

CHARLES M. RUSSELL (SATELLITE AREA
NARRATIVE REPORT - 1967 REFUGES)

Harrison, Halfbreed, Lake Mason, Wild Horse, War Horse, Yellow Water
Ft. Peck, Slippery Ann. Miller Lake



COVER PHOTO

Bighorn rams photographed $1\frac{1}{2}$ miles west of the
2,000 acre sheep enclosure.
Photo No. 67-602 - 7/19/67, FRM

CHARLES M. RUSSELL NATIONAL WILDLIFE RANGE
Narrative Report

January - December 1967

PERSONNEL

General Schedule

Frank R. Martin
Bob L. Burkholder
Charles W. Gibbons
Marvin R. Kaschke
Charles S. Peck
Lloyd R. Ramelli
Richard T. Shideler
Allan H. Waller
Bruce P. Stollberg
Linda H. Wicks

Refuge Manager-in-Charge
Wildlife Pilot-Biologist
Refuge Manager (Fort Peck)
Wildlife Biologist
Refuge Manager (Slippery Ann)
Recreation Specialist
Student Trainee
Student Trainee
Refuge Manager (Interim 3/12-5/20)
Refuge Clerk

Wage Board

Floyd L. Emery
Frank V. French
Dean A. Gilbert
Harold H. Jones
Lynes D. Kilby
John Kombol
Joseph J. Kombol
Frank Oset, Jr.
Samuel A. Sage
Gerald A. Sullivan
Joe F. Zupac

Maintenanceman II (WAE)
Maintenanceman II (WAE)
Shop Foreman II
Maintenanceman Foreman II
Maintenanceman I (WAE)
Maintenanceman II (WAE)
Maintenanceman II (WAE)
Carpenter (WAE)
Maintenanceman III
Mechanic (HD)
Maintenanceman III (WAE)

Temporary

Shirley A. Carlson
William F. Davis
Walter W. Grovom
Charles W. Kananen, Jr.
Lloyd M. Kelsey
Betty L. Minnich
Corry L. O'Brien
Thomas E. Schoonen
Harry R. van der Hagen

Clerk-Typist
General Operator, Heavy
Maintenanceman II
General Operator, Heavy
Maintenanceman I
Clerk-Typist
Student Aid (YOC)
General Operator, Heavy
Maintenanceman II





Мелла М. Лан фел Мелла
Дронна Р. Дронна
Селла Р. О.В.Лан
Велла Р. М.В.Лан
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CHARLES M. RUSSELL NATIONAL WILDLIFE RANGE
Lewistown, Montana

NARRATIVE REPORT
January - December 1967

I. GENERAL

A. Weather Conditions

Temperatures at Lewistown were average or perhaps slightly above for the first part of the year and during the same period moisture conditions were well above normal. A record of 106 inches of snow was recorded at Lewistown. This wet cool cycle was abruptly terminated during mid-June when precipitation became practically non-existent and temperatures shot above normal and stayed there. This condition remained until mid-September when welcome rains came to break the drought, putting an end to a very hazardous fire condition.

Average moisture was received during the year with considerable rainfall during the month of June. These conditions resulted in good forage production and water conditions but were responsible for a poor hatch of most upland game birds. Unusually heavy rainfall in September stimulated secondary growth of range grasses, filled water holes, and generally improved range conditions for big game and livestock.

Slippery Ann Weather Record

	<u>Snowfall</u>	<u>Precipitation</u>			<u>Extremes</u>	
		<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>Max.</u>	<u>Min.</u>
January	5"	.86	.40	.25	50	-21
February	9"	.35	.55	.59	55	- 7
March	13"	.33	.40	.82	62	-18
April	7"	.99	.64	1.56	70	8
May	4"	1.89	1.30	1.15	89	22
June	-	2.60	1.10	3.27	91	40
July	-	.88	2.08	.59	99	43
August	-	1.14	.73	.01	101	38
September	-	.78	.36	2.33	101	34
October	-	Tr	.68	.80	78	16
November	Tr	.72	1.98	Tr	56	- 1
December	1"	.10	.50	.18	44	-28
Totals	39"	10.64	10.72	11.55	101	-28

In spite of the heavy snow pack in the Missouri River drainage, the spring thaw and breakup of river ice caused no unusual flood conditions on the Wildlife Range. However, due to high levels in the Fort Peck Reservoir, several hundred acres of land normally planted to wildlife crops were inundated.

Ice on the river went out March 28 and remained free of ice until November 29 when the river again froze solid for the winter.

The following table shows the weather conditions for the year on the east end of the Wildlife Range. This information was furnished by the weather station maintained by the Corps of Engineers at Fort Peck.

	<u>Precipitation</u>			<u>Extremes</u>	
	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>Max.</u>	<u>Min.</u>
January	.50	.39	.62	45	-31
February	.14	.07	.18	52	-12
March	.42	.05	.71	63	-16
April	.90	.73	1.45	65	2
May	5.27	1.67	.36	82	22
June	4.48	1.56	1.59	90	42
July	3.54	2.91	.37	96	41
August	4.34	4.35	.02	98	45
September	1.44	.44	2.74	97	38
October	Tr	.82	.72	74	25
November	Tr	.27	.31	59	3
December	.07	.23	.22	52	-22
Totals	21.10	13.49	9.26	98	-31

B. Habitat Conditions

1. Water

FORT PECK RESERVOIR - POOL LEVEL

	<u>1965</u>	<u>1966</u>	<u>1967</u>
Jan 1	2234.3	2242.1	2235.5
Feb 1	2233.3	2241.0	2234.6
Mar 1	2233.0	2239.6	2234.1
Apr 1	2233.2	2240.2	2235.3
May 1	2235.4	2239.7	2235.9
Jun 1	2239.7	2239.0	2236.7
Jul 1	2243.9	2239.0	2243.8
Aug 1	2245.6	2239.3	2245.4
Sep 1	2244.4	2239.0	2244.1
Oct 1	2243.6	2238.5	2242.8
Nov 1	2243.9	2238.3	2241.0
Dec 1	2243.4	2237.0	2239.3

The highest water level this year was 2245.7 on July 21. This is the second highest level since Fort Peck Dam was constructed in 1939. Other peaks were 2244.8 in 1948 and 2245.9 in 1965. The Corps of Engineers make every effort to sustain as high a level as possible and would bring the reservoir to capacity at 2250 if water was available.

The Fort Peck Reservoir froze over January 18 and was 100% ice-free by April 19. The lake was not frozen over by the close of the 1967 season.

Moisture for 1967 on the east end was low compared with past years. Rain received in the spring filled stock reservoirs and insured good plant growth on most of the range. Most reservoirs were dry by late summer and since no moisture was received in the fall, all were dry by the close of the season.

The Corps of Engineers continue with their stated plans of holding the reservoir in the general levels of 2235 to 2245. This inundates all of our valuable bottom lands habitat from tract 19 on down.

2. Food and Cover

Food and cover were both adequate for all wildlife. There were, however, graphic differences in vegetative growth in the east and west units. On the west end of the Wildlife Range above average June rainfall produced good plant growth and sufficient moisture was received during the summer to keep most vegetation green. The east end did not receive these summer rains and vegetation dried up early.

Yields from dry land hay and grain crops responded accordingly, varying from generally good on the west end to poor on the east end.

Unusually heavy rainfall was received throughout the entire area in September. This was followed by a week of warm weather which stimulated second growth of the range vegetation. As a result, good fall feed was available and big game and livestock went into the winter in excellent condition.

II. WILDLIFE

A. Migratory Birds

1. Waterfowl

Above normal precipitation during the year provided ample water in Central Montana. As a result, ducks were spread out and fewer were concentrated on the Wildlife Range. A normal peak of 15,000 mallards was established at Fort Peck the first of the year. This number decreased to 10,000 by March. During the peak of migration later that month, total numbers approached 40,000, including 23,000 mallards. The fall peak occurred in late October and numbered 15,000 birds, including 12,500 mallards. This peak was less than normal due to a mild season that again caused less of a concentration on the Wildlife Range. In early November the wintering mallards again stabilized at 15,000.

A mallard-black duck cross was shot near Lewistown in December 1966. The bird was apparently banded August 1954 at Moosehorn National Wildlife Refuge in Maine.

The mallard feeding program started on January 9 when snow covered all available feed in surrounding fields and depredation problems became acute. Average weights when feeding started were 2 lb. 6 oz. for females and 2 lb. 11 oz. for males. Feeding was continued daily until February 25 when a break in the weather melted snow and the birds again started using surrounding fields. During the first 17 days of March only part-time feeding was necessary. An average of 3 oz. of grain a day per duck was fed. This maintained the same average body weight throughout the winter.

The number of flightless geese concentrating on Fort Peck Reservoir increased from 1,600 in 1966 to 1,700 in July and August of 1967. A banding program conducted in cooperation with the Northern Prairie Research Station and the Montana Department of Fish & Game was initiated in order to learn more about these birds. A peak of 2,000 geese occurred during this period and again in October. Fewer were present on the west end because the rising water level of Fort Peck Reservoir destroyed most of the feeding habitat below Rocky Point. The lake reached 2,245.7', and remained above 2,240' from June 18 - November 18. These recordings are made at the dam site and do not reflect the considerable effect of the backwater curve at the head of the lake.

2. Captive Geese

Twenty-three broods totaling 109 young were produced in the immediate vicinity of Slippery Ann Station in 1967. This is two less broods than was tallied a year ago. It shows an increase in average brood

size from 4.6 to 4.7. A number of these broods were produced by non-pinioned birds which were decoyed into the area by the captive flock. A few nests were abandoned during a blizzard on May 6. The late spring snows did not appear to have much effect on the overall production adjacent to Slippery Ann. Further up river, however, many nests were found abandoned as a result of late spring storms.

Fifty goslings from the captive flock were turned over to the Montana Fish & Game Department to form a nucleus for establishing a nesting population on Freezeout, a state waterfowl management area west of Great Falls. It will be interesting to observe what effect removal of nearly half this year's production will have on the nesting population.

Losses in the captive flock due to predation during the past year were light. Two birds, one a flyer, were taken by eagles and six goslings were killed apparently by an owl. Bobcats were present throughout the year but were controlled by trapping during the critical winter period and no losses were noted. The number of pinioned birds declined from 69 to 58 during the year but this is not surprising since many of the birds are about ten years old.

Forty-five trees nesting platforms furnished with hay bales were erected at and around Slippery Ann in addition to those put up in previous years. Approximately 25% of these were used by nesting birds. Additional platforms will be erected and some locations of existing platforms changed with hopes of increasing use next year.

