50	50	50	50	50	500	700	14,000	3	150
Cinnamon teal	50	50	50	50	50	50	500	1,000	16,100	2	150
Shoveler								100	840	1	50
Wood	200	200	200	200	200	250	350	700	37,100	10	200
Redhead									2,100		
Ring-necked Canvasback									175		
Scaup Goldeneye								50	3,150		
Bufflehead	250	200	200	200	200	200	250	250	29,750		
Ruddy									350		
Other Merganser	300	300	300	300	300	400	800	1,200	48,300	8	80
TOTAL	1,425	1,375	1,375	1,325	1,350	1,550	3,175	5,050	263,340	57	1,225
Coot:	100	100	100	200	200	500	500	800	29,750	1	60

(over)

	(5)	(6)	(7)	SUMMARY
	Total Days Use	Peak Number	Total Production	
Swans	0	0	0	Principal feeding areas
Geese		3,500	400*	
Ducks		5,050	1,225	Principal nesting areas
Coots		800	60	

Reported by C.W. Gibbons/Rob L. Burkholder

*While total geese increased, production did not--primarily due to late spring storms.

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 Charles M. Russell NWRMonths of May to August 1970

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. Water and Marsh Birds:										
Western grebe	3	5/3	100	8-70	Still present		Unknown			100
Eared grebe	1	5/4	100	8-70	"	"	"			100
Common loon	Last period		10	7-70	"	"	"			10
Double crested cormorant	"	"	1,500	8-70	"	"	4	400	900	2,000
White pelican	"	"	500	"	"	"	Unknown			600
Great blue heron	"	"	150	"	"	"	2	20	30	200
II. Shorebirds, Gulls and Terns:										
California gull	250	5/5	6,000	8-70	Still present		Unknown			10,000
Franklin gull	50	"	1,000	7-70	"	"	"			800
Common tern	3	5/10	300	"	"	"	"			400
Killdeer	Last period		500	8-70	"	"	"			800
Long billed curlew	"	"	100	7-70	3	8/11	Unknown	30	60	150
Yellow legs	"	"	200	6-70	Still present		Unknown			200
Upland plover	1	5/20	10	7-70	"	"	"			10
Mountain plover	1	5/10	100	"	"	"	"	40	70	150

(over)

(1)	(2)		(3)	(4)	(5)		(6)
III. Doves and Pigeons:							
Mourning dove	Last period		50,000	8-70	Still present		30,000 75,000
White-winged dove							
IV. Predaceous Birds:							
Golden eagle	Last period		20	8-70	Still present		Unknown 30
Duck hawk							
Horned owl	1	5/2	4	"	"	"	8
Magpie	Last period		1,500	"	"	"	2,000
Raven							
Crow	"	"	100	"	"	"	150
Bald eagle	"	"	10	"	2	6/30	12
Marsh hawk	2	5/10	30	"	Still present		50
Sparrow hawk	1	6/5	150	"	"	"	250

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.

UPLAND GAME BIRDS

Refuge Charles M. Russell NWR Months of May to August, 1970

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'v'd.	Estimated Total		Hunting	For Re-stocking	For Research		
Ring-necked pheasant	river bottoms, farm tracts		3	-		30			200	100% increase
Sharptailed grouse	upland breaks and timbered coulees		5	-		300			3,000	moderate increase
Sage Grouse	open areas, sage-brush flats		3	-		150			2,000	no increase-population stable
Grey partridge	all cover types		2	-		100			1,000	" " " "
Merriam turkey	river bottoms and adjacent coulees		1	20		20			150	another poor production year; only 12 turkeys remain on west end of CMR.

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

- (1) SPECIES: Use correct common name.
- (2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.
- (4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.
- (5) REMOVALS: Indicate total number in each category removed during the report period.
- (6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.
- (7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

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

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

WATERFOWL

REFUGE Charles M. Russell NW Range

MONTHS OF September TO December, 19 70

(1) Species	(2) CLASS C DATA Weeks of reporting period									
	9/6-12	9/13-19	9/20-26	9/27-10/3	10/4-10	10/11-17	10/18-24	10/25-31	11/1-7	11/8-14
Swans:										
Whistling Trumpeter	2	2	2	2	2	2	2	2	2	2
Geese:										
Canada	1,500	1,500	1,000	1,200	1,500	1,120	2,500	2,215	2,400	1,000
Cackling Lesser C. Brant								80	80	
White-fronted Snow									250	150
Blue										
Other TOTAL	1,500	1,500	1,000	1,200	1,500	1,120	2,500	2,215	2,730	1,230
Ducks:										
Mallard	850	1,000	1,500	1,500	900	940	1,000	10,750	12,000	13,500
Black										
Gadwall	300	400	1,200	2,000	2,500	1,455	1,200	500	800	500
Baldpate Widgeon	150	600	1,500	2,500	3,700	1,560	800	250	1,000	400
Pintail	150	1,500	1,500	1,200	1,000	1,200	500	200	300	200
Green-winged teal	700	1,200	800	200	200	250	300	200	200	150
Blue-winged teal	1,000	2,500	1,200	800	400				100	75
Cinnamon teal	100	250	150		50				25	
Shoveler	700	2,500	2,000	1,500	1,500	1,000	800	300	500	400
Wood										
Redhead					150	120	400	300	250	350
Ring-necked					25	50	50	25	20	50
Canvasback						10	50	75	50	50
Scaup	50	150	200	200	175	155	100	100	200	300
Goldeneye	250	250	300	350	300	275	150	150	300	400
Bufflehead				25	50	110	200	50	100	100
Ruddy						25	50	150	50	75
Other Merganser	1,200					425	850	1,000	800	500
Western Grebe						115	200	200	200	100
TOTAL DUCKS	5,450	10,350	10,350	10,275	10,950	7,690	6,650	14,250	16,895	17,150
Coot:	1,000	1,300	1,400	2,500	2,500	1,570	1,000	800	300	300

3 -1750a

Cont. NR-1

(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE Charles M. Russell NW RangeMONTHS OF September TO December, 1970

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen : total
	11/15-21	11/22-28	11/29-12/5	12/6-12	12/13-19	12/20-26	12/27-1/2	18		
Swans:										
Whistling		3							21	
Trumpeter	2	2	2	2	2	2	2		238	
Geese:										
Canada	400	150	250	150	150	100	80		120,505	
Cackling Lesser C	50								1,470	
Brant										
White-fronted										
Snow									2,800	
Blue										
Other TOTAL	450	150	250	150	150	100	80		124,775	
Ducks:										
Mallard	20,000	6,000	15,000	20,000	20,000	15,000	15,000		1,084,580	
Black										
Gadwall	500	150	100						81,235	
Baldpate Widgeon	300	100	50						90,370	
Pintail	150	100	50						56,350	
Green-winged teal	100	50							30,450	
Blue-winged teal	50	20							43,015	
Cinnamon teal									4,025	
Shoveler	400	300	100	50					84,350	
Wood										
Redhead	200	100							13,090	
Ring-necked	25								1,715	
Canvasback	50								1,995	
Scaup	200	100	50	50					14,210	
Goldeneye	400	450	400	300	300	250	250		35,525	
Bufflehead	100	100	50	50					6,565	
Ruddy	100	50							3,500	
Other Merganser	500	400	400	350	250	200	200		49,525	
Western Grebe									5,705	
Coot: TOTAL DUCKS	23,075	7,920	16,200	20,800	20,550	15,450	15,450		1,606,185	
	300	150	100	100	50	50	50		94,290	

(over)

	(5)	(6)	(7)	SUMMARY
	Total Days Use	Peak Number	Total Production	
Swans	21	3		Principal feeding areas <u>Barley-wheat stubblefields</u>
Geese	124,775	2,730		<u>adjacent to GR, also alfalfa river bottoms.</u>
Ducks	1,606,185	23,075		Principal nesting areas _____
Coots	94,290	2,500		
				Reported by <u>Gibbons/Burkholder</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).

MIGRATORY BIRDS

Charles M. Russell NWR (East Unit) (other than waterfowl)
 Refuge..... Months of January to April 1957

(1) Species Common Name	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total Estimated Number
	Class Number	A Date	Class Number	D Date	Number	Date	Number Colonies	Total # Nests	Total Young	
<u>Water and Marsh Birds:</u>										
Common Loon	2	04/18	12	05/02	Still	present				
Double crested cormorant	40	04/24	500	05/02	"					
White pelican	4	05/02	100	05/02	"					
Great blue heron	1	04/10	100	05/02	"					
Eared grebe	1	04/30	40	05/02	"					
Western grebe	2	04/23	50	05/02	"					
<u>Shorebirds, Gulls and Terns:</u>										
Common snipe	20	05/01	100	05/02	Still	present				
Avocet	1	05/02	50	05/02	"					
Common tern	1	05/02	25	05/02	"					
Willet	2	05/02	100	05/02	"					
California gull	2	04/14	250	05/02	"					
Franklin gull	1	04/28	75	05/02	"					
Killdeer	1	04/23	1,000	05/02	"					

(over)

(1)	(2)		(3)		(4)		(5)			(6)
III. <u>Doves and Pigeons:</u> Mourning dove White-winged dove	2	04/19	7,500	05/12	Still	Present				
IV. <u>Predaceous Birds:</u> Golden eagle Duck hawk Horned owl Magpie XXXXX Bald Eagle Crow	2	01/07	10 25	05/02 05/02	"	"				
	3	01/10	60	04/01	"					

Reported by Charles W. Gibbons, Refuge Manager.

INSTRUCTIONS

- (1) **Species:** Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and 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 Charles M. Russell NW Range Months of September to December 1950

(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			10	11/15						20
Western grebe			200	11/15						200
White pelican			2,500	9/1						3,500
Double-crested cormorant			1,000	9/1						1,000
Great blue heron			150	9/1						150
II. Shorebirds, Gulls and Terns:										
Killdeer			1,000	9/1						1,000
Mountain plover			100	9/1						100
Upland plover			30	9/1						30
Black-bellied plover			?	?						9
California gull			200	8/20						200
Franklin gull			5,000	8/20						5,000
Common tern			500	8/20						500

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. Doves and Pigeons:					
Mourning dove		120,000	9/1		120,000
White-winged dove					
IV. Predaceous Birds:					
Golden eagle		50	11/30		50
Duck hawk		10	11/12		10
Horned owl		100	9/1		100
Magpie		1,000	9/1		1,000
Raven					
Crow		150	10/22		250
Bald eagle		15	12/31		15
Osprey		20	9/1		20
Burrowing owl		40	9/1		40
These figures are the same as last year for lack of better information.					
					Bob L. Burkholder
					Reported by.....

INSTRUCTIONS

- (1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and 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.

WATERFOWL HUNTER KILL SURV

Refuge Charles M. Russell NW Range (East Unit) - Central Flyway

Year 1967

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 3-9	4	12	Canada goose (2); Mallard (1)	3	1	4	15	15
Oct 10-16	2	4	Widgeon (2); Mallard (1)	3	2	5	10	25
Oct 17-23	5	10	Canada goose (1)	1	0	1	10	2
Oct 24-30	4	8	Mallard (2); Widgeon (1); Gadwall (2)	5	3	8	12	24
Oct 31- Nov 6	3	12	Mallard (4); Canada goose (1)	5	1	6	12	24
Nov 7-13	8	10	Mallard (6); Widgeon (1); Canada goose (3)	10	4	14	20	41
Nov 14-20	10	22	Mallard (37)	37	11	48	44	211
Nov 21-27	26	42	Mallard (65)	65	15	80	80	246
Nov 28- Dec 4	12	12	Mallard (40)	40	18	58	45	214
Dec 5-11	18	28	Mallard (68)	68	14	82	70	320
Dec 12-18	8	12	Mallard (25)	25	8	33	33	144
Dec 19-25	28	52	Mallard (74)	74	24	98	82	287
Dec 26-31	21	29	Mallard (55)	55	16	71	78	262
Totals	149	253		391	117	508	516	1815

02-8408

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

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Weeks of Hunting	No. Hunters Checked	Hunter Hours	Waterfowl Species and Nos. of Each Bagged	Total Cringing Loss	Total Kill	Total Kill	Total Kill	Total Kill
Oct 3-9	4	12	Canada Goose (3); Mallard (1)	1	1	1	1	1
Oct 10-16	5	15	Mallard (2); Widgeon (1); Canada Goose (1)	2	2	2	2	2
Oct 17-23	5	15	Mallard (6); Canada Goose (1)	1	1	1	1	1
Oct 24-30	4	12	Mallard (2); Widgeon (1); Canada Goose (1)	3	3	3	3	3
Oct 31-Nov 6	3	12	Mallard (6); Canada Goose (1)	2	2	2	2	2
Nov 7-13	8	10	Mallard (6); Widgeon (1); Canada Goose (1)	10	10	10	10	10
Nov 14-20	10	10	Mallard (2)	1	1	1	1	1
Nov 21-27	26	62	Mallard (62)	23	23	23	23	23
Nov 28-Dec 4	12	12	Mallard (6)	10	10	10	10	10
Dec 5-11	10	28	Mallard (6)	10	10	10	10	10
Dec 12-18	8	12	Mallard (2)	2	2	2	2	2
Dec 19-25	28	22	Mallard (2)	24	24	24	24	24
Dec 26-31	21	20	Mallard (2)	18	18	18	18	18
Totals	148	522		117	211	211	211	211

80348-60

Refuge/Charles M. Russell NWR/

Months of January to April, 1970

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
						Hunting	For Re- stocking	For Research		
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'vd.	Estimated Total	Percentage				Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Ring-necked Pheasant	River bottoms & farm tracts					20			150	Population increased slightly from last year.
Merriams Turkey	River bottoms and timbered breaks					30			220	Drastic decline in population due primarily to both a spring and fall hunting season coupled with poor winter survival and production on the west end.
Sharp-tailed grouse	Grass land-timber types					500			3,500	
Sage grouse	Sage-grassland					300			2,000	
Gray partridge	Grassland-timber					100			2,500	

UPLAND GAME BIRDS

Refuge Charles M. Russell NWR Months of September to December, 1970

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.
Sharp-tailed grouse	timbered breaks					500			8,000	All species continue increasing except the gray partridge and Merriam's Turkey.
Sage grouse	upland areas					250			1,600	
Ring-necked pheasant	river bottoms at head of Ft. Peck Reservoir					50			500	
Gray partridge	all cover types					100			5,000	
Merriam's turkey	Devils Creek "breaks" and Missouri River bottoms		1	25		15			100	

* 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 1970

(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	As of Dec. 31	
Mule deer	Timbered coulees - 700,000 acres	3200	400				60		40			6000	3000	42:100
White-tailed deer	River bottoms above lake and below Ft. Peck Dam	350	200				20		10			500	800	30:100
Elk	Entire north side of Wild- life Range and south side east to Carroll Coulee including all habitat types	200	175									1000	800	45:100
Antelope	Untimbered uplands		20									Use "on-off" basis - no population estimates		
Bighorn sheep	Timbered breaks - 7,000 acres	20	6				2		1			80	70	30:100

Remarks:

Reported by Bob L. Burkholder, District 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 70

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	_____	_____

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 _____

MONTHLY RECREATIONAL USE REPORT

Refuge name Charles M. Russell
State Montana

State Code 26 (1-2) Congressional District Code 02 (3-4) Refuge Code 132 (5-7) Report Yr. 70 Mo. 11 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:				On-Site Programs	22	100	40
Big Game	01	9,990	83,120	*Miscellaneous Wildlife	23	329	429
Upland Game	02	2,140	10,250				
Waterfowl	03	1,860	4,960	Swimming	24	27,290	99,920
Other Migratory	04	-	-	Boating	25	52,550	220,270
Other	05	-	-	Water Skiing	26	7,600	27,070
Bow	06	3,055	24,440	Camping	27	47,727	1,381,200
Fishing:				Group Camping	28	23	34,620
Salt Water	07	-	-	Picnicking	29	202,696	403,399
Warm Water	08	96,370	305,758	Horseback Riding	30	30	240
Cold Water	09	-	-	Bicycling	31	-	-
Environmental Education	10	40	120	Winter Sports	32	115	340
Wildlife Photography	11	12,667	12,903	Fruit, Nut and Vegetable Collecting	33	-	-
Wildlife Observation	12	67,050	36,270	*Miscellaneous Non-Wildlife	34	169,600	935,710*
Conducted Programs	13	-	-	Peak Load Day	35	14,100**	
Field Trials	14	-	-	Actual Visits	36	201,130	
Wildlife Trails	15	4,520	3,660				
Wildlife Tours/Routes	16	1,235	2,085	Fee Area Use	37		
Visitor Contact Stations	17	-	-	Number of Fee Areas	38		(14-18)
Camping (wildlife related)	18	10,766	252,646	Fee Collections	39	\$	
Picnicking (wildlife related)	19	38,240	83,175	Collection Costs	40	\$	
Wildlife Interpretive Center	20	-	-				
Off-Site Programs	21	5,060	57				

*Includes conducted tours through powerhouse
 and sightseers at Fort Peck.
 **Peak load day occurred during month of July.

Electricity	100	
Gas	100	
Water	100	
Oil	100	
Coal	100	
Wood	100	
Wind	100	
Solar	100	
Geothermal	100	
Nuclear	100	
Hydro	100	
Biomass	100	
Fossil	100	
Renewable	100	
Non-renewable	100	
Other	100	
...

Refuge Charles M. Russell Wildlife Range Year 19 70

Species	Collections and Receipts (Seeds, rootstocks, trees, shrubs)						Plantings (Marsh - Aquatic - Upland)						
	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			
Sharecropped Barley Proso Millet Winter Wheat						61 15 167	61 15 167		
								Fallow Ag. Land	50.5

No. of Permittees: Agricultural Operations 5 Haying Operations 5 Grazing Operations 20

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING	Number Animals	AUM'S	Cash Revenue	ACREAGE
Alfalfa	761	435		1. Cattle*	2,184	2,645		40,682
				2. Other				
				1. Total Refuge Acreage Under Cultivation				304
Hay - Wild	315	288		2. Acreage Cultivated as Service Operation				-

*Licenses by BLM on an "on-off" basis.

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 W Range County Garfield 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			
None									
								Fallow Ag. Land	

No. of Permittees: Agricultural Operations _____ Haying Operations _____ Grazing Operations 28

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING	Number Animals	AUM'S	Cash Revenue	ACREAGE
None				1. Cattle*	8,517	20,440		195,960**
				2. Other** Sheep	3,660	924		**
				1. Total Refuge Acreage Under Cultivation				
Hay - Wild				2. Acreage Cultivated as Service Operation				

*Licensed by BLM on an "on-off" basis. **Acreage figure reflects dual use in some cases by cattle and sheep.

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 McCone 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			
None									
								Fallow Ag. Land	

No. of Permittees: Agricultural Operations _____ Haying Operations _____ Grazing Operations 17

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING	Number Animals	AUM'S	Cash Revenue	ACREAGE
None				1. Cattle*	2,598	4,075		47,609
				2. Other				
				1. Total Refuge Acreage Under Cultivation				
Hay - Wild				2. Acreage Cultivated as Service Operation				

*Reimbursed by BLM on an "on-off" basis.

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

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

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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 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			
<u>Sharecropped Barley</u>					22		22		
								Fallow Ag. Land	

No. of Permittees: Agricultural Operations 1 Haying Operations 1 Grazing Operations 9

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING	Number Animals	AUM'S	Cash Revenue	ACREAGE
				1. Cattle*	2,446	4,660		47,795
				2. Other				
				1. Total Refuge Acreage Under Cultivation				22
Hay - Wild	115	106		2. Acreage Cultivated as Service Operation				

*Licensed by BLM on an "on/off" basis.

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

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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 Winter Wheat Alfalfa Seed (instead of second hay cutting)	22	110 bu	114	1,254 bu	60		174		
		396 bu		132 bu	132		132		
<u>Refuge Farmed</u> Corn Barley Millet Alfalfa					12 ac 14 ac 12 ac		12 14 12 12	Green needle grass Alfalfa	35 12
			12	6 ton				Fallow Ag. Land	76

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	1,640	908		1. Cattle*	1,780	12,456		175,646
				2. Other				
				1. Total Refuge Acreage Under Cultivation				356
Hay - Wild	100	91		2. Acreage Cultivated as Service Operation				50

*Licensed by BLM through State Coop. Grazing District; AUMs allotted to Range not separated out. Cattle numbers estimated based on season and AUMs.

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

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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			
Sharecropped Barley Wheat Corn	96.5 31.5	5,085 bu 943 bu	32.1	1,691 bu	10.5	630 bu	128.6 31.5 10.5		
								Fallow Ag. Land (Sharecropped)	163.8

No. of Permittees: Agricultural Operations 3 Haying Operations - Grazing Operations 6

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING	Number Animals	AUM'S	Cash Revenue	ACREAGE
Alfalfa	22	6		1. Cattle*	1,410	8,435		120,546
				2. Other				
				1. Total Refuge Acreage Under Cultivation				
Hay - Wild				2. Acreage Cultivated as Service Operation				

*Licensed by BLM through State Coop. Grazing District. AUMs allotted to Range not separated out. Cattle numbers estimated from season and licensed AUMs.

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

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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

Refuge Charles M. Russell NW Range - West Unit

Months of January through December, 19570

(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	19	37	7	4		11 bu	26	26		
Barley	590 bu		590	500	12	40	552 bu	38		38	
Crested wheat	45 bu		45			45	45 bu	-			
Western wheat	15 bu		15				0	15	15		
Winter wheat		10	10		7		7 bu	3	3		
Velvet lawn mixture	6 bu		6				0	6	6		
Oats	20 bu		20	2		18	20 bu	-			
Millet	9 bu		9				0	9	9		
Bulrush	0.5 bu		0.5				0	0.5	.5		
Sorghum	1 bu		1				0	1	1		

(8) Indicate shipping or collection points _____

(9) Grain is stored at Slippery Ann granaries.

(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.

REFUGE GRAIN REPORT

Refuge Charles M. Russell NW Range - East Unit

Months of January through December, 19570

(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	3145 bu	3015*	6160			3400	3400	2760*		2760	
Red Fortune Wheat	750 bu		750			300	300	450		450	
Proso Millet	7 bu		7		2	2	4	3	3		

*Includes 125 bushels received from Medicine Lake NW Refuge and processed into pelleted supplement for livestock.

(8) Indicate shipping or collection points _____

(9) Grain is stored at Fort. Pack _____

(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 NW Range** Year 19**70**

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
Nothing to report.								

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

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

ANNUAL REPORT OF PESTICIDE APPLICATION

Proposal Number	Reporting Year
	1970

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)
June	Broadleaf weeds	Tract 7	24	2,4-D Amine	5 gal	1½ lb a.e./ac	water 1:100	power sprayer
June	Broadleaf weeds	Road ditches	7	2,4-D Amine	1½ gal	1½ lb a.e./ac	water 1:100	power sprayer

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

In treatment areas the kill averaged an estimated 95%.

ANNUAL REPORT OF PESTICIDE APPLICATION

Proposal Number

Reporting Year

1970

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)
May 12	Fanweed, Mustard, Pigweed	2D & 2DA	44	2,4-D Amine	20 gal	2 lb/acre	1:75 water	power sprayer
May 12	" "	70D & 71D	23	"	11 gal	"	"	"
May 12	" "	62Da	27	"	12 gal	"	"	"
June 6	" "	71D (Boyun)	42	"	11 gal	1 lb/acre	"	"
June 7	" "	68D	10	"	3 gal	"	"	"

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

In all treatment areas the kill averaged an estimated 95%.

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

NARRATIVE REPORT
January - December 1970

I. GENERAL

A. Weather Conditions

Temperature extremes in Central Montana were about average. Lows were -14° at Billings and a -16° at Roundup. Moisture conditions were improved over last year which resulted in better food, cover, and water levels. Weather statistics from Billings approximate that of Halfbreed and Hailstone, while the Roundup weather covers Lake Mason, Yellow Water, War Horse, and Wild Horse.

Weather statistics listed below were obtained from the Billings Airport Station and Roundup Station:

Billings Weather Station								
	Temperature-1970		Precipitation			Snowfall		
	Max.	Min.	1968	1969	1970	1968	1969	1970
Jan	53	-14	1.22	.99	.87	13.2	12.2	9.8
Feb	58	5	.58	.17	1.10	1.6	2.0	11.3
Mar	61	-1	.66	.57	.95	6.8	5.5	7.2
Apr	75	18	1.50	1.48	3.04	12.3	3.0	22.3
May	88	33	1.79	.78	3.48	T	T	T
Jun	95	40	3.86	5.74	1.61	-	T	-
Jul	97	47	.25	1.69	.37	-	-	-
Aug	100	50	2.35	.42	.21	-	-	-
Sep	91	29	1.38	.36	1.92	T	-	4.9
Oct	83	22	.51	1.56	.93	T	10.2	T
Nov	60	-5	1.71	.66	.82	4.6	5.0	4.9
Dec	53	-6	.81	.31	.79	8.6	2.3	8.4
Totals			16.62"	14.73"	16.09"	47.1"	40.20"	68.80"

Roundup Weather Station					
	Temperature-1970		Precipitation		
	Max.	Min.	1968	1969	1970
January	52	-16	.62	.96	.44
February	65	-2	.11	.09	.72
March	60	-3	.05	.06	.18
April	79	15	.89	.87	1.47
May	89	32	2.75	.92	3.23
June	100	43	6.05	4.51	1.72
July	100	45	.89	1.79	.94
August	102	42	2.44	.42	.05
September	94	29	1.00	.38	1.92
October	88	18	.62	.95	.92
November	62	-7	.92	.12	.41
December	52	-1	.22	.11	.20
Totals			16.56"	11.18"	12.20"

B. Habitat Conditions

1. Water

Again this year excellent water levels were maintained at Halfbreed, Hailstone, Lake Mason, War Horse, and Yellow Water. Cedar Creek, the main tributary of Halfbreed, flowed all season causing water to run over the spillway. The small tributaries that supply Hailstone filled the lake to within three feet of the spillway, which is unusually high for this area. Willow Creek flowed all season again and brought Lake Mason to within six inches of the spillway crest. Water levels in Lake Mason the past three years have been excellent and should be a record considering the many years the lake was either dry or simply a mud hole. Yellow Water and War Horse, as usual, contained good water levels. Wild Horse did not fare as well as the other areas and was dry by mid-summer.

2. Food and Cover

Aquatic vegetation appeared well established and adequate in all areas except Wild Horse and Miller Lake where water levels are usually quite low. Good stands of bulrush have become established in Lake Mason during the past three years.

Grass production on the uplands was above average, but excessive livestock numbers as well as long grazing seasons left most areas in an overgrazed condition by fall. The hay lands at Halfbreed and Lake Mason produced heavy stands of grass. The grass was not cut this year at Halfbreed as the rancher is changing his operation and does not need as much hay. At Lake Mason only a small portion of the hay was cut. Next year, however, procedures will revert to a more "normal" operation and all hay will be cut.

No cereal grains or food patches are raised on any of the areas, but crops are grown in the proximity of each and utilized by migratory waterfowl in the spring and fall.

II. WILDLIFE

A. Migratory Birds

The six satellite areas were ice-free by the end of March and froze over again by the last of October. The spring migration totaled about 13,000 ducks for all areas compared with 11,000 in 1969 and 17,000 in 1968. The peak fall migration for the six satellite refuges was estimated at 65,000, compared with 35,000 birds in 1969 and 46,000 in 1968.

Duck production for the six areas totaled about 2,930 birds this year compared with 1,500 in 1969. Estimates are based on brood counts taken in July. Mallards account for most of the duck production although pintails are common at Halfbreed and Lake Mason, and baldpates at War Horse.

Coot production was about 975 between Hailstone, Halfbreed, and Lake Mason.

B. Upland Game Birds

Upland game birds found in these areas include the gray partridge, ring-necked pheasant, sharp-tailed grouse, and sage grouse. Good populations of sage grouse were noted at Halfbreed and Lake Mason. These birds seem to be increasing at Halfbreed. The pheasant population appears stable at about 60 birds for all areas. Sharp-tailed grouse are often found at Lake Mason but occur only sporadically at War Horse, Wild Horse, and Yellow Water. All upland game birds use the small refuges on an "on-off" basis. Hunting is not allowed at Halfbreed, Hailstone, and Lake Mason, but is permissible at War Horse, Wild Horse, and Yellow Water.

C. Big Game Animals

Mule deer and antelope are the only big game species present on the satellite areas. Antelope are common at Halfbreed and Lake Mason; and several sets of twins were observed at Lake Mason. Antelope numbers may have increased, but the animals use the areas on an "on-off" basis, making any census difficult. War Horse has a resident population of mule deer, numbering about 15 head. Mule deer use Wild Horse, Yellow Water, Lake Mason, Hailstone, and Halfbreed on an "on-off" basis as well.

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

The following furbearers and predators are found on the areas: Mink, muskrat, raccoon, skunk, coyote, red fox, and bobcat. No control of predators is permitted; nor is a harvest of these furbearers warranted at this time. Muskrat and mink activity has increased at Halfbreed and Lake Mason, reflecting the stable water conditions of three years. Red fox increased steadily for several years in Central Montana but their populations seem to have leveled off at this time. Skunks are the most frequently seen mammal on most of the areas.

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

Both golden and bald eagles were observed at Lake Mason, Halfbreed, War Horse, and Yellow Water. Eagles of both species no doubt frequent the other two areas, Hailstone and Wild Horse, at some time during the year. Marsh hawks, red-tailed hawks, Swainson's hawk, and sparrow hawks were observed on or near each area during the year, but no production is known to occur from these species.

F. Other Birds

About 800 eared grebe nests were counted in July on the southern portion of Lake Mason. In addition to these, both eared grebes and pied-billed grebes nest on Talhett, Halfbreed, and Hailstone Lakes.

The annual build-up of long-billed curlews at Halfbreed Refuge occurred in late August. About 200 birds were observed south of the railroad grade adjacent to the hay meadows.

G. Fish

Two of the areas support a fishery. War Horse has large mouth bass, bullheads, and suckers; while Yellow Water contains rainbow trout, bullheads, and suckers. The areas support both a sport fishery and a small commercial operation that utilizes the bullheads.

Sport fishing use is heavy, drawing fishermen from both population centers of Great Falls and Billings as well as the local traffic from all the small towns located within a 100 mile radius.

Recreation use includes sail boating, water skiing, and waterfowl hunting.

H. Reptiles

Nothing to report.

I. Disease

During the late summer months, an estimated 1,500 ducks died of botulism on Lake Mason. No die-offs were observed on any of the other areas and this is the first recorded incident of botulism at Lake Mason.

III. REFUGE DEVELOPMENT AND MAINTENANCE

A. Physical Development

No physical development was accomplished in 1970 at any of the six areas.

IV. RESOURCE MANAGEMENT

A. Grazing

The Bureau exercises little control of grazing, primarily due to the checkerboard pattern of land ownership at War Horse, Wild Horse, Yellow Water, and Lake Mason. On Halfbreed, Hailstone, and 6,000 acres of Lake Mason are under easement resulting in little control by the Bureau over land use. At Halfbreed, winter grazing and winter feeding around the lake constitute the principal land use and grass growth--and nesting cover is excellent as a result. The shoreline of Hailstone is fenced from livestock grazing because of "bad water" and adjacent vegetation is as good as the site will allow. At the Lake Mason complex, the shorelines are heavily overgrazed. The same conditions exist at Yellow Water, War Horse, and Wild Horse where the Bureau controls several unfenced land tracts adjacent to private lands.