3. Other Water Birds

No change was noted from last year in the abundance of gulls, terns, cormorants, herons, pelicans, and other birdlife of this type inhabiting the range. First sighting of the great blue heron occurred March 24, and pelicans arrived April 28. The heron rookery on Harriet Island near Slippery Ann was again a foci of activity. Forty-eight nests were occupied--one of which was pre-empted by a Canada goose after several days of avian discord and debate. This rookery is near the main access road and many visitors stopped to watch the birds fishing in shallow water.

The heron-cormorant rookeries in the lake itself continue to decline as wave and ice action continue to knock down the above water snags. Osprey and Canada goose nest sites are likewise affected in these areas.

This year the little brown Sandhill crane migration did not include the Charles Russell Range in their itinerary of land sites. None were observed except at high altitude while enroute to wintering areas further south.

A Caspian tern, Hydroprogne caspia, was sighted on July 8 on the gull and cormorant island rookery on Fort Peck Reservoir. This is the first time this bird has been identified on the Wildlife Range.

4. Shore Birds

No noticeable changes occurred in this classification of bird life. The long-billed curlew was sighted more frequently as a summer resident and flocks of 10 to 20 were common in the spring and late summer. Considerable attention was given to populations of upland and mountain plover during the Nichols Coulee study. A number of nests were located and young birds banded. Biologists Marvin Kaschke and Bob Burkholder sighted a mountain plover October 20. This is the latest sighting of this species on record at Charles Russell National Wildlife Range.

A solitary sandpiper was observed at a reservoir near Nichols Coulee on August 2. This is another addition to the bird list.

5. Doves

The mourning dove is an abundant species on the Wildlife Range and is unique here in being almost exclusively a ground nester. Populations and production do not appear to have changed from last year. However, a reliable index of population change has not been developed for this area.

A dove banding program was initiated as part of the student trainees' assignment and 306 birds were banded. A great deal of experience was gained which will result in a more efficient and productive banding program next year. An unidentified dove was sighted at Slippery Ann on August 22. The bird was observed at close range but an attempt to collect it failed. It appeared smaller than the mourning dove--had all white wings, pink feet, and a white square tail.

B. Upland Game Birds

Upland game bird populations, with the exception of turkeys and sharp-tails, have decreased slightly from the low of last year. Various portions of the Wildlife Range were open to all species but hunting pressure was light and hunter success poor.

The usual inventory of sage grouse strutting grounds was not made this year due to other projects of higher priority occurring during mid-April. Last year 18 areas and 329 birds were located.

Turkeys are hunted in the Musselshell-Devil Creek area and reports from both the Montana Department of Fish & Game and local guides indicate that the take was light despite a normal turkey population estimated at 300 birds. Production of turkeys at Slippery Ann was estimated at 60 on the basis of broods sighted after nesting season although about 125 birds have been located to date. Late winter counts will provide a more reliable index to the total population. Ninety percent of these birds are adjacent to the Slippery Ann Game Station. It is expected that 100 birds will survive the winter.

Management plans include a transplant of 10 to 20 turkeys to the west end of the Wildlife Range prior to nesting season. A spring gobbler hunt and a fall archery season is proposed on the west end excluding the area of the proposed transplant.

In February the Montana Department of Fish & Game introduced 16 turkeys on the east end on the Pines Point. These birds were sighted occasionally during the summer but only two were reported this fall.

C. Big Game Animals

1. Mule Deer

Deer numbers the past several years have shown a steady decline, especially on the west end of the Wildlife Range. This is indicated by intensive census data on Nichols Coulee Resource Conservation Area, aerial transects elsewhere on the range, hunter surveys, informed public opinion, and other field observations by qualified personnel.

This year a hunter survey was conducted by mail in order to improve the quality of data over that of more informal surveys conducted in the past. Seventy percent of those contacted have made valid responses to date. These reporting hunters averaged 3.4 days afield, 5.3 days per deer, and 46% of them were successful in obtaining one or more deer. Although no comments were solicited, 16% of the hunters did so--and all of these requested a reduced season and/or remarked on the scarcity of deer on the Wildlife Range.

Browse conditions are improving following the 1959-1961 period of over-use when populations were high, however, the deer herd is not responding accordingly. Individual deer are in excellent shape as judged by bone marrow and body fat examination. No excessive winter kill has occurred even during the severe winter of 1964-1965.

It appears that the problem is one of limited reproduction coupled with an overharvest of the existing supply. Doe-fawn ratios are low, i.e., 10:7 in 1966, despite improving browse conditions of "fair". Investigations are underway to determine if an endemic condition is responsible within the herd itself.

From the layman's standpoint, it is inconceivable to have a two-deer limit and direct additional pressure by issuing special non-resident permits in an area where deer are not there to harvest. Our recommendations concur with this public opinion since there is not a sound biological case for doing otherwise.

2. White-tailed Deer

The doe/fawn ratio is 10:8.2--somewhat higher than the 10:7 for mule deer. The white-tailed deer continue to prosper despite the heavy hunting pressure exerted upon them. Six to ten thousand acres of prime

habitat was lost as river bottoms became flooded by the rising lake level last year. The lake level was maintained in the 2240' range, offering little relief for this situation. Whitetails are crowded on the remaining habitat and are forced into more of the mule deer range. There is little hope for correcting this situation as long as the lake is maintained above 2230' contour. New habitat cannot be created and the present supply is being completely utilized.

Recommendations include a liberalized hunting season if this can be designed to increase the harvest of white-tailed deer.

3. Elk

This important reintroduced species is on a biologically sound basis as evidenced by its productivity and general condition. There are normally three fairly distinct herds on the Wildlife Range but this year a fourth has been confirmed in the vicinity of Billy Creek in Garfield County. This small herd of 30 animals migrated across Fort Peck Lake last winter and has apparently taken up residence there.

The total number of elk post season approximates 570 animals--an increase of 90 over last year's estimate. Some of this increase was due to a decrease in the number of hunting permits issued on the north side-west end of the Wildlife Range and is in keeping with the management plan to increase this segment of the elk population.

Hunting on the east end is geared to crop the yearly increase and is effectively doing so. The unantlered adult/calf ratio remained at 100:53.

This species provides a great deal of recreation to the hunting public. Despite the fact that permits are issued for 160 animals, each permit holder takes his family and friends along on the hunt. Non-permit holders are not allowed to carry guns unless deer season is open concurrently, but this does not seem to decrease this participation.

An even bigger participation occurs during archery season and it may be significant that a car count on opening day of bow season was higher than that for opening day of the deer rifle season in the same area.

Archers were more successful this year than last and removed 21 elk--one-third more than they took in 1966.

The elk using the river bottoms in late summer afforded much enjoyment to the non-hunting public. They can be viewed from cars and their bugling can be heard up and down the river.

4. Bighorn Sheep

This species has maintained itself with slight additions to the total numbers since the transplant of 43 animals was concluded in 1961. The

current estimate is 80, over half of which are usually outside the enclosure. More sightings are occurring at greater distances from the enclosure. One ram was seen across the river opposite the enclosure and another near the mouth of Slippery Ann Creek. Others were seen on the south side of the river east to Sand Creek and as far west as the Power Plant ferry, a distance of 10 miles. We received an unconfirmed report of a ram near Dovetail which is located 50 miles east of the enclosure.

Two rams were found dead and one of these was definitely shot during the hunting season. No other losses were known to have occurred.

This sheep herd is now well established, having adapted to its new environment. It has increased to the point that it has extended its range from the original release site. The reproduction rate is slow but steady. Ram/ewe ratios are estimated at 50:50 with several of the original rams approaching their terminal age of 14 years.

Management plans include harvest of these older rams in a manner that will provide a quality experience befitting these exceptional trophies. Removing some of the older age class rams may increase the productivity of the herd.

5. Antelope

This species uses the Wildlife Range on an on-and-off basis. During severe winters migrations occur to the shelter provided by the "breaks" habitat and survival is assured. Antelope numbers are increasing following the severe winter in 1967-1966 but the recovery is not rapid.

6. Bison

During the winter months the five buffalo in the Leo B. Coleman Wildlife Exhibit were fed alfalfa hay and a small amount of "cake". Expected increases did not occur and the herd composition remains the same as last year with three Age Class IV--a bull and two cows; two yearlings--a bull and a heifer.

The animals are well adjusted to the 240-acre enclosure and no longer conceal themselves in the coulees. Range condition in the pasture remains excellent. They generally can be observed at any time and are a constant source of public enjoyment.

The mule deer in the Exhibit pasture did quite well despite our hopes to the contrary. At the beginning of the year there was one buck and four does. These are now augmented with eight fawns. In addition, the whitetail doe had a fawn which brings the total deer population to 16. "Reduction" drives will be conducted this winter.

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

1. Fur Animals

All fur animal populations on the Wildlife Range are normal but low. No harvest is recommended except for beaver. Aerial census conducted in November established the 1968 trapping quota of 85 beaver on the area of the river above Fort Peck Lake. The quota for this year was 70 and the harvest was completed without incident. Nuisance beaver control in the vicinity of Fort Peck was not authorized since the usual complaints decreased in number last year and none were received this year, indicating the effectiveness of past removal programs.

A black-footed ferret "study" was initiated after orientation and basic field work was accomplished with Mr. Donald Fortenbery of the Division of Wildlife Research. No ferrets were sighted but evidence was formed that indicates the presence of this rare and endangered species. (See Part V for details of the operation.)

2. Predators

Goose nesting success was determined to be 16% (minimum) with an outside possibility that it could be as high as 50% in the prime nesting habitat upriver from Slippery Ann during the 1966 season. Predation on eggs and adult geese by coyotes, skunks, and raccoons accounted for most of the loss.

A concerted short-term control program was requested from the Division of Wildlife Services and conducted with the assistance of Refuge personnel. Control activities were confined to ten miles of river bottom upstream of the Fred Robinson Bridge. The operation began in November 28 and was concluded April 20. The operation resulted in increased nesting success and brood size despite heavy snows that occurred during the nesting period. Also, the eggs in abandoned nests remained undisturbed long after the season was past.

Coyote control over the remainder of the Wildlife Range as requested by livestock interests was conducted by the Division of Wildlife Services. The 1080 control program was as usual modified to meet changing conditions at the annual meeting of the State, BLM, and the Division of Wildlife Services and Refuges at the Lewistown headquarters.

Mountain lions, bobcats, skunks, and raccoons are present on the Wildlife Range but pose no significant problem to the overall prey species. Predation occurs in the captive goose flock at Slippery Ann but this is controlled by personnel stationed there and losses are kept to a minimum.