VI. PUBLIC RELATIONS

Yellow Water and War Horse are both popular sport fishing reservoirs and public use continues to increase. Lake Mason is the only easement refuge on which public hunting is permitted. Waterfowl hunting during the season was severely curtailed as the landowners closed much of this area to trespass.

Hunting is permitted at War Horse and good duck and decoy goose hunting was reported.

Hailstone and Halfbreed hold several hundred geese in the fall and provide some excellent goose hunting opportunities in the Wheat Basin. No violations were reported from any of the areas during the year.

VII. ITEMS OF INTEREST

Further land acquisition at Lake Mason and War Horse was curtailed this year pending final outcome of boundary adjustments with the Bureau of Land Management at the Charles M. Russell National Wildlife Range. Hopefully, the Division of Realty can resume activities in these two areas at an early date.

W A T E R F O W L

REFUGE Hallstone Lake

MONTHS OF May TO August, 19 70

(1) Species	(2) Class B Data Weeks of reporting period									
	5/3-9	5/10-16	5/17-23	5/24-30	5/31-6/6	6/7-13	6/14-20	6/21-27	6/28-7/4	7/5-11
	1	2	3	4	5	6	7	8	9	10
Swans:										
Whistling Trumpeter										
Geese:										
Canada	2									
Cackling Brant										
White-fronted Snow										
Blue Other										
Ducks:										
Mallard	50	100	300	250	250	250	300	350	400	500
Black										
Gadwall	75	175	175	175	200	200	200	200	250	350
Baldpate	25	175	175	200	220	150	150	150	200	150
Pintail	225	175	150	200	200	200	200	200	250	350
Green-winged teal	100	50	100	100	75	75	75	100	125	125
Blue-winged teal	50	50	50	50	50	50	50	50	50	50
Cinnamon teal										
Shoveler	20	30	25	35	40	50	50	50	75	50
Wood										
Redhead	25	15	25	20	25	30	25	25	30	40
Ring-necked Canvasback	25	10	25	25	10	25	30	20	25	40
Scaup	100	50	10							
Goldeneye										
Bufflehead										
Ruddy										
Other										
TOTAL DUCKS	695	830	1035	1055	1070	1030	1080	1145	1405	1655
Coot:	50	100	100	150	100	100	75	50	100	100

3 -1750a

Cont. NR-1

(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE Hallstone LakeMONTHS OF May TO August, 19 70

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen : total	
	7/12-18	7/19-25	7/26-8/1	8/2-8	8/9-15	8/16-22	8/23-29	8/30-9/5			
Swans:											
Whistling Trumpeter											
Geese:											
Canada		35	25	50	100	125	175	175	4,010		
Cackling Brant											
White-fronted Snow											
Blue Other											
Ducks:											
Mallard	600	1200	1000	900	550	400	200	1000	60,200	3	104
Black Gadwall	400	500	550	200	750	300	500	200	39,900		
Baldpate	200	1000	200	150	500	250	600	1200	39,865	1	36
Pintail	350	600	500	400	500	350	350	225	37,975	1	36
Green-winged teal	175	150	200	250	250	300	350	100	18,900	1	37
Blue-winged teal	100	100	150	150	150	100	350	250	12,950		
Cinnamon teal											
Shoveler	100	250	250	250	250	200	150	150	14,175	1	20
Wood Redhead	75	100	100	100	100	100	100	50	6,895		
Ring-necked Canvasback	25	50	40	15	25	50	50	25	3,605		
Scaup Goldeneye								50	1,470		
Bufflehead											
Ruddy Other											
TOTAL DUCKS	2025	4250	2900	2415	3075	2050	2650	3250	235,935	7	233
Coot:	100	150	150	100	150	100	300	300	15,925	2	25

(over)

15% sample

	(5)	(6)	(7)	
	Total Days Use	Peak Number	Total Production	SUMMARY
Swans	:	-	-	Principal feeding areas
Geese	:	175	0	
Ducks	:	4150	233	Principal nesting areas
Coots	:	300	25	
				Reported by <u>Chas. Gibbons/Bob Burckholder</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)

WATERFOWL

REFUGE Halfbreed Lake

MONTHS OF May TO August, 19 70

(1) Species	(2) Class B Data Weeks of reporting period									
	5/3-9 1	5/10-16 2	5/17-23 3	5/24-30 4	5/31-6/6 5	6/7-13 6	6/14-20 7	6/21-27 8	6/28-7/4 9	7/5-11 10
Swans:										
Whistling Trumpeter	7	9								
Geese:										
Canada	75		10		2	5				
Cackling Brant										
White-fronted Snow										
Blue										
Other										
Ducks:										
Mallard	150	150	150	500	500	500	550	600	600	650
Black										
Gadwall	100	200	200	200	200	250	200	300	200	250
Baldpate	300	300	300	300	200	350	200	350	400	500
Pintail	50	100	100	100	150	150	200	500	500	550
Green-winged teal	200	250	250	200	250	200	200	300	400	300
Blue-winged teal	100	150	150	50	50	100	100	100	100	250
Cinnamon teal	20	20							20	25
Shoveler	50	50	100	100	100	100	100	100	100	150
Wood										
Redhead	25	25								25
Ring-necked										
Canvasback	10									
Scaup	50									
Goldeneye	20									
Bufflehead										
Ruddy										
Other										
TOTAL DUCKS	1055	1245	1250	1450	1450	1650	1550	2050	2320	2700
Coot:	250	250								

3 -1750a

Cont. NR-1

(Rev. March 1953)

WATERFOWL
(Continuation Sheet)REFUGE Halfbreed LakeMONTHS OF May TO August, 19 70

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen: total	
	7/12-18	7/19-25	7/26-8/1	8/2-8	8/9-15	8/16-22	8/23-29	8/30-9/5			
Swans:											
Whistling									94		
Trumpeter											
Geese:											
Canada		25	30	40	10	50	30	50	2,290	1	7
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard	2000	2500	2500	1500	100	700	500	200	99,050	15	460
Black											
Gadwall	400	400	400	500		100			27,300		
Baldpate	800	850	850	1000	500	1000	250	150	60,200	2	60
Pintail	1200	1400	1400	1000	250	850	200	100	64,260	5	130
Green-winged teal	300	200	200	100	200	300	500	200	31,850	1	5
Blue-winged teal	400				500	300			16,450		
Cinnamon teal	50				25	10			1,190		
Shoveler	700	750	750	800	850	700	500	500	45,500	2	60
Wood											
Redhead	100	150	150	150	150	200	100	50	7,875		
Ring-necked											
Canvasback	20	40	40					10	840		
Scaup	100	100	100	50	50	25	50	70	4,163		
Goldeneye									140		
Bufflehead											
Ruddy								25	175		
Other											
TOTAL DUCKS	6070	6590	6590	5100	2625	4185	2100	1305	358,995	25	715
Coot:	700	700	700	1000	1000	500	1500	300	48,300	15	150

(over)

20% sample

	(5)	(6)	(7)	
	Total Days Use	Peak Number	Total Production	SUMMARY
Swans	:	7	0	Principal feeding areas
Geese	:	75	7	
Ducks	:	6500	715	Principal nesting areas
Coots	:	1500	150	

Reported by Chas. Gibbons/Bob Burtholder

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)

WATERFOWL

REFUGE Lake Mead

MONTHS OF May TO August, 1970

(1) Species	(2) Class D Data									
	Weeks of reporting period									
	5/3-9 1	5/10-16 2	5/17-23 3	5/24-30 4	5/31-6/6 5	6/7-13 6	6/14-20 7	6/21-27 8	6/28-7/4 9	7/5-11 10
Swans:										
Whistling Trumpeter	7									
Geese:										
Canada	10	12	10	8						
Cackling Brant										
White-fronted Snow										
Blue Other										
Ducks:										
Mallard	450	600	1000	1000	1200	1500	1500	1500	2000	2500
Black Gadwall	1500	1500	1500	1500	1700	1700	1500	1000	1000	1000
Baldpate	300	400	500	500	500	500	800	1000	1500	1500
Pintail	1300	450	700	700	800	1000	1000	1000	1000	1000
Green-winged teal	500	500	500	500	500	500	500	500	500	500
Blue-winged teal	200	300	300	300						
Cinnamon teal	20	20								
Shoveler	350	400	500	500	800	800	800	1000	1500	1500
Wood Redhead	500	400	500	500	500	450	600	700	650	700
Ring-necked Canvasback	100	50								
Scaup Goldeneye	250	250	400	400	300	300	250	250	300	400
Bufflehead										
Ruddy			100	100	75	100	100	200	350	400
Other										
TOTAL DUCKS	5470	4870	6000	6000	6375	6850	7050	7150	8800	9500
Coot:	1000	1000	1200	1200	1200	1200	1300	1300	1200	1000

3 -1750a

Cont. NR-1
(Rev. March 1953)WATERFOWL
(Continuation Sheet)REFUGE Lake MasonMONTHS OF May TO August, 19 70

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production* Broods: Estimated seen : total	
	7/12-18	7/19-25	7/26-8/1	8/2-8	8/9-15	8/16-22	8/23-29	8/30-9/5			
Swans:											
Whistling								2	63		
Trumpeter											
Geese:											
Canada	10	25	50	100	35	100	75	125	3,920		
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard	3000	3400	3400	3700	3000	4000	4000	4000	297,850	15	473
Black											
Gadwall	900	1100	1100	1500	1500	2000	2500	2500	189,000	1	31
Baldpate	1600	1800	1800	2000	2200	2600	2800	3000	177,100	1	32
Pintail	1000	1200	1200	1500	1200	1000	1000	1700	131,250	14	451
Green-winged teal	500	500	500	500	600	600	600	1000	68,600		
Blue-winged teal						100	100	500	12,600		
Cinnamon teal									280		
Shoveler	1500	1700	1700	1700	1600	1700	1700	1800	150,850	1	31
Wood											
Redhead	800	1000	1000	1000	1000	1000	1000	1000	89,400	3	95
Ring-necked											
Canvasback	150	150	150	150	200	150	150	200	10,150		
Scaup	500	800	800	750	800	600	600	500	59,150	2	63
Goldeneye	150	150	150	150	100	100	150	100	7,350		
Bufflehead											
Ruddy	400	400	400	300	400	450	400	500	32,725		
Other											
TOTAL DUCKS	10500	12200	12200	13250	13400	14300	15000	16000	1,230,005	37	1176
Coot:	1000	2500	2500	2600	2800	2800	2800	5000	235,200	80	800

(over)

*20% sample

	(5)	(6)	(7)	
	Total Days Use	Peak Number	Total Production	SUMMARY
Swans	:	7	:	Principal feeding areas
Geese	:	125	:	
Ducks	:	16,000	:	Principal nesting areas
Coots	:	5,000	:	
				Reported by <u>Chas. Gibbons/Deb Burkholder</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).

WATERFOWL

REFUGE Near Horns Lake

MONTHS OF May TO August, 19 70

(1) Species	(2) Class D Data Weeks of reporting period									
	5/3-9 1	5/10-16 2	5/17-23 3	5/24-30 4	5/31-6/6 5	6/7-13 6	6/14-20 7	6/21-27 8	6/28-7/4 9	7/5-11 10
Swans:										
Whistling	15	12								
Trumpeter										
Geese:										
Canada	50	100	150	75	10					
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	300	500	600	600	650	700	700	700	700	700
Black										
Gadwall	1000	1200	700	500	500	500	550	600	500	350
Baldpate	1500	1200	1000	1000	1000	1000	1000	1000	1000	1000
Pintail	250	300	300	250	250	300	250	200	200	250
Green-winged teal	1000	500	700	300	200	150	150	150	150	150
Blue-winged teal	500	850	300	50	50	50	60	60	100	75
Cinnamon teal	20	10								
Shoveler	500	200	250	150	200	200	150	150	150	150
Wood										
Redhead	1500	1600	1000	800	500	500	500	250	250	250
Ring-necked										
Canvasback	300	100	100	100	50	75	25	100	50	100
Scaup	300	100	100	200	150	100	100	100	100	150
Goldeneye	50	25								
Bufflehead	50									
Ruddy	20									
Other										
TOTAL DUCKS	7200	6585	5050	3950	3950	3575	3485	3310	3200	3175
Coot:	2000	1500	1200	1000	1000	700	900	900	800	900

3 -1750a

Cont. NR-1
(Rev. March 1953)WATERFOWL
(Continuation Sheet)REFUGE War Horse LakeMONTHS OF May TO August, 19 70

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen : total	
	7/12-18	7/19-25	7/26-31	8/2-8	8/9-15	8/16-22	8/23-29	8/30-9/5			
Swans:									189		
Whistling											
Trumpeter											
Geese:											
Canada			10	15	12	23	50	10	3,550		
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard	1200	1500	1400	1500	1200	1500	1550	1500	122,500	25	460
Black											
Gadwall	300	400	450	450	450	500	1000	5000	104,650		
Baldpate	1000	1100	1500	2000	2000	2000	2500	11000	236,600	2	35
Pintail	700	800	800	700	850	850	900	1000	64,050	11	190
Green-winged teal	100	100	150	150	150	500	1000	2000	53,200		
Blue-winged teal	50	50	75					500	19,390		
Cinnamon teal									210		
Shoveler	200	220	275	350	350	350	550	1500	41,265		
Wood											
Redhead	200	150	225	500	700	750	1900	3000	102,025		
Ring-necked											
Canvasback	75	20	100	50	100	250	300	500	16,765		
Scaup	150	100	150	100	100	100	150	500	19,250		
Goldeneye		20		20	20	20	20	50	1,375		
Bufflehead									350		
Ruddy									140		
Other											
TOTAL DUCKS	3975	4460	5125	5820	5920	6820	9870	26550	781,970	38	605
Coot:	900	950	1000	1000	1200	1200	1500	10000	201,250		

(over)

40% sample

	(5)	(6)	(7)		
	Total Days Use	Peak Number	Total Production	SUMMARY	
Swans	:	15	:	0	Principal feeding areas
Geese	:	150	:	0	
Ducks	:	26,550	:	685	Principal nesting areas
Coots	:	10,000	:	no estimate	
				Reported by <u>Chas. Gibbons/Bob Durkholder</u>	

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

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- (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 Yellow Water Lake

MONTHS OF May TO August, 1970

(1) Species	(2) Weeks of reporting period									
	5/3-9	5/10-16	5/17-23	5/24-30	5/31-6/6	6/7-13	6/14-20	6/21-27	6/28-7/4	7/5-11
	1	2	3	4	5	6	7	8	9	10
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada	2	4	2	2	7	7	7	7	7	6
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	25	20	20	20	25	25	25	25	25	25
Black										
Gadwall	250	100	100	100	75	100	60	100	100	90
Baldpate	20	30	30	30	30	30				
Pintail	20	10	10	10	10	10	10	10	15	30
Green-winged teal	20	20	20	20	10	5	15	20	20	10
Blue-winged teal	5									
Cinnamon teal										
Shoveler	30	30	30	30	35	25	30	30	30	35
Wood										
Redhead										
Ring-necked										
Canvasback										
Scaup										
Goldeneye										
Bufflehead										
Ruddy										
Other										
TOTAL DUCKS:	370	230	230	230	185	215	140	185	190	200
Coot:	50	75	50	30	40	30	70	70	75	75

3 -1750a

Cont. NR-1

(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE Yellow Water LakeMONTHS OF May TO August, 19 70

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen : total	
	7/12-18	7/19-25	7/26-8/1	8/2-8	8/9-15	8/16-22	8/23-29	8/30-9/5			
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada	10	6	15	10	15	20	10	10	1,030	1	5
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard	60	75	75	70	70	100	100	200	6,965	0	30
Black											
Gadwall	100	50	150	100	125	150	150	500	16,800		20
Baldpate	75	75	75	90	90	100	100	400	8,785		
Pintail	50	50						300	3,745	1	50
Green-winged teal	30	30	30	100	50	200	350	500	9,940		
Blue-winged teal							400	500	6,335		
Cinnamon teal											
Shoveler											
Wood	100	150	150	80	75	100	150	500	11,270		20
Redhead								100	700		
Ring-necked											
Canvasback											
Scaup											
Goldeneye											
Bufflehead											
Ruddy											
Other											
TOTAL DUCKS	405	420	470	440	410	650	1250	3000	64,540	1	120
Coot:	75	75	50	100	100	110	110	1500	18,935		

(over)

10% sample

	(5)	(6)	(7)	
	Total Days Use	Peak Number	Total Production	SUMMARY
Swans	:	:	:	Principal feeding areas
Geese	:	20	5	
Ducks	:	6600	120	Principal nesting areas
Coots	:	1500	no estimate	
				Reported by <u>Chas. Gibbons/Rob Burkholder</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).