3. Rodents

Mice continue to be a nuisance around home sites on the river but populations have not noticeably changed. No increase in porcupine numbers have been observed. Prairie dog towns have increased slightly on both ends of the Wildlife Range and a colony believed to have been poisoned two years ago is again becoming active. There are presently 33 known prairie dog towns on the Wildlife Range.

4. Rabbits

Both black-tailed jackrabbit and white-tail populations remain low and unchanged.

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

Populations of the above-listed birds remain unchanged except as noted below.

Bald eagles, winter residents on the Wildlife Range, concentrated on the river above Fort Peck Lake in the spring. On April 5, 24 adults and 37 sub-adults were counted in the area from Fourchette Creek to Slippery Ann. This bird along with the great horned owl are the primary avian predator on geese at Slippery Ann but vigilance by personnel stationed there discourage this activity and losses have not been excessive.

Osprey nesting activity has steadily declined from 1963 to 1965. In 1966 a rally occurred in nesting activity but production was poor. Only one nestling reached flight stage that year. This year's success was better when five young reached flight stage.

The following report by Bob Burkholder describes this activity in more detail:

"The Osprey, Pandion haliaetus, nests over water in old cottonwood snags, sometimes in heron-cormorant rookeries but more usually in isolated trees. Although such nesting sites occur elsewhere on the Charles Russell National Wildlife Range, the nesting activity is confined to the UL Bend from Devil Creek on the east to Soda Creek on the west.

In June of 1963, 11 nests containing 13 chicks were located; but in June of 1964, there were only 5 nests containing 3 eggs in this area. Only 1 nest was located in 1965. That year 16 eggs were laid in 7 nests. Two of the nests were destroyed by wave action but only 1 chick was raised to flight stage from the remaining 5 nests.

Chas M. Rasmussen

The first osprey were sighted on April 18. Ten days later 2 nests were established. The nesting peak occurred early in June with 7 nests containing 13 eggs observed June 7. On June 19, 1 nest containing 3 eggs was destroyed by the rapidly rising lake level.

The first young were sighted July 3 and on August 8, 5 young were observed in 3 nests. Only 1 other nest had eggs on this date; and since these were the first laid, they were presumed to be dormant. Another nest was destroyed by wave action.

Osprey nesting activity has steadily declined from 1963 to 1965. Last year, 1966, a rally occurred, however, nesting success was poor. Only 1 chick was produced from 16 eggs, and 2 of the 7 nests were destroyed by wave action.

This year 7 nests were again occupied, 2 were destroyed, and 5 young reached "flight stage" from a total of 13 eggs.

Canada geese use some of these same nests and it is almost certain that the geese bring off their broods before the hawks are permitted to use them. Ospreys were present in the area while the geese were incubating but it appeared that the geese remained on the nests until the broods were off. Not until then did the osprey take over."

F. Other Birds

There are almost 200 different species of birds listed for the Wildlife Range--many of which are common. These occurred in usual numbers in 1967 and provided visitors with much enjoyment.

Some first observations of the season were:

February 27	Canada Goose
March 24	Great Blue Heron
March 24	Blackbird
March 25	Meadowlark
March 27	Sparrow Hawk
March 28	Duck Hawk
March 28	Green-winged Teal
March 28	Starling
April 1	Red-winged Blackbird
April 1	Crow
April 4	Cormorant
April 8	Mourning Dove
April 8	Red-shafted Flicker
April 15	Long-billed Curlew
April 19	Osprey
April 28	White Pelican
April 28	Mountain Bluebird

Two songbirds were added to the refuge bird list--Evening Grosbeak and Green-tailed Towhee.

G. Fish

Northern pike fishing in 1966 was considered the best year in the history of the reservoir but 1967 proved even better. Several catches of pike over 25 pounds were made. The best fishing was in the Rock Creek area of the Big Dry. Most pike average 6 pounds. The Montana Department of Fish & Game in cooperation with the Bureau of Commercial Fisheries is continuing a Northern Pike-Goldeye study. They have submitted a plan to the Corps of Engineers on water levels that if followed would insure good northern pike population.

No fish plants were made in the Fort Peck Reservoir or in the Missouri River immediately below Fort Peck Dam. The State has discontinued using the "winter harbor" at Fort Peck as a pike rearing pond. The following plants were made in the dredge cut trout pond by the Montana Department of Fish & Game:

<u>Rainbow Trout</u>	<u>May-1967</u>	<u>Oct-1967</u>
3"	30,000	
9"	3,700	
8"		10,800

Fishing at the trout pond was excellent during the winter for small trout and good during the spring months for 1 to 2 pound trout. During the summer and fall months, however, catches were poor.

In the west unit interest in snagging paddlefish continued to increase this year. This unique angling method accounted for an estimated 600 fisherman use days--a 50% increase over last year. Paddlefish were taken from mid-April to late July with the best success experienced in May and June. Fish weights ranged up to 89 pounds but most were in the 40 to 70 pound weight class. Paddlefishing in this area received considerable publicity and increased public participation in this activity is expected.

Catfishing in the Missouri River yielded good catches to those using set lines and early spring catches of wall-eyed pike and sauger were good.

H. Reptiles

Few reptile sightings were reported during this period. A rattlesnake den about three miles from Slippery Ann Station was uncovered during the construction of a dike. A policy of peaceful co-existence was adopted. Another den along a roadside was discovered. The den and some of the inhabitants were photographed.

I. Diseases

No incidence of any disease was noticed this year. Leptospirosis, however, has been diagnosed in the livestock herds of the Lazy J-D Cattle Company which graze the Nichols Coulee RCA area and it is possible that this malady may have infected big game species.

Two blood samples from mule deer were collected but results are not yet available.

III. REFUGE DEVELOPMENT AND MAINTENANCE

A. Physical Development

In the west unit the following items were accomplished during the year:

Wingwalls on the bridges across Two-Calf Creek and Slippery Ann Creek were cabled back and the fill behind them repaired. Spring run-off had damaged both structures.

A cattleguard was installed on the access road to tracts 635-636. These tracts are near Highway 191 and the access road is receiving increasing public use.

Repaired sections of access road to tracts 635-636. A slide on a shale hillside had narrowed the road to the point it was difficult to move farm machinery over safely.

Reduced the grade on a section of Two-Calf Trail. This section of trail was so steep that it presented a hazard to the movement of farm machinery.

Leveled and diked a 30 acre field at tract 646. This land can now be flooded to create a waterfowl impoundment or dewatered and planted to a cereal crop for wildlife.

Constructed 5,500 feet of dike needed to complete the 78 acre waterfowl impoundment at Slippery Ann. Also constructed nesting islands and pump site. A 12" pump was installed and the area was filled with water before freeze-up.

Graded and graveled $\frac{1}{4}$ mile of turn-offs for picnic areas. These areas have caused the public considerable trouble in the past when they attempted to drive a few hundred yards off the graveled access road. Low-grade gravel available on the Wildlife Range was used, but it seems to have alleviated the problem.

A drainage ditch from the south access road to the river (approximately 300 yards) on Kelsey Coulee was constructed. The old ditch had silted in and the road was not drained properly.

A pumping platform was constructed on the river above Slippery Ann Station. Riverbank had eroded away to such an extent that there was no place left to set a pump.

Two hundred feet of riverbank was riprapped. This was the area behind steel piling which was used to face the bank a year ago in an attempt to stop erosion. The river eroded away the bank behind the pilings this spring so the pilings are being used as a retaining wall and riprap placed behind them.

One waterfowl pond at Slippery Ann was cleaned of silt and the interior banks resloped. The river water used to fill the pond has deposited silt and grossly reduced the storage capacity.

A culvert was installed at the entrance to King Island bottom. Erosion had made it impossible to move machinery into the area.

Stiles for the six big game enclosures in Nichols Coulee were built and installed. This facilitates access to the study areas and will reduce fence maintenance.

Finished contour ditch on Seven-Mile bottom. The ditch was constructed last year and required some additional finish work before it was usable.

A 1,000 bu. metal granary and slab were moved to a new location at Slippery Ann Station. This consolidates the grain storage facilities and will make loading and unloading grain easier.

Eight picnic tables and 4 toilets were constructed and placed in established picnic areas. Garbage collection facilities were also improved at public use areas.

In accordance with our Transportation Plan, approximately 138 miles of roads and trails were graded and maintained.

Normal building maintenance including painting 2 warehouses and 3 patrol cabins was accomplished during the year.

Recognition signs for the Nichols Coulee RCA (see Photo 67-997) and for entrance roads to the Wildlife Range and the Two-Calf Mountain Sheep Pasture were erected.

Twelve airstrips were constructed to provide safer landings at certain field projects. Construction was accomplished by clearing rocks and brush from the landing areas with a motor patrol.

On tract 70D, 20 acres were leveled, fertilized, and planed. An irrigation supply ditch and drainage facilities were also completed for this tract. In 1966, 77 acres of land were leveled at Fort Peck. Twenty acres

were leveled this year but no future leveling is anticipated until such time as increased yields or crops requiring irrigation are needed.

For that portion of tract 70D leveled in 1966, approximately 3,500 feet of elevated ditch was constructed and a pumping site built to facilitate irrigation. It will be 1968 before this tract will be under full irrigation. All land leveling and ditch work is engineered by the Soil Conservation Service under an agreement with this Bureau.

For many years the two-way radio facilities at Fort Peck were in need of replacement and improvement. This year a new building fully insulated and large enough to house and maintain the radio was set up. The building is wired for electric outlets, lights and heater; work benches were installed. The old antenna was replaced with a 100° directional-gain antenna which has improved contact with Lewistown and Slippery Ann.

At the Fort Peck service building several improvements were made. Four windows were added to the storage part of the building and a new fiberglass door was installed. A ceiling for this portion of the building and heating facilities were started.

The office located in the service building was remodeled. The manager's office formerly located in the Corps of Engineers administration building was moved to the Service building. A night lighting system was completed for the security yard and both shop and oil house wired for lights in accordance with safety requirements.

A new 1,000 bu. bin was set up in the security yard and the 2,000 bu. bin formerly located adjacent to Quarters #3 was removed to the security yard. The three grain bins, oil house, and trim of Quarters #3 were painted.

The old service building located in Fort Peck was cleared out and made ready for disposal. This building was originally a mess hall during construction of Fort Peck Dam. It was acquired by the Bureau in 1942 and used as the Wildlife Range headquarters until 1956. In the past few years the building has been used as a warehouse.

Approximately 12 acres of land formerly occupied by the State Game Farm was cleared and made ready for cultivation.

A new 40 h.p. electric engine was installed on the Lewistown headquarters lawn sprinkling system.

The 40-acre pasture at headquarters was fertilized with 166 lb/acre of 40% nitrogen, 15% phosphorous, 10% potassium, and 10% sulfate sulfur. Cost of aerial application was 15¢ lb.

B. Plantings

1. Aquatic and Marsh Plants

None.

2. Trees and Shrubs

Three honey locust trees and 3 seedless green ash trees were planted at Slippery Ann Station this year. It appears that 4 of the 6 survived the summer. If so, they will provide much needed shade around the residences.

A dozen assorted rose, lilac, and spirea bushes were set as foundation plantings around the station residences and appear to have survived to date.

Numerous pine, juniper, and assorted deciduous shrubs were planted around Lewistown headquarters.

3. Upland Herbaceous Plants

Approximately 25 acres of roadsides and disturbed sites were planted to western wheatgrass. The seed was applied on melting snow with a hand broadcast seeder. Germination rate was only about 10% the first year.

4. Cultivated Crops

All refuge-farmed lands in the west unit under irrigation produced good yields and were heavily used by waterfowl, wild turkeys, and big game. Seven acres of proso millet produced 770 bu. which provided considerable food for mourning doves; and 13 acres of corn yielded approximately 1,040 bu. which was used throughout the fall by 35 head of elk. A 12-acre field of barley and alfalfa was harvested when the alfalfa bloomed. The second growth alfalfa stayed green until mid-October and furnished excellent waterfowl browse during the fall migration.

Sharecropped lands produced fair yields but extremely hot weather in late June and early July caused shriveling and weight loss in the grain. Ninety-one acres of barley produced 2,550 bu. which was harvested and will be used to meet winter feeding requirements at Fort Peck. Cereal crops left standing for wildlife utilization included 2,215 bu. of winter wheat from 73 acres and 2,725 bu. of barley from 397 acres. The latter figure includes 245 acres that were flooded by high water levels in the Fort Peck Reservoir. Unfortunately, this flooding has occurred on some bottom lands each year since 1964.

On the land tracts farmed by the refuge below Fort Peck Dam, 15 acres were seeded to Red Proso Millet and 40 acres were seeded to barley. Yield on the barley was about 15 bu. per acre and 10 bu. per acre on the millet. Except for 12 acres of barley harvested in September, the refuge crops were left standing for waterfowl use. The barley and millet were completely utilized by December 15.

On the sharecropped lands, 143 acres were planted to barley. Yield totaled 4,624 bu. for an average of 32 bu. per acre. On tract 68D, 9 acres were planted to corn and sorghum, and left standing. Waterfowl use commenced about December 20 and continued through the end of the year. We intend to increase the acreage of corn next year to make feed available to waterfowl when snow cover makes barley unavailable.

C. Collections and Receipts

None.

D. Control of Vegetation

One hundred and ninety-four acres were sprayed with 2,4-D amine at the rate of $1\frac{1}{2}$ lbs. a.e./acre. Results were generally good with kill rate ranging up to 90%.

Benzabor, a soil sterilant, applied to the Slippery Ann airstrip last fall leached into the soil during the winter and was 90% effective in controlling weeds. However, it does not appear as effective where total sterilization is desired as does Ureabor and will be replaced with Ureabor for future application.

On the refuge-farmed tracts success with 2,4-D amine was excellent in the barley fields but only about 25% effective in the millet field. This was possibly due to a later spraying date for the millet.

Spraying with 2,4-D amine on the sharecropped tracts was successful this year. All sharecroppers sprayed their crops for weed control and performed necessary fallow operations.

E. Planned Burning

A 12-acre barley field and 11-acre millet field were burned this spring to facilitate land planing. There was no woody vegetation present and the fields burned clean.

F. Fires

Above-normal amounts of spring and summer rains and fewer serious lightning storms teamed to make fewer fires. The season started with a 10-acre fire on April 28. All vegetation appeared so green that it could not possibly burn but the humidity was apparently favorable and the fire burned quite hot.

The following table is a list of all reported fires and acreages:

Fire Name	Location	Date	Fuel Type	Total Acres
				Burned
Little Bunny	Sec 16 T22N R25E	4/28/67	western woodland	10
Pines	Sec 13 T24N R39E	8/17/67	" "	70
Butcher	Sec 14 T20N R20E	7/21/67	" "	NA
Phipps	Sec 18 T21N R32E	8/22/67	" "	12
Hell Creek	Sec 35 T23N R38E	9/11/67	" "	30
				<hr/> 122

Two additional small fires were found--one burned itself out; the other was suppressed entirely by ranchers. All fires were lightning-caused.

Cooperative efforts of Corps of Engineers, BLM, BSFW, U.S. Air Force, and local ranchers combine to keep acreages burned to a minimum.

IV. RESOURCE MANAGEMENT

A. Grazing

Grazing problems continue to be one of the major difficulties in administering the range.

Considerable progress has been made in reducing livestock trespass with excellent cooperation from the BLM. The present trespass problem with the exception of one case is not considered significant enough to affect the range condition.

This exception pertains to an individual who changed his class of livestock from cattle to sheep in 1960 without the knowledge of either the BLM or BSFW. He was given one year to remove the animals. He has continued to run the sheep and has been successful in keeping the case in court through a series of "appeals". This legally stops an action that might be taken. Many approaches have been attempted to settle this problem but none has been successful. We are hopeful a decision can soon be reached that is compatible with Wildlife Range objectives.

The BLM has completed the adjudication throughout the Wildlife Range and is attempting to move into more intensive management of public domain lands. This means more fences, reservoirs, wells, and range improvements to properly distribute livestock and establish rotational pastures. Although these grazing systems are usually good practices to improve range conditions, they are not always good wildlife management practices. Problems of this type will continue to plague us as long as there is dual administration--part of which is administered under authority of the Taylor Grazing Act.

Plans call for updating our range survey. The ecological site and condition method will be used exclusively on future surveys. Nearly 90,000 acres are scheduled for next year.

General range conditions remain fair to good throughout the entire Wildlife Range.

B. Haying

Alfalfa yields this year averaged slightly over 2 ton/acre as compared to 1.7 ton/acre last year. This increase was due primarily to better growing conditions, longer growing seasons, and improved irrigation practices. The wild hay averaged $\frac{1}{2}$ ton/acre which is similar to last year's production.

Alfalfa continues to be one of the most important wildlife (especially big game) feeds raised. One 10-acre field of newly seeded alfalfa near Slippery Ann was completely utilized by elk, deer, and geese. The animals seemed to prefer the alfalfa to the corn and millet in adjoining fields.

C. Fur Harvest

Beaver on the west end again showed an increase and permits were issued for 85 animals for the 1967-68 season. Last year's quota of 70 animals (1966-67) was filled before the end of the trapping season. No other fur harvest permits were issued. The following is the quota recommended by trapping unit for 1967-68, based upon an annual aerial cache count conducted in November:

Unit I	25 beaver
Unit II	35 "
Unit III	25 "
Unit IV	none
Unit V	none

Units IV and V are areas affected by the increased lake level. Beaver have moved from these units, concentrating in the upstream area from 7-Mile River to the western boundary of the Wildlife Range (Units I, II, and III).

D. Timber Removal

None.

E. Commercial Fishing

Two fishermen were issued permits for commercial operations on the Fort Peck Reservoir. One operator worked out of Fort Peck and concentrated efforts on goldeye while the other based at Devil Creek and operated over most of the lake.

Commercial catches were as follows:

Species	Pounds Taken		
	1965	1966	1967
Buffalo	130,340	157,092	167,600
Catfish	7,603	10,965	6,300
Carp	1,120	3,100	79,800
Drum	440	1,325	3,340
White Carp	-	12,800	-
Goldeye	-	-	46,000
Totals	139,503	185,282	303,040

Another permit was issued for commercial fishing in the dredge cuts below Fort Peck Dam. Listed below are the results of this operation as furnished by the Montana Department of Fish & Game.

Species	Poundage Taken
Buffalo	7,600
Carp	300
White Carp	600
Total	8,500

F. Aircraft Operation

Flight time, including all aircraft types during calendar year 1967, totaled 441.1 hours. This was but 0.1 hour less than last year. Of this total about 400 hours were flown in the contract Supercub and the remainder in special charter aircraft. The contract price this year was \$12.74 per hour, dry rate.

Flight time for Bureau operations, other than Charles Russell Wildlife Range, increased again this year from 115.7 hours to 126.3 hours. Regional Office use decreased by one-third as did Bowdoin NWR. The Wetlands Acquisition Program, however, more than made up the slack. Benton Lake NWR flying increased slightly from last year. Total flying time for other than CMR is listed as follows:

	1967	1966
Wetlands	46.8	5.2
✓ Benton Lake NWR	51.8	43.6
✓ Bowdoin NWR	13.7	23.0
Regional Office	14.7	10.0
✓ Medicine Lake NWR	4.0	5.2
✓ Red Rock Lakes NWR	--	15.0
Bureau of Outdoor Recreation	--	9.0
Total Hours	126.3	115.7

The airplane is a most essential tool in all activities on the Wildlife Range. This includes census work, fire patrol, enforcement patrol, transport of personnel and equipment, search and rescue, aerial seeding, livestock trespass, goose banding, and ferret studies, to mention a few. Census work is removed from the "educated guess" category to one of more finite measurement. Livestock trespass has been reduced significantly. Many man hours and hard use of vehicles is saved. In short, management of the Wildlife Range is becoming more of a reality as a result of the aircraft operation.

V. FIELD INVESTIGATION OR APPLIED RESEARCH

A. Progress Report

1. Nichols Coulee Resource Conservation Area

Investigative studies and development of physical structures on the Nichols Coulee RCA have progressed according to plan. The latter was completed this year insofar as Bureau commitments are concerned and collection of data continues.

The four pasture rest-rotation grazing plan initiated by the Bureau of Land Management in 1965 has been modified each year to meet changing conditions. Such modifications in stocking rates, pasture use, and rotation seriously complicate data analysis especially when trying to tie in wildlife response to the management system.

Wildlife trends are based on vegetative use analysis, pellet group studies, and aerial census. The latter is keyed to snow cover which fortunately has occurred the past several years. All information to date on the RCA has indicated a severe decline in mule deer, the indicator species. Deer numbers elsewhere on the Wildlife Range have shown a downward trend but not at the high rate of that on the study area.