3-1751

Form NR-1A
(Nov. 1945)

MIGRATORY BIRDS

 Refuge... Hallstone, Halfbreed, (other than waterfowl)
Lake Mason Complex Months of May to August 1970

(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	15	5-10-70	150	8-70	Still present		3	50	100	150
Eared Grebe	2	"	1,000	"	"	"	3	500	800	1,000
Double crested cormorant	100	"	100	"	"	"		Unknown		300
White pelican	20	5-20-70	300	"	"	"		"		500
Great blue heron	Last period		10	"	"	"	3	4	4	15
American bittern	1	6-12-70	5	"	"	"		Unknown		10
II. Shorebirds, Gulls and Terns:										
Avocet	Last period		150	8-70	Still present			Unknown		250
California gull	20	5-10-70	300	8-70	"	"		"		500
Wilson phalarope	Last period		500	8-70	"	"		"		500
Long-billed curlew	Last period		350	8-70	100	8-20-70		"		400
Killdeer	1	5-10-70	500	8-70	Still present			"		600
Common tern	2	"	50	8-70	"	"		"		100

(over)

3-1751

Form NR-1A
(Nov. 1945)

MIGRATORY BIRDS
(other than waterfowl)

 Refuge Wild Horse, War Horse, Yellow Water Months of May to August 1967

(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	8-70	Still present		Unknown			300
Eared Grebe	40	5-10-70	500	8-70	"	"	"			600
Double crested cormorant	10	5-10-70	100	8-70	"	"	"			150
White pelican	20	5-10-70	350	8-70	"	"	"			300
Great blue heron	Last Period		10	8-70	"	"	"			15
II. Shorebirds, Gulls and Terns:										
California gull	14	5-10-70	350	8-70	Still present		Unknown			500
Long-billed curlew	Last Period		120	8-70	120	8-20-70	"			200
Killdeer	2	5-10-70	50	8-70	Still present		"			100
Wilson phalarope	Last Period		500	8-70	"	"	"			500
Avocet	Last Period		75	8-70	"	"	"			100

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. <u>Doves and Pigeons:</u>					
Mourning dove	2	5-10-70	500	8-70	Still present
White-winged dove					Unknown
					800
IV. <u>Predaceous Birds:</u>					
Golden eagle	Year round resident			5	"
Duck hawk					
Horned owl					
Magpie	3	5-10-70	50	8-70	Still present
Raven					"
Crow					"
Marsh hawk	2	5-10-70	15	8-70	"
					"
					"
					50
					25
Reported by.....					Charles V. 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.

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

- (1) SPECIES: Use correct common name.
- (2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.
- (4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.
- (5) REMOVALS: Indicate total number in each category removed during the report period.
- (6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.
- (7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

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

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

W A T E R F O W L

REFUGE Hailstone

MONTHS OF September TO December, 1970

(1) Species	(2) CLASS C DATA Weeks of reporting period									
	9/6-12 1	9/13-19 2	9/20-26 3	9/27-10/3 4	10/4-10 5	10/11-17 6	10/18-24 7	10/25-31 8	11/1-7 9	11/8-14 10
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada	175	225	200	175	-	200		-----	FROZEN	-----
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	1,000	800	850	900	950	900	500			
Black										
Gadwall	200	500	100	250	100					
Baldpate	1,200	1,000	2,000	500	350	100				
Pintail	225	200	250	225	225	200				
Green-winged teal	100	500	300	450						
Blue-winged teal	250	350	100							
Cinnamon teal										
Shoveler	150	250	200	250	200	100				
Wood										
Redhead	50	75	100	100	100	50				
Ring-necked										
Canvasback	25	30	35	25	10	10				
Scaup	50	50	50	100	60	40	20			
Goldeneye				20			10			
Bufflehead										
Ruddy										
Other										
Total Ducks	3,250	3,755	3,985	2,820	1,995	1,400	530			
Coot:	300	300	350	200	100	100				

3 -1750a

Cont. NR-1

(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE HailstoneMONTHS OF September TO December, 1970

(1) Species	(2) Weeks of reporting period							(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen : total		
	11/15-21	11/22-28	11/29-12/5	12/6-12	12/13-19	12/20-26	12/27-1/2				
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada								6,825			
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard	-----FROZEN ENTIRE PERIOD-----								41,300		
Black											
Gadwall								8,050			
Baldpate								36,050			
Pintail								9,275			
Green-winged teal								9,450			
Blue-winged teal								4,900			
Cinnamon teal											
Shoveler								8,050			
Wood											
Redhead											
Ring-necked								3,325			
Canvasback											
Scaup								945			
Goldeneye								2,590			
Bufflehead								210			
Ruddy											
Other											
Total Ducks								124,145			
Coot:								9,450			

(over)

	(5)	(6)	(7)	
	Total Days Use	Peak Number	Total Production	SUMMARY
Swans	:	:	:	Principal feeding areas
Geese	6,825	225	:	
Ducks	124,145	3,985	:	Principal nesting areas
Coots	9,450	350	:	

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 Halfbreed Lake

MONTHS OF September TO December, 1970

(1) Species	(2) CLASS C DATA Weeks of reporting period									
	9/6-12 1	9/13-19 2	9/20-26 3	9/27-10/3 4	10/4-10 5	10/11-17 6	10/18-24 7	10/25-31 8	11/1-7 9	11/8-14 10
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada	50	-	-	25	200	-	-			
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	200	250	250	500	1,700	1,500	700			
Black										
Gadwall			150			100				
Baldpate	150	300	500	300	200	300				
Pintail	100	250	350	200	100	500				
Green-winged teal	200	600	550	275	100	100				
Blue-winged teal										
Cinnamon teal										
Shoveler	500	300	350	400	100					
Wood										
Redhead	50	75	50	100	10					
Ring-necked										
Canvasback	10	20								
Scaup	70	50	60	20	10					
Goldeneye										
Bufflehead										
Ruddy	25	50								
Other										
Total Ducks	1,305	1,895	2,260	1,795	2,220	2,500	700			
Coot:	300	300	500	600	200	200				

-----FROZEN-----

3 -1750a

Cont. NR-1
(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE Halfbreed Lake

MONTHS OF September TO December, 19 70

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen : total	
	11/5-21	11/22-28	11/29-12/5	12/6-12	12/13-19	12/20-26	12/27-1/2	18			
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada								1,925			
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard	-----FROZEN ENTIRE PERIOD-----								35,700		
Black											
Gadwall								1,750			
Baldpate								12,250			
Pintail								10,500			
Green-winged teal								12,775			
Blue-winged teal											
Cinnamon teal											
Shoveler								11,550			
Wood											
Redhead								1,095			
Ring-necked											
Canvasback											
Scaup								210			
Goldeneye								1,470			
Bufflehead											
Ruddy								525			
Other											
Total Ducks								88,725			
Coot:								14,700			

(over)

	(5)	(6)	(7)	SUMMARY
	Total Days Use	Peak Number	Total Production	
Swans	:	:	:	Principal feeding areas
Geese	1,925	200	:	
Ducks	88,725	2,260	:	Principal nesting areas
Coots	14,700	600	:	
				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 Lake Mason Complex

MONTHS OF September TO December, 19 70

(1) Species	(2) CLASS C DATA Weeks of reporting period									
	9/6-12 1	9/13-19 2	9/20-26 3	9/27-10/3 4	10/4-10 5	10/11-17 6	10/18-24 7	10/25-31 8	11/1-7 9	11/8-14 10
Swans:										
Whistling Trumpeter	8						50	65	-----FROZEN-----	
Geese:										
Canada	130	130	200	250	220	40	120	160		
Cackling Brant										
White-fronted Snow										
Blue										
Other										
Ducks:										
Mallard	4,000	3,500	6,000	3,000	2,500	1,700	1,000	500		
Black										
Gadwall	2,500	3,000	3,900	4,000	4,000	3,500	500	150		
Baldpate	3,000	3,500	5,500	5,000	4,500	4,500	1,000	300		
Pintail	1,700	1,600	1,500	1,200	1,100	1,250	500			
Green-winged teal	1,000	2,500	3,000	500	600	695				
Blue-winged teal	500	1,000	100							
Cinnamon teal										
Shoveler	1,800	2,000	2,500	1,600	1,300	1,300	500	50		
Wood										
Redhead	1,000	1,500	1,500	1,400	600	500	200	150		
Ring-necked										
Canvasback	200	500	300	400	300	200				
Scaup	500	400	400	450			200	100		
Goldeneye	100	50						50		
Bufflehead								25		
Ruddy	500	750	800	300	250	200				
Other										
Total Ducks	16,800	22,300	25,500	17,850	15,150	13,845	3,900	1,325		
Coot:	5,000	6,000	6,500	4,000	2,500	2,000	300	200		

3 -1750a

Cont. NR-1
(Rev. March 1953)WATERFOWL
(Continuation Sheet)REFUGE Lake Mason ComplexMONTHS OF September TO December, 1970

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen : total	
	11/15-21	11/22-28	11/29-12/5	12/6-12	12/13-19	12/20-26	12/27-1/2				
Swans:											
Whistling								861			
Trumpeter											
Geese:											
Canada								8,750			
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard	-----FROZEN ENTIRE PERIOD-----								169,400		
Black								-			
Gadwall								150,850			
Baldpate								191,100			
Pintail								61,950			
Green-winged teal								58,065			
Blue-winged teal								11,200			
Cinnamon teal								-			
Shoveler								77,350			
Wood								-			
Redhead								47,950			
Ring-necked								-			
Canvasback								13,300			
Scaup								14,350			
Goldeneye								1,400			
Bufflehead								175			
Ruddy								19,600			
Other								-			
Total Ducks								816,690			
Coot:								185,500			

(over)

	(5)	(6)	(7)	
	Total Days Use	Peak Number	Total Production	SUMMARY
Swans	861	65		Principal feeding areas
Geese	8,750	250		
Ducks	816,690	25,500		Principal nesting areas
Coots	185,500	6,500		

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)

WATERFOWL

REFUGE War Horse Lake

MONTHS OF September TO December, 19 70

(1) Species	(2) CLASS C DATA Weeks of reporting period									
	9/6-12 1	9/13-19 2	9/20-26 3	9/27-10/3 4	10/4-10 5	10/11-17 6	10/18-24 7	10/25-31 8	11/1-7 9	11/8-14 10
Swans:										
Whistling										FROZEN
Trumpeter										
Geese:										
Canada	30	275	100	125	300	50	180	120	250	
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	1,500	1,500	1,500	2,000	1,000	800	800	200	500	
Black										
Gadwall	5,000	4,500	4,500	2,000	1,000	1,000	800	800		
Baldpate	11,000	10,000	9,500	6,000	4,000	4,000	500	300		
Pintail	1,000	1,500	1,000	1,000	500	400	100	50		
Green-winged teal	2,000	2,500	1,000	500	500					
Blue-winged teal	500	1,500	500	100						
Cinnamon teal										
Shoveler	1,500	2,000	1,000	500	500	500	50	50		
Wood										
Redhead	3,000	4,000	3,500	2,000	1,500	1,500	200			
Ring-necked										
Canvasback	500	200	350	250	300	300				
Scaup	500					500				
Goldeneye	50						50	50	75	
Bufflehead							50	25	10	
Ruddy							25	50		
Other										
Total Ducks	26,550	27,700	22,850	14,350	9,300	9,000	2,575	1,525	585	
Coot:	10,000	11,500	8,000	3,500	3,000	4,000	500	300	100	

3 -1750a

Cont. NR-1

(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE War Horse LakeMONTHS OF September TO December, 1970

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen : total	
	11/15-21	11/22-28	11/29-12/5	12/6-12	12/13-19	12/20-26	12/27-1/2	16	17	18	
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada										9,870	
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard	-----FROZEN ENTIRE PERIOD-----								68,600		
Black										-	
Gadwall										137,200	
Baldpate										317,100	
Pintail										38,850	
Green-winged teal										45,500	
Blue-winged teal										18,200	
Cinnamon teal										-	
Shoveler										42,700	
Wood										-	
Redhead										109,900	
Ring-necked										-	
Canvasback										13,300	
Scaup										7,000	
Goldeneye										1,575	
Bufflehead										595	
Ruddy										525	
Other											
Total Ducks										801,045	
Coot:										268,300	

(over)

	(5)	(6)	(7)		SUMMARY
	Total Days Use	Peak Number	Total Production		
Swans				Principal feeding areas	
Geese	9,870	300			
Ducks	801,045	27,700		Principal nesting areas	
Coots	268,300	11,500			

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

MONTHS OF September TO December, 19

(1) Species	(2) CLASS C DATA Weeks of reporting period									
	9/6-12 1	9/13-19 2	9/20-26 3	9/26-10/3 4	10/4-10 5	10/11-17 6	10/18-24 7	10/25-31 8	11/1-7 9	11/8-14 10
Swans:										
Whistling								10% FROZEN		FROZEN
Trumpeter										
Geese:										
Canada	10	15	5	20	25	30				
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	200	1,000	900	1,000	800	700	500	300	400	
Black										
Gadwall	500	700	1,000	2,500	1,500	2,000	1,000	100		
Baldpate	400	400	500	500	1,000	1,000	500	50		
Pintail	300	500	400	400	350	300				
Green-winged teal	500	1,000	500	100	100	100				
Blue-winged teal	500	700								
Cinnamon teal										
Shoveler	500	600	650	650	650	600	100			
Wood										
Redhead	100	150	200	200	250	300	200	100		
Ring-necked										
Canvasback		20	30	50						
Scaup			100	50	75	100	75	50		
Goldeneye									50	
Bufflehead							50	20		
Ruddy										
Other										
Total Ducks	3,000	5,070	4,280	5,450	4,725	5,100	2,425	620	450	
Coot:	1,500	2,000	2,500	2,500	3,500	5,000	200	200		

3 -1750a

Cont. NR-1
(Rev. March 1953)WATERFOWL
(Continuation Sheet)REFUGE Yellow WaterMONTHS OF September TO December, 19 70

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen : total	
	11/15-21	11/22-28	11/29-12/5	12/6-12	12/13-19	12/20-26	12/27-1/2	18			
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada								735			
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard	-----FROZEN ENTIRE PERIOD-----								40,600		
Black											
Gadwall											
Baldpate								65,300			
Pintail								30,450			
Green-winged teal								15,750			
Blue-winged teal								16,100			
Cinnamon teal								8,400			
Shoveler											
Wood								26,250			
Redhead											
Ring-necked								10,500			
Canvasback											
Scaup								700			
Goldeneye								3,150			
Bufflehead								350			
Ruddy								400			
Other											
Total Ducks								217,840			
Coot:								121,800			

(over)

	(5)	(6)	(7)	SUMMARY
	Total Days Use	Peak Number	Total Production	
Swans				Principal feeding areas
Geese	735	30		
Ducks	217,840	5,000		Principal nesting areas
Coots	121,800	5,450		
				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).