Identical measurements were completed on all vegetation and pellet studies in the six enclosure complexes. The data, recorded on page reader forms, has been sent to the statistical analysis section of the Denver Wildlife Research Laboratory for IBM runs and analysis.

Assessment of prairie dog colonies and waterfowl use of stockwater ponds continued this past year and the former received additional attention because of the black-footed ferret study which was started in the late summer.

Another accomplishment is the documentation of the entire project in a joint BLM-BSFW report. This report is not yet final but should be complete in early 1968. It describes background, goals, and study procedures with tentative results as they may occur from both Bureau operations.

2. Bird Banding

Interest in mountain and upland plover continues and young birds are banded as opportunity permits. During field work in the Nichols Coulee RCA, 19 mountain plovers and 2 killdeer were banded. Although there were several sightings of upland plovers, none were available for banding. To date only one band return is on record. This juvenile mountain plover was banded June 29, 1965 and was recovered from a jet engine at Bergstrom Air Force Base, Austin, Texas on December 1, 1965. One black duck was banded at Fort Peck.

The post season banding quota of 1,000 wintering mallards was exceeded by 18 birds at Fort Peck. Only 310 of the 500 mallard quota were banded at Lewistown. This program was terminated since sufficient data had been accumulated to satisfy management goals.

A dove banding program was started at Slippery Ann Station as part of the student trainee development program and 306 mourning doves were banded. This program will be continued and expanded in 1968.

Sixty geese associated with the captive flock at Slippery Ann were banded--55 of these were birds of the year and so identified with a green plastic band on the right leg. The number of young geese banded this year is less than previous years because 50 unbanded goslings were given to the State of Montana.

The following table documents the color marking used to date:

Year	No.	Color	Location
1962	111	Red	Left leg
1963	118	Red	Right leg
1964	114	White	Right leg
1965	75	White	Left leg
1966	121	Green	Left leg
1967*	55	Green	Right leg

*50 additional birds produced this year were unmarked and given to the State of Montana.

Band returns since 1958 indicate 33% of the birds produced at Slippery Ann are recovered in Montana. Alberta and Saskatchewan together account for 30% and Colorado and Wyoming another 16%. Idaho, Arizona, the Dakotas, Nebraska, Oklahoma, and New Mexico are also represented. The northernmost recovery is Northwest Territories, Canada.

A new Canada goose banding program was started on the Wildlife Range this year. Since 1964 aerial counts have indicated a gradual build-up of moulting Canada geese on Fort Peck Reservoir from Sutherland Bay to the Pines--1,200, 1,500 and 1,700 in the respective years of 1965, 1966, and 1967.

It was assumed that the bulk of these geese were non-breeders since few young were present in the concentration but actually all that was known about these birds was the number and species.

A large scale banding effort was made in cooperation with the Division of Research, the Montana Department of Fish & Game, and the Corps of Engineers, using portable traps, boats, and airplanes. A total of 211 geese were captured and 199 were banded. Thirty-four percent of these were sexed and aged and 75% of the females checked were non-breeders. There were 11 recaptures from other banding stations but none of these were from Slippery Ann. This group of birds is likely the largest concentration of non-breeding birds in Central Montana.

A lot of time was profitably spent developing techniques and special equipment that will benefit next year's banding effort. The goal is to band and gather information on 500 of these geese next year.

3. Black-footed Ferret Investigations

This rare animal is indigenous to the Wildlife Range but records are few and none are current. The most recent verification in Eastern Montana (a road kill) occurred in 1953 near Alzada, southeast of Miles City.

Since there are over 30 active prairie dog towns on the Wildlife Range and many of these are quite isolated from human activities, it seems probable that the ferret still exists on the range.

In October, Mr. D. K. Fortenbery, Bureau Wildlife Research Biologist, spent nine days in the Wildlife Range searching for ferrets and ferret signs. Part of this time was devoted to orientation of personnel in order that the investigation could be continued in his absence.

Of 26 dog towns checked, 7 showed some evidence of ferret activities and 2 of these had well-formed trenches. This is the best indication of ferrets that is presently known outside of seeing the animal itself.

Mr. Fortenbery reported: "I believe that ferrets do exist on the Wildlife Range and suspect that it is only a matter of someone spending enough time searching until they are found."

This is an interesting though time-consuming project and it is one of national significance. Additional work is planned when a snow cover exists. Hopefully, even more positive results can be reported next year.

VI. PUBLIC RELATIONS

A. Recreational Uses

Sale of Golden Eagle permits increased from 25 sold last year to 31 of the \$7 permits for 1967. Most of these were purchased by local people who were making use of local Forest Service campgrounds or those planning trips to the national parks as a part of their vacation.

In comparing our NR-6 reports, we find total visits increased from 523,799 in 1966 to 870,250 visits during 1967, an increase of about 40%. Meanwhile, visits by hunters decreased to 12,200 as compared to 15,400 of last year, and fishermen paid us 50,000 visits this year as compared to 78,391 during 1966.

We are not claiming that all this was actual increase but more likely that a good portion was due to better gathering of data. The Corps of Engineers used car counters on a number of their facilities, giving what we think was a far more accurate figure than the estimates we had to use in the past.

B. Wildlife Range Visitors1. Lewistown Headquarters ✓January

- 9 L. R. Jacoby & S.E. Hottenstein, BSWF, Regional Office.
U.L. Bend project.
- 12 Bob Ross & Joe Zacek, SCS. U.L. Bend project.
- 17 Jim Mitchell & Neil Martin, Montana F&G. Big game & sheep.
- 18&31 T.E. Smith, BSWF, Regional Office. U.L. Bend project.
- 26 Dale Witt, Montana F&G. Waterfowl banding.
- 31 George Wiseman, BSWF, Regional Office. Annual policy meeting with BLM.

February

- 8 Harold Corbin, BSWF, Regional Office. U.L. Bend project.
- 10 R. L. Eng, Montana State University. Student project.

March

- 30 R. E. Kalcsó, Bob Adams, L. W. Morrison, Allen Whitten & Fred McBride, BLM. Fire agreement.

April

- 6 E. E. Seyler, Wildlife Services. Mutual problems.
- 7 T. E. Smith & R. E. Munding, BSWF, Regional Office.
W. R. Town. U.L. Bend project.
- 10 Rolland Jorgensen, BLM. Grazing.
- 14 J. G. Augsburg & F. L. Kenney, National Bison Range.
Courtesy call.
- 18 Joe Zahler, Station KXLO. Radio program.

May

- 4 J. B. Helvie, Bowdoin NWR; D. N. White & A. W. Waller,
Medicine NWR. Courtesy call.
- 18 Harold Hardesty, Regional transport driver. Property transfer.
- 5 Joe Montgomery & Don Pfau. Missouri River development.
- 15 Elihu Berg, Pat O'Halloran & D. O. Kettinger, MRBS. Courtesy call.
- 17 Homer Bradley, Des Lacs NWR. Courtesy call.
Vernon Ekedahl, BSWF, Regional Office. Inspection.
Frank Martin, BSWF, Region 3. Orientation.

June

- 6 L. R. Jacoby, BSWF, Regional Office. Inspection.
D. O. Kettinger & Pat O'Halloran, MRBS. Courtesy call.
- 7 R. D. Munding & T. E. Smith, BSWF, Regional Office.
U.L. Bend project.
- 26 Vic Ecklund, BOR. Missouri River report.
Carl Lind, BLM. Mutual problems.

July

- 11 Harvey Miller, BSWF. Fort Peck goose banding.
- 14 W. M. Lindsey & T. E. Smith, BSWF, Regional Office. Wetlands.
- 25 David Murphy, County Commissioner. Lake Mason.
Lee Zeller, Montana F&G. Wetlands.

August

- 3 John Carlsen, Sherburne NWR. Vacation.
- 7 W. H. Adams, BLM, McGrath, Alaska. Visit.

August

- 14 Mr. Malchus, U.S. Weather Bureau. Check weather station.
- 18 George Wiseman, BSFW, Regional Office. Nichols Coulee inspection.
- 22 J. T. Verderveen, ERBS Mgt. Consultant. Public Land Law Review.
- 23 George Petkanis, BSFW, Central Office, & R. D. Mundinger, BSFW, Regional Office, U.L. Bend project.
- 24 R. H. Town, BSFW, Pickstown, South Dakota. Vacation.
- 25 Russ Ferbrache, GSA. Surplus property.

September

- 11 Vernon Ekedahl & W. M. Lindsey, BSFW, Regional Office. Wetlands inspection.
- 13 Eugene Stroops, Benton Lake NWR. Surplus property.
- 14 Glenn Cole, NPS. Courtesy visit.
Jim Chandler, Corps of Engineers. Mutual problems.
D. I. Gretz, Wildlife Services. Courtesy visit.
- 15 Skeet Dart, BSFW, (retired). Courtesy call.
Jack Helvie & Gene Sipe, Bowdoin NWR; Donald White, Medicine Lake NWR. Courtesy visit.
Fred Staunton, BSFW, (retired). Courtesy visit.
C. A. Powell, Corps of Engineers. Land management.
- 20 W. H. Mondell, U.S. Solicitor's Office. Lake Mason water rights.
- 27 A. W. Waller, Medicine Lake NWR. Transfer surplus property.
- 28 W. V. Kennedy, USGS. Data for geological survey maps.
H. V. Ryan, FBI. Miller case.
- 29 Ged Devan, Ravalli NWR. Check surplus property.
E.M. Richland, FS. Courtesy call.

October

- 2 Jack Helvie, Bowdoin NWR. Check surplus property.
- 5 J.A. Maierle, private consulting engineer. U.L. Bend project.
- 9-13 George Wiseman, BSFW, Regional Office. O&M inspection.
- 10 Fred Staunton, BSFW, (retired). Meritorious Service Award.
- 12 Ed Collins, Columbia NWR. Courtesy visit.

October

- 16 Harold Hardesty, Regional transport driver. Property transfer.
- 17 D. K. Fortenbery, BSFW. Black-footed ferret study.
Tom Davies, Ravalli NWR. Surplus property.
- 23 Victor May, National Bison Range. Surplus property.
- 25 L. F. Reichmuth, Red Cross first-aid classes.
- 31 R. E. Ducret & Don Gifford, BSFW, Regional Office.
Survey new land acquisition at headquarters.