3-1751

Form NR-1A
(Nov. 1945)MIGRATORY BIRDS
(other than waterfowl)Refuge CHR SATELLITESMonths of September to December 1957

(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	Previous Periods		No Data Available							300
Hared Grebe										1,000
Double-crested Cormorant										300
White Pelican										350
Great blue Heron										20
American Bittern										5
II. Shorebirds, Gulls and Terns:										
Avocet	Previous Periods		No Data Available							250
Longbill Curlew										250
California Gull										1,000
Wilson Phalarope										300
Killdeer										600
Common Tern										100

(over)

UPLAND GAME BIRDS

Refuge CMR Satellites Months of September to December, 19 70

* 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 & Halfbreed</u>										
Sage Grouse										
Pheasant										
Grey Partridge										
Lake Mason										
Sharp-tailed Grouse										
Sage Grouse										
Pheasant										
Grey Partridge										
War Horse										
Sage Grouse										
Wild Horse										
Sage Grouse										
Yellow Water										
Sage Grouse										
									50	
									20	
									45	
									15	
									50	
									50	
									50	
									65	
									60	
									50	

Used mostly on a "on-off" basis.

(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.	(A) SEX	(B) YOUNG	(C) DENSITY	(1) SPECIES
(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 Satellite Areas - CMR

Calendar Year 1970

(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	As of Dec. 31		
Antelope												250	75	
Mule deer												40	25	

Remarks:

Antelope and mule deer are the only big game species associated with these areas and they use them on a "on-off" basis. No surveys are conducted to determine the population status.

Reported by Bob L. Burkholder

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 Lake Mason NW Refuge*Year 19 70

Botulism

Lead Poisoning or other Disease

Period of outbreak July - AugustKind of disease nonePeriod of heaviest losses mid-July

Species affected _____

Losses:

	Actual Count	Estimated
(a) Waterfowl	<u>60</u>	<u>1500</u>
(b) Shorebirds	<u>none</u>	<u>?</u>
(c) Other	<u>none</u>	<u>?</u>

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

Number Hospitalized	No. Recovered	% Recovered
(a) Waterfowl	<u>none</u>	_____
(b) Shorebirds	_____	_____
(c) Other	_____	_____

Number Recovered _____

(a) Waterfowl	<u>none</u>	_____
(b) Shorebirds	_____	_____
(c) Other	_____	_____

Number lost _____

Areas affected (location and approximate acreage) _____

Water conditions _____

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

Food conditions _____

Water was receding from a higher than normal level.Condition of vegetation and invertebrate life normal

Remarks _____

*Remarks Botulism was not noted at other satellite areas.

3-1758

Form NR-8

(Rev. Jan. 1956)

Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Hailstone, Halfbreed, Lake Mason,

Refuge War Horse, Wild Horse & Yellow Water County Stillwater, Musselshell State Montana
& Petroleum

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			
None									
								Fallow Ag. Land	

No. of Permittees: Agricultural Operations _____ Haying Operations _____ Grazing Operations 13

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING	Number Animals	AUM'S	Cash Revenue	ACREAGE	
				1. Cattle	1761*	4105	\$2688.42	14,421	
				2. Other					
				1. Total Refuge Acreage Under Cultivation					
Hay - Wild				2. Acreage Cultivated as Service Operation					

*On-off situation - cattle numbers estimate based on licensed AUMs by BLM

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.

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

W A T E R F O W L

REFUGE Charles M. Russell NWR

MONTHS OF May TO August, 1970

(1) Species	(2) Weeks of reporting period									
	5/3-9 1	5/10-16 2	5/17-23 3	5/24-30 4	5/31-6/6 5	6/7-13 6	6/14-20 7	6/21-27 8	6/28-7/4 9	7/5-11 10
Swans:										
Whistling Trumpeter										
Geese:										
Canada	600	600	550	900	950	1,000	1,000	2,500	3,000	3,500
Cackling Brant										
White-fronted	1	1	1							
Snow										
Blue										
Other TOTAL	601	601	551	900	950	1,000	1,000	2,500	3,000	3,500
Ducks:										
Mallard	1,800	1,200	800	800	600	600	600	600	600	600
Black										
Gadwall	200	200	200	100	100	100	100	100	100	100
Baldpate										
Pintail	200	200	100	100	100	100	100	100	100	100
Green-winged teal	50	50	50	50	50	50	50	50	50	50
Blue-winged teal	50	50	50	50	50	50	50	50	50	50
Cinnamon teal	10	10								
Shoveler	300	300	300	300	300	300	300	300	300	300
Wood										
Redhead	100	100	50	50						
Ring-necked	25									
Canvasback	25	25								
Scaup	100	100	100	50						
Goldeneye	250	250	250	250	250	250	250	250	250	250
Bufflehead	25	25								
Ruddy										
Other Merganser	300	300	300	300	300	300	300	300	300	300
TOTAL	3,435	2,810	2,200	2,050	1,750	1,750	1,750	1,750	1,750	1,750
Coot:	250	250	200	200	150	150	150	150	150	100

3 -1750a

Cont. NR-1

(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE Charles M. Russell NWRMONTHS OF May TO August, 1970

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen : total	
	7/12-18	7/19-25	7/26-8/1	8/2-8	8/9-15	8/16-22	8/23-29	8/30-9/5			
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada	3,000	2,500	2,000	1,000	900	950	950	1,000	188,300	25	400
Cackling											
Brant											
White-fronted									21		
Snow											
Blue											
Other TOTAL	3,000	2,500	2,000	1,000	900	950	950	1,000	188,321	25	400
Ducks:											
Mallard	400	400	400	350	350	400	500	500	80,500	15	350
Black											
Gadwall	75	75	75	75	100	100	100	250	15,050	4	60
Baldpate								150	1,050	6	100
Pintail	100	100	100	100	100	100	125	150	14,525	8	85
Green-winged teal	50	50	50	50	50	50	500	700	14,000	3	150
Blue-winged teal	50	50	50	50	50	50	500	1,000	16,100	2	150
Cinnamon teal								100	840	1	50
Shoveler	200	200	200	200	200	250	350	700	37,100	10	200
Wood											
Redhead									2,100		
Ring-necked									175		
Canvasback									350		
Scaup							50	50	3,150		
Goldeneye	250	200	200	200	200	200	250	250	29,750		
Bufflehead									350		
Ruddy											
Other Merganser	300	300	300	300	300	400	800	1,200	48,300	8	80
TOTAL	1,425	1,375	1,375	1,325	1,350	1,550	3,175	5,050	263,340	57	1,225
Coot:	100	100	100	200	200	500	500	800	29,750	1	60

(over)

	(5)	(6)	(7)	
	Total Days Use	Peak Number	Total Production	SUMMARY
Swans	0	0	0	Principal feeding areas
Geese	3,500	400*		
Ducks	5,050	1,225		Principal nesting areas
Coots	800	60		

Reported by C.W. Gibbons/Bob L. Burkholder

*While total geese increased, production did not--primarily due to late spring storms.

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 Charles M. Russell NWR

Months of May to August 1957

(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	3	5/3	100	8-70	Still present		Unknown			100
Eared grebe	1	5/4	100	8-70	"	"	"			100
Common loon	Last period		10	7-70	"	"	"			10
Double crested cormorant	"	"	1,500	8-70	"	"	4	400	900	2,000
White pelican	"	"	500	"	"	"	Unknown			600
Great blue heron	"	"	150	"	"	"	2	20	30	200
II. Shorebirds, Gulls and Terns:										
California gull	250	5/5	6,000	8-70	Still present		Unknown			10,000
Franklin gull	50	"	1,000	7-70	"	"	"			800
Common tern	3	5/10	300	"	"	"	"			400
Killdeer	Last period		500	8-70	"	"	"			800
Long billed curlew	"	"	100	7-70	3	8/11		30	60	150
Yellow legs	"	"	200	6-70	Still present		Unknown			200
Upland plover	1	5/20	10	7-70	"	"	"			10
Mountain plover	1	5/10	100	"	"	"		40	70	150

(over)

(1)	(2)		(3)	(4)	(5)	(6)
III. Doves and Pigeons:						
Mourning dove	Last	period	50,000	8-70	Still present	30,000 75,000
White-winged dove						
IV. Predaceous Birds:						
Golden eagle	Last	period	20	8-70	Still present	Unknown 30
Duck hawk						
Horned owl	1	5/2	4	"	" "	" 8
Magpie	Last	period	1,500	"	" "	" 2,000
Raven						
Crow	"	"	100	"	" "	" 150
Bald eagle	"	"	10	"	2, 6/30	" 12
Marsh hawk	2	5/10	30	"	Still present	" 50
Sparrow hawk	1	6/5	150	"	" "	" 250

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.

UPLAND GAME BIRDS

Refuge Charles M. Russell NWR Months of May to August, 19470

(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.
Ring-necked pheasant	river bottoms, farm tracts		3	-		30			200	100% increase
Sharptailed grouse	upland breaks and timbered coulees		5	-		300			3,000	moderate increase
Sage Grouse	open areas, sage- brush flats		3	-		150			2,000	no increase-population stable
Grey partridge	all cover types		2	-		100			1,000	" " " "
Merriam turkey	river bottoms and adjacent coulees		1	20		20			150	another poor production year; only 12 turkeys remain on west end of GMR.

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.

W A T E R F O W L

REFUGE Charles M. Russell NW Range

MONTHS OF September TO December, 1970

(1) Species	(2) CLASS C DATA									
	Weeks of reporting period									
	9/6-12 1	9/13-19 2	9/20-26 3	9/27-10/3 4	10/4-10 5	10/11-17 6	10/18-24 7	10/25-31 8	11/1-7 9	11/8-14 10
Swans:										
Whistling Trumpeter	2	2	2	2	2	2	2	2	2	2
Geese:										
Canada	1,500	1,500	1,000	1,200	1,500	1,120	2,500	2,215	2,400	1,000
Cackling Lesser C.									80	80
Brant										
White-fronted										
Snow									250	150
Blue										
Other TOTAL	1,500	1,500	1,000	1,200	1,500	1,120	2,500	2,215	2,730	1,230
Ducks:										
Mallard	850	1,000	1,500	1,500	900	940	1,000	10,750	12,000	13,500
Black										
Gadwall	300	400	1,200	2,000	2,500	1,455	1,200	500	800	500
Baldpate Widgeon	150	600	1,500	2,500	3,700	1,560	800	250	1,000	400
Pintail	150	1,500	1,500	1,200	1,000	1,200	500	200	300	200
Green-winged teal	700	1,200	800	200	200	250	300	200	200	150
Blue-winged teal	1,000	2,500	1,200	800	400				100	75
Cinnamon teal	100	250	150		50				25	
Shoveler	700	2,500	2,000	1,500	1,500	1,000	800	300	500	400
Wood										
Redhead					150	120	400	300	250	350
Ring-necked					25	50	50	25	20	50
Canvasback						10	50	75	50	50
Scaup	50	150	200	200	175	155	100	100	200	300
Goldeneye	250	250	300	350	300	275	150	150	300	400
Bufflehead				25	50	110	200	50	100	100
Ruddy						25	50	150	50	75
Other Merganser	1,200					425	850	1,000	800	500
Western Grebe						115	200	200	200	100
TOTAL DUCKS	5,450	10,350	10,350	10,275	10,950	7,690	6,650	14,250	16,895	17,150
Coot:	1,000	1,300	1,400	2,500	2,500	1,570	1,000	800	300	300

3 -1750a

Cont. NR-1

(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE Charles M. Russell NW RangeMONTHS OF September TO December, 1970

(1) Species	(2) Weeks of reporting period								(3) Estimated	(4) Production	
	11/15-21	11/22-28	11/29-12/5	12/6-12	12/13-19	12/20-26	12/27-1/2	waterfowl	Broods:	Estimated	
	11	12	13	14	15	16	17	18	days use	seen	total
Swans:									21		
Whistling		3									
Trumpeter	2	2	2	2	2	2	2		238		
Geese:											
Canada	400	150	250	150	150	100	80		120,505		
Cackling Lesser C	50								1,470		
Brant											
White-fronted											
Snow									2,800		
Blue											
Other TOTAL	450	150	250	150	150	100	80		124,775		
Ducks:											
Mallard	20,000	6,000	15,000	20,000	20,000	15,000	15,000		1,084,580		
Black											
Gadwall	500	150	100						81,235		
Baldpate Widgeon	300	100	50						90,370		
Pintail	150	100	50						56,350		
Green-winged teal	100	50							30,450		
Blue-winged teal	50	20							43,015		
Cinnamon teal									4,025		
Shoveler	400	300	100	50					84,350		
Wood											
Redhead	200	100							13,090		
Ring-necked	25								1,715		
Canvasback	50								1,995		
Scaup	200	100	50	50					14,210		
Goldeneye	400	450	400	300	300	250	250		35,525		
Bufflehead	100	100	50	50					6,545		
Ruddy	100	50							3,500		
Other Merganser	500	400	400	350	250	200	200		49,525		
Western Grebe									5,705		
Coot: TOTAL DUCKS	23,075	7,920	16,200	20,800	20,550	15,450	15,450		1,606,185		
	300	150	100	100	50	50	50		94,290		

(over)

	(5)	(6)	(7)	SUMMARY
	Total Days Use	Peak Number	Total Production	
Swans	21	3		Principal feeding areas Barley-wheat stubblefields
Geese	124,775	2,730		adjacent to CMR, also alfalfa river bottoms.
Ducks	1,606,185	23,075		Principal nesting areas
Coots	94,290	2,500		
				Reported by Gibbons/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).

3-1751

Form NR-1A
(Nov. 1945)

MIGRATORY BIRDS

(other than waterfowl)

Refuge Charles M. Russell NW Range Months of September to December 1957

(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			10	11/15						20
Western grebe			200	11/15						200
White pelican			2,500	9/1						3,500
Double-crested cormorant			1,000	9/1						1,000
Great blue heron			150	9/1						150
II. Shorebirds, Gulls and Terns:										
Killdeer			1,000	9/1						1,000
Mountain plover			100	9/1						100
Upland plover			30	9/1						30
Black-bellied plover			?	?						9
California gull			200	8/20						200
Franklin gull			5,000	8/20						5,000
Common tern			500	8/20						500

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. <u>Doves and Pigeons:</u>					
Mourning dove		120,000	9/1		120,000
White-winged dove					
IV. <u>Predaceous Birds:</u>					
Golden eagle		50	11/30		50
Duck hawk		10	11/12		10
Horned owl		100	9/1		100
Magpie		1,000	9/1		1,000
Raven					
Crow		150	10/22		250
Bald eagle		15	12/31		15
Osprey		20	9/1		20
Burrowing owl		40	9/1		40
These figures are the same as last year for lack of better information.					
Reported by Bob L. Burkholder					

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.

WATERFOWL HUNTER KILL SUR :

Refuge Charles M. Russell NW Range (East Unit) - Central Flyway

Year 19670

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 3- 9	4	12	Canada goose (2); Mallard (1)	3	1	4	15	15
Oct 10-16	2	4	Widgeon (2); Mallard (1)	3	2	5	10	25
Oct 17-23	5	10	Canada goose (1)	1	0	1	10	2
Oct 24-30	4	8	Mallard (2); Widgeon (1); Gadwall (2)	5	3	8	12	24
Oct 31- Nov 6	3	12	Mallard (4); Canada goose (1)	5	1	6	12	24
Nov 7-13	8	10	Mallard (6); Widgeon (1); Canada goose (3)	10	4	14	20	41
Nov 14-20	10	22	Mallard (37)	37	11	48	44	211
Nov 21-27	26	42	Mallard (65)	65	15	80	80	246
Nov 28- Dec 4	12	12	Mallard (40)	40	18	58	45	214
Dec 5-11	18	28	Mallard (68)	68	14	82	70	320
Dec 12-18	8	12	Mallard (25)	25	8	33	38	144
Dec 19-25	28	52	Mallard (74)	74	24	98	82	287
Dec 26-31	21	29	Mallard (55)	55	16	71	78	262
Totals	149	253		391	117	508	516	1815

(over)

INSTRUCTIONS

Year 1970

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Weeks of Hunting	No. Hunters Checked	Hours	Waterfowl Species and Nos. of Each Bagged	Total Bagged	Crippling Loss	Total Kill	Est. No. of Hunters	Est. Total Kill
Oct 3-9	4	12	Canada goose (2); Mallard (1)	3	1	4	12	12
Oct 10-16	3	10		2	2	4	10	10
Oct 17-23	3	10		2	2	4	10	10
Oct 24-30	4	8	Mallard (2); Widgeon (1); Gadwall (2)	5	3	8	12	12
Oct 31 - Nov 6	3	12	Mallard (4); Canada goose (1)	5	1	6	12	12
Nov 7-13	8	10	Mallard (2); Widgeon (1); Canada goose (3)	10	1	11	20	20
Nov 14-20	10	22	Mallard (37)	37	11	48	44	44
Nov 21-27	26	42	Mallard (62)	62	12	80	80	80
Nov 28 - Dec 4	12	12	Mallard (40)	40	18	58	44	44
Dec 5-11	13	28	Mallard (68)	68	14	82	70	70
Dec 12-18	8	12	Mallard (25)	25	8	33	38	38
Dec 19-25	26	22	Mallard (74)	74	24	98	88	88
Dec 26-31	21	20	Mallard (52)	52	16	68	78	78
Totals	140	252		391	117	508	220	1912

80348-60

UPLAND GAME BIRDS

Refuge Charles M. Russell NWR Months of September to December, 19 70

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'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	timbered breaks				500			8,000	All species continue increasing except the gray partridge and Merriam's Turkey.
Sage grouse	upland areas				250			1,600	
Ring-necked pheasant	river bottoms at head of Ft. Peck Reservoir				50			500	
Gray partridge	all cover types				100			5,000	
Merriam's turkey	Devils Creek "breaks" and Missouri River bottoms		1 25		15			100	

* 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 1970

(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	
Common Name	Cover types, total Acreage of Habitat	Number												
Mule deer	Timbered coulees - 700,000 acres	3200	600				60		40			6000	3000	42:100
White-tailed deer	River bottoms above lake and below Ft. Peck Dam	350	200				20		10			500	800	30:100
Elk	Entire north side of Wild- life Range and south side east to Carroll Coulee including all habitat types	200	175									1000	800	45:100
Antelope	Untimbered uplands		20									Use "on-off" basis - no population estimates		
Bighorn sheep	Timbered breaks - 7,000 acres	20	6				2		1			80	70	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 70

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	_____	_____

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 _____

Bureau of Sport Fisheries and Wildlife
Division of Wildlife Refuges

ANNUAL
~~MONTHLY~~ RECREATIONAL USE REPORT *

Refuge name
Charles M. Russell NWR
State
Montana

State Code 26 (1-2) Congressional District Code 02 (3-4) Refuge Code 132 (5-7) Report Yr. 70 Mo. 11 (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:				On-Site Programs	22	100	40
Big Game	01	9,990	83,120	*Miscellaneous Wildlife	23	329	429
Upland Game	02	2,140	10,250				
Waterfowl	03	1,860	4,960	Swimming	24	27,290	99,920
Other Migratory	04	-	-	Boating	25	52,550	220,270
Other	05	-	-	Water Skiing	26	7,600	27,070
Bow	06	3,055	24,440	Camping	27	47,727	1,381,200
Fishing:				Group Camping	28	23	34,620
Salt Water	07	-	-	Picnicking	29	202,696	403,390
Warm Water	08	98,379	305,758	Horseback Riding	30	30	240
Cold Water	09	-	-	Bicycling	31	-	-
Environmental Education	10	40	120	Winter Sports	32	115	340
Wildlife Photography	11	12,667	12,903	Fruit, Nut and Vegetable Collecting	33	-	-
Wildlife Observation	12	67,050	36,270	*Miscellaneous Non-Wildlife	34	69,600	935,710*
Conducted Programs	13	-	-	Peak Load Day	35	14,100**	
Field Trials	14	-	-	Actual Visits	36	201,130	
Wildlife Trails	15	4,520	3,660				
Wildlife Tours/Routes	16	1,235	2,085	Fee Area Use	37		
Visitor Contact Stations	17	-	-	Number of Fee Areas	38		(14-18)
Camping (wildlife related)	18	10,766	252,646	Fee Collections	39	\$	
Picnicking (wildlife related)	19	38,240	83,175	Collection Costs	40	\$	
Wildlife Interpretive Center	20	-	-				
Off-Site Programs	21	5,060	57				

Form 3-123

(Revised July 1969)

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

*Summary of monthly reports.

*Includes conducted tours through powerhouse
 and sightseers at Fort Peck.
 **Peak load day occurred during month of July.

Month	Day	Load (MW)	Notes
July	1	18	
July	2	20	
July	3	18	
July	4	20	
July	5	18	
July	6	20	
July	7	18	
July	8	20	
July	9	18	
July	10	20	
July	11	18	
July	12	20	
July	13	18	
July	14	20	
July	15	18	
July	16	20	
July	17	18	
July	18	20	
July	19	18	
July	20	20	
July	21	18	
July	22	20	
July	23	18	
July	24	20	
July	25	18	
July	26	20	
July	27	18	
July	28	20	
July	29	18	
July	30	20	
July	31	18	
August	1	20	
August	2	18	
August	3	20	
August	4	18	
August	5	20	
August	6	18	
August	7	20	
August	8	18	
August	9	20	
August	10	18	
August	11	20	
August	12	18	
August	13	20	
August	14	18	
August	15	20	
August	16	18	
August	17	20	
August	18	18	
August	19	20	
August	20	18	
August	21	20	
August	22	18	
August	23	20	
August	24	18	
August	25	20	
August	26	18	
August	27	20	
August	28	18	
August	29	20	
August	30	18	
August	31	20	

Refuge Charles M. Russell NW Range Year 19 70

Species	Collections and Receipts (Seeds, rootstocks, trees, shrubs)					Plantings (Marsh - Aquatic - Upland)							
	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			
Sharecropped Barley Proso Millet Winter Wheat					61 15 167		61 15 167		
								Fallow Ag. Land	50.5

No. of Permittees: Agricultural Operations 5 Haying Operations 5 Grazing Operations 20

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING	Number Animals	AUM'S	Cash Revenue	ACREAGE
Alfalfa	761	435		1. Cattle*	2,184	2,645		40,682
				2. Other				
				1. Total Refuge Acreage Under Cultivation				304
Hay - Wild	315	288		2. Acreage Cultivated as Service Operation				-

*Licenses by BLM on an "on-off" basis.

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 Garfield 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			
None									
								Fallow Ag. Land	

No. of Permittees: Agricultural Operations _____ Haying Operations _____ Grazing Operations 28

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING	Number Animals	AUM'S	Cash Revenue	ACREAGE
None				1. Cattle*	8,517	20,440		195,960**
				2. Other** Sheep	5,660	924		**
				1. Total Refuge Acreage Under Cultivation				
Hay - Wild				2. Acreage Cultivated as Service Operation				

*Licensed by BLM on an "on-off" basis. **Acreage figure reflects dual use in some cases by cattle and sheep.

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 McGone 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			
None									
								Fallow Ag. Land	

No. of Permittees: Agricultural Operations _____ Haying Operations _____ Grazing Operations 17

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING	Number Animals	AUM'S	Cash Revenue	ACREAGE
None				1. Cattle*	2,598	4,075		47,609
				2. Other				
				1. Total Refuge Acreage Under Cultivation				
Hay - Wild				2. Acreage Cultivated as Service Operation				

*Licensed by BLM on an "on-off" basis.

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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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 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			
<u>Sharecropped Barley</u>					22		22		
								Fallow Ag. Land	

No. of Permittees: Agricultural Operations 1 Haying Operations 1 Grazing Operations 9

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING	Number Animals	AUM'S	Cash Revenue	ACREAGE
				1. Cattle*	2,446	4,660		47,795
				2. Other				
				1. Total Refuge Acreage Under Cultivation				22
Hay - Wild	115	106		2. Acreage Cultivated as Service Operation				

*Licensed by BLM on an "on-off" basis.

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.

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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	110 bu	114	1,254 bu	60		174		
Winter Wheat					132		132		
Alfalfa Seed (instead of second hay cutting)		396 bu		132 bu					
<u>Refuge Farmed</u>									
Corn					12 ac		12		
Barley					14 ac		14	Green needle grass	35
Millet					12 ac		12	Alfalfa	12
Alfalfa			12	6 ton			12		
								Fallow Ag. Land	76

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	1,640	908		1. Cattle*	1,780	12,456		175,646
				2. Other				
				1. Total Refuge Acreage Under Cultivation				356
Hay - Wild	100	91		2. Acreage Cultivated as Service Operation				50

*Licensed by BLM through State Coop. Grazing District; AUMs allotted to Range not separated out. Cattle numbers estimated based on season and AUMs.

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 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			
Sharecropped									
Barley	96.5	5,085 bu	32.1	1,691 bu			128.6		
Wheat	31.5	945 bu					31.5		
Corn					10.5	630 bu	10.5		
								Fallow Ag. Land (Sharecropped)	163.8

No. of Permittees: Agricultural Operations 3 Haying Operations - Grazing Operations 6

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING	Number Animals	AUM'S	Cash Revenue	ACREAGE
Alfalfa	22	6		1. Cattle*	1,410	8,435		120,546
				2. Other				
				1. Total Refuge Acreage Under Cultivation				
Hay - Wild				2. Acreage Cultivated as Service Operation				

*Licensed by BLM through State Coop. Grazing District. AUMs allotted to Range not separated out. Cattle numbers estimated from season and licensed AUMs.

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

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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

Refuge Charles M. Russell NW Range - West Unit

Months of January through December, 195⁷⁰

(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	19	37	7	4		11 bu	26	26		
Barley	590 bu		590	500	12	40	552 bu	38		38	
Crested Wheat	45 bu		45			45	45 bu	-			
Western Wheat	15 bu		15				0	15	15		
Winter Wheat		10	10		7		7 bu	3	3		
Velvet lawn mixture	6 bu		6				0	6	6		
Oats	20 bu		20	2		18	20 bu	-			
Millet	9 bu		9				0	9	9		
Bulrush	0.5 bu		0.5				0	0.5	.5		
Sorghum	1 bu		1				0	1	1		

(8) Indicate shipping or collection points _____

(9) Grain is stored at Slippery Ann granaries.

(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.

REFUGE GRAIN REPORT

Refuge Charles M. Russell NW Range - East Unit

Months of January through December, 1970

(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	3145 bu	3015*	6160			3400	3400	2760*		2760	
Red Fortune Wheat	750 bu		750			300	300	450		450	
Proso Millet	7 bu		7		2	2	4	3	3		

*Includes 125 bushels received from Medicine Lake NW Refuge and processed into pelleted supplement for livestock.

(8) Indicate shipping or collection points _____

(9) Grain is stored at Fort Peck _____

(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 NW Range Year 19~~6~~70

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
Nothing to report.								

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

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

ANNUAL REPORT OF PESTICIDE APPLICATION

Proposal Number	Reporting Year
	1970

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)
June	Broadleaf weeds	Tract 7	24	2,4-D Amine	5 gal	1½ lb a.e./ac	water 1:100	power sprayer
June	Broadleaf weeds	Road ditches	7	2,4-D Amine	1½ gal	1½ lb a.e./ac	water 1:100	power sprayer

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

In treatment areas the kill averaged an estimated 95%.

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

W A T E R F O W L

REFUGE Hailstone Lake

MONTHS OF May TO August, 19 70

(1) Species	(2) Class D Data									
	Weeks of reporting period									
	5/3-9	5/10-16	5/17-23	5/24-30	5/31-6/6	6/7-13	6/14-20	6/21-27	6/28-7/4	7/5-11
	1	2	3	4	5	6	7	8	9	10
Swans:										
Whistling Trumpeter										
Geese:										
Canada	2									
Cackling Brant										
White-fronted Snow										
Blue Other										
Ducks:										
Mallard	50	100	300	250	250	250	300	350	400	500
Black										
Gadwall	75	175	175	175	200	200	200	200	250	350
Baldpate	25	175	175	200	220	150	150	150	200	150
Pintail	225	175	150	200	200	200	200	200	250	350
Green-winged teal	100	50	100	100	75	75	75	100	125	125
Blue-winged teal	50	50	50	50	50	50	50	50	50	50
Cinnamon teal										
Shoveler	20	30	25	35	40	50	50	50	75	50
Wood										
Redhead	25	15	25	20	25	30	25	25	30	40
Ring-necked Canvasback	25	10	25	25	10	25	30	20	25	40
Scaup	100	50	10							
Goldeneye										
Bufflehead										
Ruddy										
Other										
TOTAL DUCKS	695	830	1035	1055	1070	1030	1080	1145	1405	1655
Coot:	50	100	100	150	100	100	75	50	100	100

3 -1750a

Cont. NR-1

(Rev. March 1953)

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

REFUGE Hailstone LakeMONTHS OF May TO August, 19 70

(1) Species	(2) Class D Data Weeks of reporting period								(3) Estimated	(4) Production	
	7/12-18	7/19-25	7/26-8/1	8/2-8	8/9-15	8/16-22	8/23-29	8/30-9/5	waterfowl	Broods:Estimated	seen: total
Species	11	12	13	14	15	16	17	18	days use		
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada		35	25	50	100	125	175	175	4,810		
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard	600	1200	1000	900	550	400	200	1000	60,200	3	104
Black											
Gadwall	400	800	550	200	750	300	500	200	39,900		
Baldpate	200	1000	200	150	500	250	600	1200	39,865	1	36
Pintail	350	600	500	400	500	350	350	225	37,975	1	36
Green-winged teal	175	150	200	250	250	300	350	100	18,900	1	37
Blue-winged teal	100	100	150	150	150	100	350	250	12,950		
Cinnamon teal											
Shoveler	100	250	250	250	250	200	150	150	14,175	1	20
Wood											
Redhead	75	100	100	100	100	100	100	50	6,895		
Ring-necked											
Canvasback	25	50	40	15	25	50	50	25	3,605		
Scaup								50	1,470		
Goldeneye											
Bufflehead											
Ruddy											
Other											
TOTAL DUCKS	2025	4250	2990	2415	3075	2050	2650	3250	235,935	7	233
Coot:	100	150	150	100	150	100	300	300	15,925	2	25

(over)

15% sample

	(5)	(6)	(7)	SUMMARY		
	Total Days Use	Peak Number	Total Production			
Swans	:	-	:	-	Principal feeding areas	
Geese	:	175	:	0		
Ducks	:	4150	:	233	Principal nesting areas	
Coots	:	300	:	25		
				Reported by Chas. Gibbons/Bob 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).