November

- 1 Duane Rubink, C. B. Zook, C. B. Zook, E. L. Chapel, M. A. Bateman, Darrell Gretz, N. R. Miner and 5 others, Wildlife Services. Neil Martin, Montana F&G, Larry Eichorn, BLM. Lethal bait stations and policies (1968).
- 6 Rolland Jorgensen & Joe Gibson, BLM. Lethal bait stations and policies (1968).
- 8 R. D. Mundinger & T. E. Smith, BSFW, Regional Office. U.L. Bend project.
- 22 N. R. Miner, Wildlife Services. Lethal bait stations.

2. Slippery Ann Station ✓March

- 23 Harold Bryant, Corps of Engineers; Frank Cortnell & Mike Waddell, professional photographers. Engaged by COE to make movie of area.

April

- 16 Montana Pilots Association. Office call.

June

- 7 L. R. Jacoby, BSFW, Regional Engineer. Inspection.
- 14 Montana F&G personnel. Pick up 50 goslings.
- 28 Forrest Crossen, author. Scouting material for future books.

July

- 2 Mr. Crosset, National Geographic Society, and party of 23. Toured station.
Orville Gray, Montana Wilderness Society. Toured station.
- 10&11 Harvey Miller, NPWRC. Give instruction in age and sex determinations of Canada geese.

July

- 12 Norman Warneke, Malheur JCC. Courtesy call.
- 18 Charles Loveless, Denver WRC. Inspection of exclosures in Nichols Coulee.

August

- 23 R. D. Munding & George Petkanis, BSWF, Regional Office. Meet with Manager Martin.
- 30&31 George Wiseman, BSWF, Regional Office. Nichols Coulee range tour.

October

- 3&4 W. F. Farnes, former Foreman. Courtesy call.
- 11 George Wiseman, BSWF, Regional Office. O&M inspection.
- 13&14 Harold Bryant, Corps of Engineers; Frank Cortnell & Mike Waddell, professional photographers. Engaged by COE to make movie of area.
- 17-27 Don Fortenbery, BSWF, Black-footed ferret investigation.

3. Fort Peck Station ✓January

- 10 Marvin Plenert, BSWF. Courtesy call.
- 11 James Turland, Valley Co-op. Power line right-of-way. Ted Thompson, BLM. Surplus property.

April

- 13 Don Combs, USGMA. Investigate violation.

June

- 7 L. R. Jacoby, BSWF, Regional Office. Inspection.
- 29 Jack Helvie & Gene Sipe, Bowdoin NWR. Surplus property.

July

- 5 Harvey Miller, NPWRC; Gene Stroops, Benton Lake NWR; Dale Witt, Montana F&G. Goose banding.

August

- 15 George Wiseman, BSWF, Regional Office. Inspection.
- 23 Don White & John Gustophenson, Medicine Lake NWR. Courtesy call.

September

- 14 Vernon Ekedahl & John Lindsey, BSWF, Regional Office. Courtesy call.

October

12 George Wiseman, BSWF, Regional Office. O&M inspection.

Frequent visitors at the Fort Peck Station throughout the year included Wildlife Range personnel from Lewistown and Slippery Ann, Montana Department of Fish & Game (District IV in Glasgow), Corps of Engineers personnel from Fort Peck and Omaha, and BLM personnel from both Miles City and Malta.

C. Refuge Participation1. Talks and FilmsJanuary

23 Ramelli--slide/talk, Lewistown Rotary Club, on CMR and influence on local economy.
24 Kaschke--slide/talk, Worden Lions Club, on CMR.

March

7 Gibbons--film/talk, Fort Peck Volunteer Firemen, "Outboard Outing".
14 Gibbons--film/talk, Coast Guard Auxiliary, on boating safety.
20-23 Ramelli--film/talk, 6 schools (1300), National Wildlife Week.
21 Stollberg--slide/talk, Malta Kiwanis Club, on CMR; also gave talk on CMR to Lewistown Lions Club.
24 Ramelli--film/talk, Lewistown Rotary, on National Wildlife Week.
30 Gibbons--film/talk, Big Muddy Sportsmen's Club, "Alaska Caribou" and "Safety in Scuba Diving".

April

12 Ramelli--slide/talk, Salt Creek 4-H Club, on CMR.
19 Ramelli--film/talk, Rock Creek School, on wildlife and safety.
21 Gibbons--film/talk, Big Muddy Sportsmen's Club, "Outboard Outing".
24 Ramelli--film/talk, Fergus Key Club, on fishing safety.

August

15 Ramelli--film/talk, Slippery Ann personnel and Rock Creek School, "Sea Otters of Anchitka" & "Safety at Work".

October

9 Ramelli--slide/talk, Lutheran Brotherhood, on CMR.
16 Martin--slide/talk, Lewistown Rotary Club on employment and career opportunities in the wildlife field.
19 Martin--slide/talk, Lewistown Lions Club, on employment and career opportunities in the wildlife field.
24 Ramelli--film/talk to Slippery Ann personnel and Rock Creek School, "Know Your Ducks", "Safety", & "Pulse of Life".
26 Burkholder--slide/talk, Lewistown Democratic Women's Club, on CMR.

November

10 Ramelli--slide/talk to Lewistown VFW Club, on CMR.
27 Martin--slide/talk, 100 Cub Scouts and parents, on CMR.

2. Meetings

January

- 13-15 Burkholder and Kaschke assisted with mid-winter Lions Club Conference at Lewistown.
- 23 Ramelli participated in BLM meeting on recreational development on Missouri River from Fort Benton to Robinson Bridge.
- 25-26 Kaschke and Gibbons participated with BLM in protest meeting by range users in Miles City.

February

- 2-3 Acting Manager and his assistants participated in annual BSFW-BLM policy meeting at Lewistown.
- 21 Ramelli gave talk on predator control work on CMR at annual meeting of Garfield County Wool Growers.

March

- 2 Gibbons attended Interagency Fire Control Meeting at Billings.
- 3 Kaschke and Peck participated in Chain Buttes Grazing District meeting.
- 5 Stollberg met at Helena with Ekedahl and Wiseman and Montana Department of Fish & Game on seasons and mutual activities.
- 20 Kaschke and Peck attended luncheon at Malta Chamber of Commerce. Discussed proposed bison pasture.

April

- 3 Kaschke attended Billings meeting with BLM, Forest Service, and Solicitor on Miller trespass case.
- 4 Kaschke participated in Advisory Board Meeting with Miles City BLM.
- 18 Stollberg attended Fort Peck Interagency meeting at Glasgow.

May

- 5 Stollberg and Burkholder participated in Fergus Rod & Gun Club Meeting.

June

- 2-3 Ramelli, Burkholder, and Gibbons attended Wildlife Federation Meeting at Great Falls.

July

- 13-15 Martin attended Public Land Law Review Meetings at Billings and Fort Peck.
- 24 Martin and Kaschke attended Soil Conservation Society Meeting at Lewistown.

September

- 26-28 Martin participated in the Wildlife Services annual workshop held at the Custer National Forest.

October

- 7 Ramelli gave short talk at annual Tri-County Sportsmen's Association Banquet at Roundup.
- 11 Ramelli participated in the Fort Peck Interagency Council Meeting at Miles City.

November

- 6 Kaschke attended Indian Buttes Grazing District Meeting at Dovetail.

December

- 16 Gibbons attended Big Muddy Sportsmen's Club Meeting. Burkholder acted as Co-chairman at the Fergus County High School Lay Committee of the Lions Club.

Throughout the year participation in local Service Clubs was as follows:

Frank Martin	Kiwanis Club
Bob Burkholder	Lions Club
Lloyd Ramelli	Rotary Club
Marvin Kaschke	Lions Club
Linda Wicks	Soroptimists

3. Tours

- May 16 Ramelli on field tour with BLM and Montana Department of Fish & Game concerning sagebrush control experiments work in Petroleum County.
- May 25 Ramelli conducted tour with Moore High School Conservation Class on west end of Wildlife Range.
- July 3 Peck conducted Wilderness Society group of 20 over the Rocky Point area.
- August Martin, Kaschke, Burkholder, and Peck participated in Nichols 30-31 Coulee tour with George Wiseman and BLM.
- Sept 26 Ramelli, Burkholder, and Kaschke attended range tour of BLM-Montana Department of Fish & Game sagebrush control study.
- October Martin and Ramelli on historical site tour with Joe Montgomery 18 and group to Soda Creek, Crooked Creek, and Musselshell area.

4. Publications and News Releases

- March Burkholder wrote feature article on the prairie dog for five Central Montana newspapers.
- July Burkholder wrote feature article on the Slippery Ann goose flock for Central Montana newspapers.
- August Martin wrote feature article with photographs on Corry O'Brien and his work under our YOC project.
- November Burkholder worked with local reporter on article concerning the black-footed ferret study which is awaiting publication.

5. Training. (See Section G for details)

Feb 13-17 Ramelli, Burkholder, Kaschke, Gibbons, and Peck attended Regional Conference at Portland.
 April 14- Kaschke attended Mid-Managers Training School at Arden
 May 18 Hills, Minneapolis.
 May 5 Ramelli, Burkholder, Peck, Jones, Gibbons, Gilbert, Sullivan, and Sage attended the GSA defensive driving course at Lewistown.
 Sept 18-21 Ramelli, Burkholder, Kaschke, Gibbons, and Peck attended the banding and enforcement workshop at Tule Lake.
 Sept 19 Martin attended BLM Workshop at Malta.
 Sept 26 Martin attended GSA defensive driving course at Wildlife Services Workshop.
 Dec 4-7 Wicks attended Regional Office Clerical Workshop.

D. Hunting

Hunting seasons were particularly complicated on the Wildlife Range this year. Seasons are set by state districts, three of which are superimposed upon the Wildlife Range. Each of these districts had different opening and closing dates for most species of big game.

Elk. Elk could be hunted somewhere on the Wildlife Range for 66 days. The earliest opening was for the archery season on October 8, and the last rifle permit hunt closed on December 24. During the 21-day archery season, 21 elk were known killed.

During rifle seasons, 40 permit holders on the south side killed 20 elk, and 120 permits on the north side netted another 104. Hunter success varied from 50% on the south side-west end to almost 100% on the north side-east end.

Bow hunters success was 33-1/3% greater than last year in the total number taken. Last year's archers killed 7 elk on each end of the Wildlife Range, but this year a disproportionate kill resulted with 19 of the 21 animals coming from the east unit.

In the past several years, interest in bow hunting, especially for elk on the Wildlife Range, has increased tremendously. Previously the total number killed by archers was unpredictable and of little consequence. However, this is no longer true as evidenced by the relatively heavy kill the past two years. When the State sets quotas for the rifle permit hunt, the archery kill should now be considered and quotas reduced accordingly. Recommendations have been made to that effect.

A total of 11 elk on the east end and 2 on the west end were believed to have been killed either as cripples that were not recovered or as animals illegally taken. The total known kill including both legal and illegal animals is 158; and it is estimated that the actual loss is 170.

Deer. The number of deer hunters declined slightly again this year. This is due primarily to poor hunter success which reflects a low deer population. This year in order to measure this factor more precisely, a questionnaire was implemented. As previously mentioned, the average reporting hunter spent 5.3 days per deer and about half of these were unsuccessful. Consequently, less liberal regulations are to be recommended for next year.

In the case of white-tailed deer, few animals were taken and an increased harvest is encouraged.

In the past, hunter field checks and State information was used but these sources were not reconcilable and neither gave a true picture of the actual hunter success on the Wildlife Range.

For example, at the Willow Creek checking station (Fort Peck), opening day hunter success increased slightly. Hunters numbering 210, 61 mule deer and 1 white-tailed deer were checked by State and Bureau personnel. Hunter success was 30% this year; 28% in 1966; and 21% during 1965.

Another source of information is contained in Table 1, which is on the following page. Here, again, the information encompasses more than just the Wildlife Range area but does show the increasingly poor hunter success that has been described.

Antelope. All of the Wildlife Range is open except for the small administrative closure at Slippery Ann Station, the Fort Peck townsite, and the bighorn sheep enclosure. Antelope use the area on an "on-and-off" basis but the extent of hunting is unknown. We do know that many hunters avail themselves of the privilege of hunting antelope on the Wildlife Range. These animals are hunted under a state quota system.

Upland Game. Sharptail grouse were again plentiful in the Big Dry area and most of the hunting for this species was in that area. A few hunters were checked in Valley and Garfield counties, but success was lower than in McCone County. Sage hen populations were lower this year and hunter success was consequently lower. The tables included for general information reflect opening day success for hunters primarily in McCone County. On opening day heavy rain prevented many hunters from getting out so the lower figures for this year do not necessarily mean poorer hunting for the season.

Pheasants and Hungarian partridge were in low supply this year and hunter success was low. Hunting pressure for pheasants at Fort Peck was very light simply because the pheasants are almost gone.

Waterfowl. A long mild fall spread the migration of waterfowl over a considerable period. Most stock ponds and small streams remained free of ice until late November and waterfowl in the area were widely dispersed. At Slippery Ann, peak goose numbers during fall migration were 500 compared with 800 a year ago.

Table I. Summary of Deer Kill Information Obtained At Glasgow and Malta Elk Drawings --

1964, 1965, 1966 and 1967¹.

	G L A S G O W								M A L T A							
	Number				Percent				Number				Percent			
	'64	'65	'66	'67	'64	'65	'66	'67	'64	'65	'66	'67	'64	'65	'66	'67
1. Licenses checked	1797	2065	1864	1404					934	801	932	1013				
2. Kill per 100 licenses	83	69	71	63					72	69	84	54				
3. Mule deer kill	1226	969	751	535	82	68	57	60	541	410	539	415	80	74	69	75
4. Whitetailed deer kill	264	448	573	353	18	32	43	40	135	146	240	135	20	26	31	25
5. Composition of mule deer killed:																
bucks	729	589	429	349	59	61	57	65	359	294	366	312	66	72	68	75
does	425	326	265	160	35	34	35	30	146	104	151	96	27	25	28	23
fawns	72	54	57	26	6	5	8	5	36	12	22	7	7	3	22	2
6. Composition of white-tailed deer killed:																
bucks	167	287	360	252	63	64	63	71	92	98	157	95	69	67	65	70
does	80	134	172	86	30	30	30	24	38	39	72	36	28	27	30	27
fawns	17	27	41	15	7	6	7	5	4	9	11	4	3	6	5	3

1. Registration was held on Friday and Saturday before close of general season.

2. "Licenses checked" includes only those applicants possessing deer tags.

Table II. Prairie Grouse Opening Day Hunter Harvest Data, Fort Peck Dam, 1965, 1966, and 1967.

	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>13 yr. Average</u>
No. of Hunters	85	104	85	131
Hours hunted	304	473	340	515
Total birds	30	199	119	198
Birds/hunter	0.4	1.9	1.4	1.5
Hours per bird	10.1	2.4	2.9	2.6
Sharp-tailed Grouse				
No. birds	21	147	90	133
Birds/hunter	0.2	1.4	1.1	1.0
No. adults	6	46	19	44
No. juveniles	15	101	71	82
Juv./100 adults	---	220	376	186
Sage Grouse				
No. birds	7	40	27	46
Birds/hunter	0.1	0.4	0.3	
No. adult females	0	1	6	6
No. juveniles	7	19	20	43
Juv./100 adult females	---	---	---	717
Hungarian Partridge				
No. birds	2	12	2	30
No. adults	1	3	1	7
No. juveniles	1	9	1	20
Juv./100 adults	---	---	---	286

Table III. Prairie Grouse Opening Day Hunter Harvest Data, Malta,
1965, 1966 and 1967

	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>10-yr. Average</u>
No. of hunters	97	106	63	95
Hours hunted	167	395	329	347
Total birds	154	268	103	194
Birds/hunter	1.6	2.5	1.6	2.0
Hours per bird	1.7	1.5	3.2	1.8
Sharp-tailed Grouse				
No. birds	21	86	20	30
Birds/hunter	0.2	0.8	0.3	0.3
No. adults	3	29	3	8
No. juveniles	18	55	14	24
Juv./100 adults	600	196	470	300
Sage Grouse				
No. birds	127	166	72	149
Birds/hunter	1.3	1.6	1.1	1.6
No. adult females	2	25	15	18
No. juveniles	108	108	38	102
Juv./100 adult females	5400	432	253	570
Hungarian Partridge				
No. birds	6	16	11	27
No. adults	1	4	4	6
No. juveniles	3	12	2	14
Juv./100 adults	---	---	---	236

Waterfowl food in the form of cereal grains was abundant. A 12-acre barley field adjacent to the riverbank, which was left unharvested, received heavy use by 400 mallards. Geese spent considerable time on a new planting of alfalfa at Slippery Ann Station and on a harvested field of barley.

No ducks were observed in the west unit after November 24. Goose numbers dropped from 450 to 250 by December 1 and appear to have stabilized pending more severe weather.

Goose hunter success on the Wildlife Range was very poor due to the high water on the upper end of the lake. River bottoms that were used outside the closed area last year were under water this year and most of the goose feeding and nesting activity occurred further upstream in the area closed to hunting. Goose hunting success was good in the feeding areas outside the Wildlife Range as the birds frequented these areas in Fergus, Petroleum, and Phillips counties.

An estimated 285 ducks were taken on the public hunting grounds at Fort Peck by an estimated 148 hunters. The bag limit of 2 mallards was the same as the preceding year, but migrants were fewer this year and much later in arriving due to the mild weather thus success was about one-third that of 1966. During the last two weeks of the waterfowl season, hunters enjoyed the only really good shooting of the season. Hunting pressure on the public hunting area west of Timber Creek was very light and no known kills were reported.

E. Violations

Chester McDermott for elk taken with false license 11/8. Fined \$28.50 with license revoked for 16 months. Apprehended by State Warden Quiring.

Gary Kruger for wanton waste of elk 11/12. Fined \$28.50 with license revoked for 16 months. Apprehended by State Warden Quiring.

Jon Bish took elk out of season 12/3. Fined \$50.00 and 30 day jail sentence, which was suspended. Apprehended by Manager Gibbons; assisted by State Wardens Graff and Bright.

Violations processed by state wardens at Fort Peck and Glasgow:

	<u>No.</u>	<u>Total Fine</u>
Big game	5	\$ 600.00
Game birds	4	55.00
Boating	17	238.00
Fishing	32	824.00
Closed area (hunting)	2	55.00
Litter	4	114.00

F. Safety

We closed the period with a safety record of 332 days without a lost-time accident. This is not the most desirable record and we intend to add a year to this for the next report.

Safety meetings are held in conjunction with our bi-weekly staff meetings. Due to our staff being scattered as they are this offers the most efficient means and the best participation we can attain. In addition, A safety film is shown at the Lewistown and Slippery Ann stations each month.

A Red Cross first-aid course (see section on Training) was given at Slippery Ann. This course was completed October 31 when certificates were awarded to 13 employees and to 4 family members and interested neighbors. At the end of the period several members of the staff were attending an advanced first-aid course offered by the Red Cross.

A plan is underway to establish and designate landing areas throughout the Wildlife Range. Twelve such areas have been so designated in places where field activities are concentrated. The aircraft operation's danger potential has been and will continue to be reduced at every opportunity.

Although it is difficult to measure, the employees' attitude regarding safety is improving here on CMR in all categories of the operation. A safety consciousness has been established and is being constantly improved.

G. Training

Biologists Kaschke and Burkholder and Managers Ramelli, Peck, and Gibbons attended the Regional Conference at Portland during mid-February. The general feeling was that this was one of the better conferences attended.

Marvin Kaschke was selected for the spring session of the mid-managers course at Arden Hills, Minneapolis. He reported a very informative session.

A training course in defensive driving by GSA was given at Lewistown. Personnel attending were Charles Gibbons, Sam Sage (Fort Peck); Charles Peck and Harold Jones (Slippery Ann); and Dean Gilbert, Jerry Sullivan, Bob Burkholder and Lloyd Ramelli (Lewistown).

Charles Gibbons was called to the Central Office on a special two-week assignment with the Refuge Division. While there, he assisted in compiling data pertaining to resident game on national wildlife refuges. He was also able to benefit from a general orientation in the functions of the Washington office.

Manager Frank Martin took the GSA defensive driving course while attending the Wildlife Services Workshop.

We employed one student under the Youth Opportunity Program. Corry O'Brien put in a very profitable summer with us. His work and training centered around maintenance and shop work at headquarters. Corry is now attending Junior College at Miles City. Special credit is due to the shop staff for their efforts in making this project a success.

A class in first aid was conducted for Wildlife Range personnel by a representative of the Red Cross. A total of 13 employees completed the course and were issued certificates. In addition, Mrs. Peck and Mrs. Jones along with two interested neighbors completed the course.

The class was also attended by all the students of the C.K. Creek School. They did not receive certificates since the Red Cross does not issue these to anyone under the age of 16. From their enthusiasm and willingness, these students are likely to have derived more from the class than their elders.

During September, Managers Ramelli, Peck, and Gibbons and Biologists Kaschke and Burkholder attended the banding and enforcement workshop at Tule Lake. This was an especially good course. Modern techniques, the values of banding, methods of aging, etc., were of great value to all.