3 -1750a

Cont. NR-1
(Rev. March 1953)WATERFOWL
(Continuation Sheet)REFUGE Halfbreed LakeMONTHS OF May TO August, 19 70

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen : total	
	7/12-18	7/19-25	7/26-8/1	8/2-8	8/9-15	8/16-22	8/23-29	8/30-9/5		seen	total
Swans:									84		
Whistling											
Trumpeter											
Geese:											
Canada		25	30	40	10	50	30	50	2,290	1	7
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard	2000	2500	2500	1500	100	700	500	200	99,050	15	460
Black											
Gadwall	400	400	400	500		100			27,300		
Baldpate	800	850	850	1000	500	1000	250	150	60,200	2	60
Pintail	1200	1600	1600	1000	250	850	200	100	64,260	5	130
Green-winged teal	300	200	200	100	200	300	500	200	31,850	1	5
Blue-winged teal	400				500	300			16,450		
Cinnamon teal	50				25	10			1,190		
Shoveler	700	750	750	800	850	700	500	500	45,500	2	60
Wood											
Redhead	100	150	150	150	150	200	100	50	7,875		
Ring-necked											
Canvasback	20	40	40					10	840		
Scaup	100	100	100	50	50	25	50	70	4,165		
Goldeneye									140		
Bufflehead											
Ruddy								25	175		
Other											
TOTAL DUCKS	6070	6590	6590	5100	2625	4185	2100	1305	358,995	25	715
Coot:	700	700	700	1000	1000	500	1500	300	48,300	15	150

(over)

20% sample

	(5)	(6)	(7)	
	Total Days Use	Peak Number	Total Production	SUMMARY
Swans	:	7	0	Principal feeding areas
Geese	:	75	7	
Ducks	:	6590	715	Principal nesting areas
Coots	:	1500	150	

Reported by Chas. Gibbons/Bob 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).

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

W A T E R F O W L

REFUGE Lake Mason

MONTHS OF May TO August, 1970

(1) Species	(2) Class D Data									
	Weeks of reporting period									
	5/3-9 1	5/10-16 2	5/17-23 3	5/24-30 4	5/31-6/6 5	6/7-13 6	6/14-20 7	6/21-27 8	6/28-7/4 9	7/5-11 10
Swans:										
Whistling Trumpeter	7									
Geese:										
Canada	10	12	10	8						
Cackling Brant										
White-fronted Snow										
Blue Other										
Ducks:										
Mallard	450	600	1000	1000	1200	1500	1500	1500	2000	2500
Black Gadwall	1500	1500	1500	1500	1700	1700	1500	1000	1000	1000
Baldpate	300	400	500	500	500	500	800	1000	1500	1500
Pintail	1300	450	700	700	800	1000	1000	1000	1000	1000
Green-winged teal	500	500	500	500	500	500	500	500	500	500
Blue-winged teal	200	300	300	300						
Cinnamon teal	20	20								
Shoveler	350	400	500	500	800	800	800	1000	1500	1500
Wood Redhead	500	400	500	500	500	450	600	700	650	700
Ring-necked Canvasback	100	50								
Scaup Goldeneye	250	250	400	400	300	300	250	250	300	400
Bufflehead										
Ruddy			100	100	75	100	100	200	350	400
Other										
TOTAL DUCKS	5470	4870	6000	6000	6375	6850	7050	7150	8800	9500
Coot:	1000	1000	1200	1200	1200	1200	1300	1300	1200	1000

3 -1750a

Cont. NR-1

(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE Lake MasonMONTHS OF May TO August, 19 70

(1) Species	(2) Weeks of reporting period								(3) Estimated	(4) Production*	
	7/12-18	7/19-25	7/26-8/1	8/2-8	8/9-15	8/16-22	8/23-29	8/30-9/5	waterfowl	Broods:Estimated	seen: total
Species	11	12	13	14	15	16	17	18	days use		
Swans:									2	63	
Whistling Trumpeter											
Geese:											
Canada	10	25	50	100	35	100	75	125	3,920		
Cackling Brant											
White-fronted Snow											
Blue Other											
Ducks:											
Mallard	3000	3400	3400	3700	3800	4000	4000	4000	297,850	15	473
Black											
Gadwall	900	1100	1100	1500	1500	2000	2500	2500	189,000	1	31
Baldpate	1600	1800	1800	2000	2200	2600	2800	3000	177,100	1	32
Pintail	1000	1200	1200	1500	1200	1000	1000	1700	131,250	14	451
Green-winged teal	500	500	500	500	600	600	600	1000	68,600		
Blue-winged teal						100	100	500	12,600		
Cinnamon teal									280		
Shoveler	1500	1700	1700	1700	1600	1700	1700	1800	150,850	1	31
Wood											
Redhead	800	1000	1000	1000	1000	1000	1000	1000	98,400	3	95
Ring-necked Canvasback	150	150	150	150	200	150	150	200	10,150		
Scaup	500	800	800	750	800	600	600	500	59,150	2	63
Goldeneye	150	150	150	150	100	100	150	100	7,350		
Bufflehead											
Ruddy	400	400	400	300	400	450	400	500	32,725		
Other											
TOTAL DUCKS	10500	12200	12200	13250	13400	14300	15000	16800	1,230,005	37	1176
Coot:	1000	2500	2500	2600	2800	2800	2800	5000	235,200	80	800

(over)

*20% sample

	(5) Total Days Use	(6) Peak Number	(7) Total Production	SUMMARY	
Swans	:	7	:	Principal feeding areas	
Geese	:	125	:		
Ducks	:	16,800	:	Principal nesting areas	
Coots	:	5,000	:		
				Reported by	Chas. Gibbons/Bob 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).

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

W A T E R F O W L

REFUGE War Horse Lake

MONTHS OF May TO August, 19 70

(1) Species	(2) Class D Data									
	Weeks of reporting period									
	5/3-9 1	5/10-16 2	5/17-23 3	5/24-30 4	5/31-6/6 5	6/7-13 6	6/14-20 7	6/21-27 8	6/28-7/4 9	7/5-11 10
Swans:										
Whistling Trumpeter	15	12								
Geese:										
Canada	50	100	150	75	10					
Cackling Brant										
White-fronted Snow										
Blue										
Other										
Ducks:										
Mallard	300	500	600	600	650	700	700	700	700	700
Black										
Gadwall	1000	1200	700	500	500	500	550	600	500	350
Baldpate	1500	1200	1000	1000	1000	1000	1000	1000	1000	1000
Pintail	250	300	300	250	250	300	250	200	200	250
Green-winged teal	1000	500	700	300	200	150	150	150	150	150
Blue-winged teal	500	850	300	50	50	50	60	60	100	75
Cinnamon teal	20	10								
Shoveler	500	200	250	150	200	200	150	150	150	150
Wood										
Redhead	1500	1600	1000	800	500	500	500	250	250	250
Ring-necked										
Canvasback	300	100	100	100	50	75	25	100	50	100
Scaup	300	100	100	200	150	100	100	100	100	150
Goldeneye	50	25								
Bufflehead	50									
Ruddy	20									
Other										
TOTAL DUCKS	7290	6585	5050	3950	3550	3575	3485	3310	3200	3175
Coot:	2000	1500	1200	1000	1000	700	900	900	900	900

3 -1750a

Cont. NR-1

(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE War Horse LakeMONTHS OF May TO August, 1970

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen : total	
	7/12-18	7/19-25	7/26-8/1	8/2-8	8/9-15	8/16-22	8/23-29	8/30-9/5			
Swans:									189		
Whistling Trumpeter											
Geese:											
Canada			10	15	12	25	50	10	3,550		
Cackling Brant											
White-fronted Snow											
Blue Other											
Ducks:											
Mallard	1200	1500	1400	1500	1200	1500	1550	1500	122,500	25	460
Black Gadwall	300	400	450	450	450	500	1000	5000	104,650		
Baldpate	1000	1100	1500	2000	2000	2000	2500	11000	236,600	2	35
Pintail	700	800	800	700	850	850	900	1000	64,050	11	190
Green-winged teal	100	100	150	150	150	500	1000	2000	53,200		
Blue-winged teal	50	50	75					500	19,390		
Cinnamon teal									210		
Shoveler	200	220	275	350	350	350	550	1500	41,265		
Wood Redhead	200	150	225	500	700	750	1900	3000	102,025		
Ring-necked Canvasback	75	20	100	50	100	250	300	500	16,765		
Scaup Goldeneye	150	100	150	100	100	100	150	500	19,250		
Bufflehead		20		20	20	20	20	50	1,575		
Ruddy									350		
Other									140		
TOTAL DUCKS	3975	4460	5125	5820	5920	6820	9870	26550	781,970	38	685
Coot:	900	950	1000	1000	1200	1200	1500	10000	201,250		

(over)

40% sample

	(5) Total Days Use	(6) Peak Number	(7) Total Production	SUMMARY
Swans	:	15	:	0
Geese	:	150	:	0
Ducks	:	26,550	:	685
Coots	:	10,000	:	no estimate
				Principal feeding areas
				Principal nesting areas
				Reported by Chas. Gibbons/Bob Burkholder

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuge 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 Yellow Water Lake

MONTHS OF May TO August, 1970

(1) Species	(2) Class D Data Weeks of reporting period									
	5/3-9 1	5/10-16 2	5/17-23 3	5/24-30 4	5/31-6/6 5	6/7-13 6	6/14-20 7	6/21-27 8	6/28-7/4 9	7/5-11 10
Swans:										
Whistling Trumpeter										
Geese:										
Canada	2	4	2	2	7	7	7	7	7	6
Cackling Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	25	20	20	20	25	25	25	25	25	35
Black										
Gadwall	250	100	100	100	75	100	60	100	100	90
Baldpate	20	50	50	50	30	50				
Pintail	20	10	10	10	10	10	10	10	15	30
Green-winged teal	20	20	20	20	10	5	15	20	20	10
Blue-winged teal	5									
Cinnamon teal										
Shoveler	30	30	30	30	35	25	30	30	30	35
Wood										
Redhead										
Ring-necked										
Canvasback										
Scaup										
Goldeneye										
Bufflehead										
Ruddy										
Other										
TOTAL DUCKS	370	230	230	230	185	215	140	185	190	200
Coot:	50	75	50	30	40	50	70	70	75	75

3 -1750a

Cont. NR-1
(Rev. March 1953)WATERFOWL
(Continuation Sheet)REFUGE Yellow Water LakeMONTHS OF May TO August, 19 70

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen : total	
	7/12-18	7/19-25	7/26-8/1	8/2-8	8/9-15	8/16-22	8/23-29	8/30-9/5			
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada	10	6	15	10	15	20	10	10	1,030	1	5
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard	60	75	75	70	70	100	100	200	6,965	0	30
Black											
Gadwall	100	50	150	100	125	150	150	500	16,800		20
Baldpate	75	75	75	90	90	100	100	400	8,785		
Pintail	50	50						300	3,745	1	50
Green-winged teal	20	20	20	100	50	200	350	500	9,940		
Blue-winged teal							400	500	6,335		
Cinnamon teal											
Shoveler	100	150	150	80	75	100	150	500	11,270		20
Wood											
Redhead								100	700		
Ring-necked											
Canvasback											
Scaup											
Goldeneye											
Bufflehead											
Ruddy											
Other											
TOTAL DUCKS	405	420	470	440	410	650	1250	3000	64,540	1	120
Coot:	75	75	50	100	100	110	110	1500	18,935		
				(over)							

10% sample

	(5)	(6)	(7)	
	Total Days Use	Peak Number	Total Production	SUMMARY
Swans	:	-	-	Principal feeding areas
Geese	:	20	5	
Ducks	:	6600	120	Principal nesting areas
Coots	:	1500	no estimate	
				Reported by <u>Chas. Gibbons/Bob Burkholder</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).

3-1751

Form NR-1A
(Nov. 1945)

MIGRATORY BIRDS

Hailstone, Halfbreed, (other than waterfowl)
Refuge.....Lake Mason Complex..... Months of.....May.....to.....August.....197.70

(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	
<u>I. Water and Marsh Birds:</u>										
Western Grebe	15	5-10-70	150	8-70	Still present		3	50	100	150
Eared Grebe	2	"	1,000	"	" "		3	500	800	1,000
Double crested cormorant	100	"	100	"	" "			Unknown		300
White pelican	20	5-20-70	300	"	" "			"		500
Great blue heron	Last period		10	"	" "	3	4	4		15
American bittern	1	6-12-70	5	"	" "			Unknown		10
<u>II. Shorebirds, Gulls and Terns:</u>										
Avocet	Last period		150	8-70	Still present			Unknown		250
California gull	20	5-10-70	300	8-70	" "			"		500
Wilson phalarope	Last period		500	8-70	" "			"		500
Long-billed curlew	Last period		350	8-70	100 8-20-70			"		400
Killdeer	1	5-10-70	500	8-70	Still present			"		600
Common tern	2	"	50	8-70	" "			"		100

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. <u>Doves and Pigeons:</u>					
Mourning dove	2	5-10-70	400	8-70	Still present
White-winged dove					Unknown
600					600
IV. <u>Predaceous Birds:</u>					
Golden eagle	5	Year round residents			
Duck hawk					
Horned owl					
Magpie					
Raven					
Crow					
				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

Wild Horse, War Horse,
Yellow Water (other than waterfowl)

Refuge..... Months of May to August 1967

(1) Species Common Name	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
<u>I. Water and Marsh Birds:</u>										
Western Grebe	Last Period		250	8-70	Still present		Unknown			300
Eared Grebe	40	5-10-70	500	8-70	" "		"			600
Double crested cormorant	10	5-10-70	100	8-70	" "		"			150
White pelican	20	5-10-70	350	8-70	" "		"			500
Great blue heron	Last Period		10	8-70	" "		"			15
<u>II. Shorebirds, Gulls and Terns:</u>										
California gull	14	5-10-70	350	8-70	Still present		Unknown			500
Long-billed curlew	Last Period		120	8-70	120	8-20-70	"			200
Killdeer	2	5-10-70	50	8-70	Still present		"			100
Wilson phalarope	Last Period		500	8-70	" "		"			500
Avocet	Last Period		75	8-70	" "		"			100

(over)

(1)	(2)	(3)	(4)	(5)	(6)		
III. <u>Doves and Pigeons:</u>							
Mourning dove	2	5-10-70	500	8-70	Still present	Unknown	800
White-winged dove							
IV. <u>Predaceous Birds:</u>							
Golden eagle	Year round resident				5	"	5
Bronze hawk							
Red-tailed hawk							
Magpie	3	5-10-70	50	8-70	Still present	"	50
Raven							
Crow							
Marsh hawk	2	5-10-70	15	8-70	"	"	25
					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.

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

- (1) SPECIES: Use correct common name.
- (2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.
- (4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.
- (5) REMOVALS: Indicate total number in each category removed during the report period.
- (6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.
- (7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

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

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

W A T E R F O W L

REFUGE Hailstone

MONTHS OF September TO December, 19⁷⁰

(1) Species	(2) CLASS G DATA Weeks of reporting period									
	9/6-12 1	9/13-19 2	9/20-26 3	9/27-10/3 4	10/4-10 5	10/11-17 6	10/18-24 7	10/25-31 8	11/1-7 9	11/8-14 10
Swans:										
Whistling Trumpeter										
Geese:										
Canada	175	225	200	175	-	200		-----FROZEN-----		
Cackling Brant										
White-fronted Snow										
Blue										
Other										
Ducks:										
Mallard	1,000	800	850	900	950	900	500			
Black										
Gadwall	200	500	100	250	100					
Baldpate	1,200	1,000	2,000	500	350	100				
Pintail	225	200	250	225	225	200				
Green-winged teal	100	500	300	450						
Blue-winged teal	250	350	100							
Cinnamon teal										
Shoveler	150	250	200	250	200	100				
Wood										
Redhead	50	75	100	100	100	50				
Ring-necked										
Canvasback	25	30	35	25	10	10				
Scaup	50	50	50	100	60	40	20			
Goldeneye				20			10			
Bufflehead										
Ruddy										
Other										
Total Ducks	3,250	3,755	3,985	2,820	1,995	1,400	530			
Coot:	300	300	350	200	100	100				

3 -1750a

Cont. NR-1

(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE HailstoneMONTHS OF September TO December, 1970

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen : total					
	11/15-21	11/22-28	11/29-12/5	12/6-12	12/13-19	12/20-26	12/27-1/4	11	12	13	14	15	16	17	18
Swans:															
Whistling															
Trumpeter															
Geese:															
Canada															6,825
Cackling															
Brant															
White-fronted															
Snow															
Blue															
Other															
Ducks:															
Mallard	-----FROZEN ENTIRE PERIOD-----								41,300						
Black															-
Gadwall															8,050
Baldpate															36,050
Pintail															9,275
Green-winged teal															9,450
Blue-winged teal															4,900
Cinnamon teal															-
Shoveler															8,050
Wood															-
Redhead															3,325
Ring-necked															-
Canvasback															945
Scaup															2,590
Goldeneye															210
Bufflehead															
Ruddy															
Other															
Total Ducks															124,145
Coot:															9,450

(over)

(CONT.)

	(5)	(6)	(7)	SUMMARY
	Total Days Use	Peak Number	Total Production	
Swans	:	:	:	Principal feeding areas
Geese	6,825	225	:	
Ducks	124,145	3,985	:	Principal nesting areas
Coots	9,450	350	:	
				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).

W A T E R F O W L

REFUGE Halfbreed Lake

MONTHS OF September TO December, 1970

(1) Species	(2) CLASS C DATA Weeks of reporting period									
	9/6-12	9/13-19	9/20-26	9/27-10/3	10/4-10	10/11-17	10/18-24	10/25-31	11/1-7	11/8-14
	1	2	3	4	5	6	7	8	9	10
Swans:										
Whistling Trumpeter									-----FROZEN-----	
Geese:										
Canada	50	-	-	25	200	-	-			
Cackling Brant										
White-fronted Snow										
Blue										
Other										
Ducks:										
Mallard	200	250	250	500	1,700	1,500	700			
Black										
Gadwall			150			100				
Baldpate	150	300	500	300	200	300				
Pintail	100	250	350	200	100	500				
Green-winged teal	200	600	550	275	100	100				
Blue-winged teal										
Cinnamon teal										
Shoveler	500	300	350	400	100					
Wood										
Redhead	50	75	50	100	10					
Ring-necked										
Canvasback	10	20								
Scaup	70	50	60	20	10					
Goldeneye										
Bufflehead										
Ruddy	25	50								
Other										
Total Ducks	1,305	1,895	2,260	1,795	2,220	2,500	700			
Coot:										
	300	300	500	600	200	200				

3 -1750a

Cont. NR-1

(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE Halfbreed LakeMONTHS OF September TO December, 19 70

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen : total									
	11/5-21	11/22-28	11/29-12/5	12/6-12	12/13-19	12/20-26	12/27-1/2	11	12	13	14	15	16	17	18				
Swans:																			
Whistling																			
Trumpeter																			
Geese:																			
Canada																		1,925	
Cackling																			
Brant																			
White-fronted																			
Snow																			
Blue																			
Other																			
Ducks:																			
Mallard																			35,700
Black																			-
Gadwall																			1,750
Baldpate																			12,250
Pintail																			10,500
Green-winged teal																			12,775
Blue-winged teal																			-
Cinnamon teal																			-
Shoveler																			11,550
Wood																			-
Redhead																			1,995
Ring-necked																			-
Canvasback																			210
Scaup																			1,470
Goldeneye																			-
Bufflehead																			-
Ruddy																			525
Other																			-
Total Ducks																			88,725
Coot:																			14,700

(over)

	(5)	(6)	(7)	
	Total Days Use	Peak Number	Total Production	SUMMARY
Swans	:	:	:	Principal feeding areas
Geese	1,925	200	:	
Ducks	88,725	2,260	:	Principal nesting areas
Coots	14,700	600	:	
				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 Lake Mason Complex

MONTHS OF September TO December, 1970

(1) Species	(2) CLASS C DATA									
	Weeks of reporting period									
	9/6-12 1	9/13-19 2	9/20-26 3	9/27-10/3 4	10/4-10 5	10/11-17 6	10/18-24 7	10/25-31 8	11/1-7 9	11/8-14 10
Swans:										
Whistling Trumpeter	8						50	65	----FROZEN-----	
Geese:										
Canada	130	130	200	250	220	40	120	160		
Cackling Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	4,000	5,500	6,000	3,000	2,500	1,700	1,000	500		
Black										
Gadwall	2,500	3,000	3,900	4,000	4,000	3,500	500	150		
Baldpate	3,000	3,500	5,500	5,000	4,500	4,500	1,000	300		
Pintail	1,700	1,600	1,500	1,200	1,100	1,250	500			
Green-winged teal	1,000	2,500	3,000	500	600	695				
Blue-winged teal	500	1,000	100							
Cinnamon teal										
Shoveler	1,800	2,000	2,500	1,600	1,300	1,300	500	50		
Wood										
Redhead	1,000	1,500	1,500	1,400	600	500	200	150		
Ring-necked										
Canvasback	200	500	300	400	300	200				
Scaup	500	400	400	450			200	100		
Goldeneye	100	50						50		
Bufflehead								25		
Ruddy	500	750	800	300	250	200				
Other										
Total Ducks	16,800	22,300	25,500	17,850	15,150	13,845	3,900	1,325		
Coot:	5,000	6,000	6,500	4,000	2,500	2,000	300	200		

3 -1750a

Cont. NR-1
(Rev. March 1953)WATERFOWL
(Continuation Sheet)REFUGE Lake Mason ComplexMONTHS OF September TO December, 1970

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen : total	
	11/15-21	11/22-28	11/29-12/5	12/6-12	12/13-19	12/20-26	12/27-1/2				
Swans:											
Whistling								861			
Trumpeter											
Geese:											
Canada								8,750			
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard	-----FROZEN ENTIRE PERIOD-----							169,400			
Black								-			
Gadwall								150,850			
Baldpate								191,100			
Pintail								61,950			
Green-winged teal								58,065			
Blue-winged teal								11,200			
Cinnamon teal								-			
Shoveler								77,350			
Wood								-			
Redhead								47,950			
Ring-necked								-			
Canvasback								13,300			
Scaup								14,350			
Goldeneye								1,400			
Bufflehead								175			
Ruddy								19,600			
Other								-			
Total Ducks								816,690			
Coot:								185,500			

(over)

	(5)	(6)	(7)		SUMMARY
	Total Days Use	Peak Number	Total Production		
Swans	861	65		Principal feeding areas	
Geese	8,750	250			
Ducks	816,690	25,500		Principal nesting areas	
Coots	185,500	6,500			
				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 War Horse Lake

MONTHS OF September TO December, 1970

(1) Species	(2) CLASS C DATA Weeks of reporting period									
	: 9/6-12	: 9/13-19	: 9/20-26	: 9/27-10/3	: 10/4-10	: 10/11-17	: 10/18-24	: 10/25-31	: 11/1-7	: 11/8-14
	: 1	: 2	: 3	: 4	: 5	: 6	: 7	: 8	: 9	: 10
Swans:										
Whistling Trumpeter										FROZEN
Geese:										
Canada	10	275	100	125	300	50	180	120	250	
Cackling Brant										
White-fronted Snow										
Blue										
Other										
Ducks:										
Mallard	1,500	1,500	1,500	2,000	1,000	800	800	200	500	
Black										
Gadwall	5,000	4,500	4,500	2,000	1,000	1,000	800	800		
Baldpate	11,000	10,000	9,500	6,000	4,000	4,000	500	300		
Pintail	1,000	1,500	1,000	1,000	500	400	100	50		
Green-winged teal	2,000	2,500	1,000	500	500					
Blue-winged teal	500	1,500	500	100						
Cinnamon teal										
Shoveler	1,500	2,000	1,000	500	500	500	50	50		
Wood										
Redhead	3,000	4,000	3,500	2,000	1,500	1,500	200			
Ring-necked										
Canvasback	500	200	350	250	300	300				
Scaup	500					500				
Goldeneye	50						50	50	75	
Bufflehead							50	25	10	
Ruddy							25	50		
Other										
Total Ducks	26,550	27,700	22,850	14,350	9,300	9,000	2,575	1,525	585	
Coot:	10,000	11,500	8,000	3,500	3,000	4,000	500	300	100	

3 -1750a

Cont. NR-1

(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE War Horse LakeMONTHS OF September TO December, 1970

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen : total	
	11/15-21:	11/22-28:	11/29-12/5:	12/6-12:	12/13-19:	12/20-26:	12/27-1/2:				
	11	12	13	14	15	16	17	18			
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada									9,870		
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard	-----FROZEN ENTIRE PERIOD-----								68,600		
Black									-		
Gadwall									137,200		
Baldpate									317,100		
Pintail									38,850		
Green-winged teal									45,500		
Blue-winged teal									18,200		
Cinnamon teal									-		
Shoveler									42,700		
Wood									-		
Redhead									109,900		
Ring-necked									-		
Canvasback									13,300		
Scaup									7,000		
Goldeneye									1,575		
Bufflehead									595		
Ruddy									525		
Other											
Total Ducks									801,045		
Coot:									268,300		

(over)

	(5)	(6)	(7)	
	Total Days Use	Peak Number	Total Production	SUMMARY
Swans	:	:	:	Principal feeding areas
Geese	9,870	300	:	
Ducks	801,045	27,700	:	Principal nesting areas
Coots	268,300	11,500	:	
				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 Yellow Water

MONTHS OF September TO December, 19 70

(1) Species	(2) CLASS C DATA Weeks of reporting period									
	:9/6-12 : 1	:9/13-19 : 2	: 9/20-26 : 3	:9/26-10/3 : 4	:10/4-10 : 5	:10/11-17 : 6	:10/18-24 : 7	:10/25-31 : 8	:11/1-7 : 9	:11/8-14 : 10
Swans:										
Whistling Trumpeter								10% FROZEN		FROZEN
Geese:										
Canada	10	15	5	20	25	30				
Cackling Brant										
White-fronted Snow										
Blue										
Other										
Ducks:										
Mallard	200	1,000	900	1,000	800	700	500	300	400	
Black										
Gadwall	500	700	1,000	2,500	1,500	2,000	1,000	100		
Baldpate	400	400	500	500	1,000	1,000	500	50		
Pintail	300	500	400	400	350	300				
Green-winged teal	500	1,000	500	100	100	100				
Blue-winged teal	500	700								
Cinnamon teal										
Shoveler	500	600	650	650	650	600	100			
Wood										
Redhead	100	150	200	200	250	300	200	100		
Ring-necked										
Canvasback		20	30	50						
Scaup			100	50	75	100	75	50		
Goldeneye									50	
Bufflehead							50	20		
Ruddy										
Other										
Total Ducks	3,000	5,070	4,280	5,450	4,725	5,100	2,425	620	450	
Coot:	1,500	2,000	2,500	2,500	3,500	5,000	200	200		

3 -1750a

Cont. NR-1

(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE Yellow WaterMONTHS OF September TO December, 19 70

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen : total	
	11/15-21	11/22-28	11/29-12/5	12/6-12	12/13-19	12/20-26	12/27-1/2				
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada								735			
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard	-----FROZEN ENTIRE PERIOD-----								40,600		
Black								-			
Gadwall								65,100			
Baldpate								30,450			
Pintail								15,750			
Green-winged teal								16,100			
Blue-winged teal								8,400			
Cinnamon teal								-			
Shoveler								26,250			
Wood								-			
Redhead								10,500			
Ring-necked								-			
Canvasback								700			
Scaup								3,150			
Goldeneye								350			
Bufflehead								490			
Ruddy											
Other											
Total Ducks								217,840			
Coot:								121,800			

(over)

	(5)	(6)	(7)	
	Total Days Use	Peak Number	Total Production	SUMMARY
Swans				Principal feeding areas
Geese	735	30		
Ducks	217,840	5,000		Principal nesting areas
Coots	121,800	5,450		
				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).

3-1751

Form NR-1A
(Nov. 1945)MIGRATORY BIRDS
(other than waterfowl)Refuge CMR SATELLITESMonths of September to December 1957 70

(1) Species Common Name	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. <u>Water and Marsh Birds:</u>										
Western Grebe	Previous Periods		No Data Available							300
Eared Grebe										1,000
Double-crested Cormorant										500
White Pelican										350
Great blue Heron										20
American Bittern										5
II. <u>Shorebirds, Gulls and Terns:</u>										
Avocet	Previous Periods		No Data Available							250
Longbill Curlew										250
California Gull										1,000
Wilson Phalarope										500
Killdeer										600
Common Tern										100

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. <u>Doves and Pigeons:</u>					
Mourning dove	Previous Periods				500
White-winged dove					
IV. <u>Predaceous Birds:</u>					
Golden eagle	year-round resident	5			2
Duck hawk	none noted	2			2
Horned owl	year-round resident	5			2
Magpie	" " "	100			100
Raven					
Crow	fall migrant				250
Bald eagle	" "	3			3
Marsh hawk	year-round resident	25			15
Reported by..... Bob L. Burkholder					

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.

UPLAND GAME BIRDS

Refuge CMR Satellites Months of September to December, 19 70

* Form NR-2 - UPLAND GAME BIRDS *

(1) Species	(2) Density	(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
		Acres per Bird	Number broods obs'v'd.		Estimated Total	Hunting	For Re-stocking		
Common Name	Cover types, total acreage of habitat			Percentage				Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
<u>Hailstone & Halfbreed</u>									Used mostly on a "on-off" basis.
Sage Grouse								50	
Pheasant								20	
Grey Partridge								45	
<u>Lake Mason</u>									
Sharp-tailed Grouse								15	
Sage Grouse								50	
Pheasant								50	
Grey Partridge								50	
<u>War Horse</u>									
Sage Grouse								65	
<u>Wild Horse</u>									
Sage Grouse								60	
<u>Yellow Water</u>									
Sage Grouse								50	

* 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 Satellite Areas - CMR Calendar Year 1970

(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	As of Dec. 31		
Antelope												250	75	
Mule deer												40	25	

Remarks: Antelope and mule deer are the only big game species associated with these areas and they use them on a "on-off" basis. No surveys are conducted to determine the population status.

Reported by Bob L. Burkholder

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 Lake Mason NW Refuge* Year 19. 70

Botulism

Lead Poisoning or other Disease

Period of outbreak July - August

Period of heaviest losses mid-July

Losses:

	Actual Count	Estimated
(a) Waterfowl	<u>60</u>	<u>1500</u>
(b) Shorebirds	<u>none</u>	<u>?</u>
(c) Other	<u>none</u>	<u>?</u>

Number Hospitalized	No. Recovered	% Recovered
(a) Waterfowl	<u>none</u>	<u> </u>
(b) Shorebirds	<u> </u>	<u> </u>
(c) Other	<u> </u>	<u> </u>

Areas affected (location and approximate acreage)

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

Water was receding from a higher than normal level.

Condition of vegetation and invertebrate life normal

*Remarks Botulism was not noted at other satellite areas.

Kind of disease none

Species affected

Number Affected Species	Actual Count	Estimated
<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>

Number Recovered

Number lost

Source of infection

Water conditions

Food conditions

Remarks

3-1758

Form NR-8

(Rev. Jan. 1956)

Fish and Wildlife Service Branch of Wildlife Refuges

Hailstone, Halfbreed, Lake Mason, CULTIVATED CROPS - HAYING - GRAZINGRefuge War Horse, Wild Horse & Yellow Water County Stillwater, Musselshell State Montana
& Petroleum

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			
None									
								Fallow Ag. Land	

No. of Permittees: Agricultural Operations _____ Haying Operations _____ Grazing Operations 13

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING	Number Animals	AUM'S	Cash Revenue	ACREAGE	
				1. Cattle	1761*	4105	\$2688.42	14,421	
				2. Other					
				1. Total Refuge Acreage Under Cultivation					
Hay - Wild				2. Acreage Cultivated as Service Operation					

*"On-off" situation - cattle numbers estimate based on licensed AUMs by BLM

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.