An advanced Red Cross first-aid course was started during November. Several members of the staff and their wives are participating and at the end of the period this course was well on its way to completion.

Mrs. Linda Wicks participated in the Clerical Workshop at Portland during December. She reported a very worthwhile and enjoyable session.

VII. OTHER ITEMS

A. Items of Interest

The Wildlife Inventory Plan for Charles Russell National Wildlife Range, prepared by the Pilot-Biologist, was completed in March and submitted to the Regional Office for review.

Two fishermen lost overnight and adrift in their boat on Fort Peck Reservoir were located early the next morning by Bob Burkholder and George Wiseman flying a chartered aircraft. Gibbons at Fort Peck was alerted and he completed the rescue by boat.

Hunter access to the Wildlife Range in the Squaw Creek-Devil Creek area was closed by a private landowner. The locked gate, effecting the closure, was within 100 yards of the national wildlife refuge boundary on private land. Negotiations are underway to solve this problem and this may involve a relocation of the existing road to circumvent the private land.

Kaschke assumed leadership of the Silver Mountain Ski Club, having previously served as secretary and vice-president. A new ski area development in the Snowy Mountains is being planned for the Central Montana area.

Again this year the U.S. Army, Corps of Engineers Nuclear Cratering Group were active on Duck Creek, west of Fort Peck. Only one underground explosion was detonated. It contained 140 tons of nitro-methane compared with the largest of last year which was 40 tons. The crater created by this charge measured some 100 yards inside and 200 yards long. It was termed a "success" by Army officials and planning for the 1968 season got underway immediately following this year's effort.

Burkholder was active all year on a group study of the local high school. His committee, appointed by the school board, toured various high schools in the state, conducted surveys, and eventually reported their findings and recommendations to improve the present school system.

A portion of the U.L. Bend Waterfowl Production Area was purchased during this reporting period. The Bureau is scheduled to take possession July 1, 1968. The remaining 5,764 acres of private land and 35,000 acres of associated public lands are still being negotiated, however, this acquisition has received approval.

Gibbons received a \$25 incentive award for submission of an idea to improve safety.

Retired Refuge Manager Fred Staunton received the Meritorious Service Award during a ceremony at Lewistown, honoring both Fred and his wife, Margaret. (See Photo Section)

Charles Kananen, Heavy Equipment Operator, and Mike Jones, sons of Harold Jones, Foreman at Slippery Ann Station, were both married during this reporting period.

Bruce Stollberg, Refuge Manager from March to May, returned to his former position in Resource Planning in the Central Office. Bruce injected some good ideas into the operation despite his short tenure here at the Charles Russell National Wildlife Range. (See Photo Section)

Mrs. Shirley Carlson, clerk-typist at headquarters, terminated her employment in order to assure a proper environment for her expected baby. She was replaced by Mrs. Betty Minnich, who recently moved to Lewistown and was formerly employed by the Soil Conservation Service in Salina, Kansas.

Mr. Frank R. Martin, Refuge Manager, reported for duty July 2, 1967. Frank transferred from the Region III Regional Office, but is not a newcomer to Montana. Staff members were pleased to note that most of his recent vacations were spent in Montana and he has a familiarity with the area and its problems that is usually associated with someone who has had a long personal involvement.

B. Photographs

A section of photographs is included following the NR forms. Several hundred photographs were taken during the year. This made it possible to complete the CMR briefing book and we provided 51 black and white enlargements (8x10) to the Regional Office.

C. Credits

All of the technical staff were involved to various degrees in writing the report. The typing was done by Mrs. Wicks and Mrs. Minnich. Manager Martin edited the entire report.

SIGNATURE PAGE

Submitted by:

Frank R. Martin
(Signature)

Refuge Manager
(Title)

Date: January 24, 1968

Approved, Regional Office:

Date: 3-11-68

Clayton Crawford
(Signature) V&

Asst. Reg. Director
(Title)

3 -1750a

Cont. NR-1

(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE Charles M. Russell National Wildlife Range

MONTHS OF January TO April, 19 67

(1) Species	(2) Weeks of reporting period								(3)	(4)	
									Estimated	Production	
	3/12-18:	3/19-25 :	3/26-4/1:	4/2-8 :	4/9-15:	4/16-22:	4/23-29:	waterfowl	Broods:	Estimated	
	11	12	13	14	15	16	17	18	days use	seen	total
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada	265	365	700	550	250	250	250		26,460		
Cackling											
Brant											
White-fronted											
Snow			250						1,750		
Blue											
Other											
Ducks:											
Mallard	9,500	15,000	23,000	14,000	12,000	4,000	3,000		1,561,000		
Black	5	5	10						665		
Gadwall		100	500	650	300	200			13,650		
Baldpate	100	500	1,500	1,600	1,000	400	200		37,100		
Pintail	1,000	3,500	8,800	6,000	2,000	1,000	600		161,000		
Green-winged teal		300	400	350	200	100	100		10,150		
Blue-winged teal		200	350	200	150	75	75		7,350		
Cinnamon teal		75	130	75	25	20	15		2,380		
Shoveler		50	250	350	450	500	650		15,750		
Wood											
Redhead		600	1,500	1,300	900	100	75		31,325		
Ring-necked		75	120	120	75	50	25		3,255		
Canvasback	10	50	100	75	50	50	15		2,450		
Scaup	30	350	600	700	500	200	150		17,710		
Goldeneye	200	250	350	350	350	250	175		24,325		
Bufflehead											
Ruddy											
XXXX											
Other Merganser	225	275	300	250	250	250	350		30,800		
Total Ducks	11,070	21,330	37,910	26,020	18,250	7,195	5,630		1,918,910		
Coot:						100	150		1,750		
				(over)							

Class C				SUMMARY
(5)	(6)	(7)		
Total Days Use	Peak Number	Total Production		
Swans	0			Principal feeding areas Grain fields adjacent to open river below Ft. Peck Dam through period and similiar areas on river above reservoir 3/19 and reservoir its self 4/19.
Geese 26,460	700			
Ducks 1,918,910	37,910			Principal nesting areas River islands and stock pend areas adjacent to Reservoir.
Coots 1,750	150			
Reported by Gibbons, Peck & 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 January to April

1967

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Class Number	A Date	Class Number	D Date	Class Number	A Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. <u>Water and Marsh Birds:</u>										
Great Blue Heron	2	03/24/67	100	04/30/67	summer	residents				
White Pelican	1	04/20/67	250	04/30/67	summer	residents				
Double-crested Cormorant	8	04/04/67	400	04/30/67	summer	residents				
Western Grebe	1	04/28/67	200	04/30/67	summer	residents				
II. <u>Shorebirds, Gulls and Terns:</u>										
California Gull	1	03/15/67	1,000	04/30/67	summer	residents				
Killdeer	2	03/15/67	200	04/30/67	summer	residents				
Long-billed Curlew	12	04/15/67	50	04/30/67	1	04/28/67				

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. <u>Doves and Pigeons:</u>					
Mourning dove	1	04/08/67	10,000	04/30/67	summer residents
White-winged dove					
IV. <u>Predaceous Birds:</u>					
Golden eagle			40	03/25/67	permanent resident
Duck hawk	1	03/26/67	1	03/28/67	migrant
Horned owl			20	04/15/67	permanent resident
Magpie			1,500		permanent resident
Raven					
Crow	10	04/01/67	50	04/20/67	migrant
Bald Eagle	10	01/01/67	75	04/05/67	15 04/30/67
Sparrow Hawk	1	03/27/67	200	04/30/67	permanent resident
Osprey	3	04/18/67	16	04/30/67	summer residents
					Reported by Bob L. Burkholder & Marvin Kaschke

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

1613

Refuge Charles M. Russell Nat. Range

Months of January to April, 1946

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total Class D	(7) Remarks
	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'd.	Estimated Total		Hunting	For Re- stocking	For Research		
Common Name					Percentage				Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Ring-necked Pheasant	Population static & low*								500	Species dependent on bottom lands along river and below Fort Peck dam. This habitat reduced due to rising lake levels. Note: Severe spring snow storms continuing into May will probably reduce all upland bird populations.
Merriams Turkey	Population static & low*								100	
Sage Grouse	Population static & normal								2,000	
Sharptail Grouse	Population up from last year								3,000	
European Partridge	Population up from last year								3,000	

Best possible image.

3-175
Form NR-4
(June 1945)

SMALL MAMMALS

Refuge Charles M. Russell Nat RangeYear ending April 30, 1967

(1) Species	(2) Density		(3) Removals					(4) Disposition of Furs					(5) Total Popula tion Class D	
Common Name	Class D	Acres Per Animal	Hunting	Fur Harvest	Predator Control *	For Re- stocking	For Re- search	Share Trapping			Total Refuge Furs Shipped	Furs Donated	Furs Destroyed	
	Cover Types & Total Acreage of Habitat							Permit Number	Trappers Share	Refuge share				
Red Fox	Increasing east - static west													Common
Coyote	Increasing slightly				250									Common
Bobcat	Decreased to a low level													Common
Badger	No measurable change in populations. None of these species are abund- ant on CMR.													Common
Least weasel														Common
Black-footed Ferret														Very rare
Otter														Rare
Mink														Occasional
Raccoon						10								Common
Rabbits (2 species)		Population low												Common
Porcupine	Increasing slightly												Common	
Prairie Dog	Increasing slightly												Common	
Skunk	Increasing				15								Common	
Beaver	stable population				90			T-7418						350
					12			T-7416						

* List removals by Predator Animal Hunter

* List removals by Predator Animal Hunter

REMARKS: Except for Beaver no formal censusing techniques are used. Information is attained by general field observation and impressions received from discourse with local residents and others frequenting the refuge area.

Reported by Bob L. Burkholder & Marvin Kaschke

Actual census periods. Remainder
estimated by interpolation.

REFUGE Charles M. Russell National Wildlife Range

MONTHS OF May TO August, 1967

[illegible]

3-17

Cont. NR-1
(Rev. March 1953)WATERFOWL
(Continuation Sheet)REFUGE Charles M. Russell National Wildlife RangeMONTHS OF May TO August, 19 67

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen: total	
	7/9-15	7/16-22	7/23-29	7/30-8/5	8/6-12	8/13-19	8/20-26	8/27-31			
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada	2,000	1,000	500	250	200	200	250	300	107,800	40	400
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard	700	600	500	450	450	500	500	600	91,700	25	200
Black											
Gadwall	120	120	150	200	250	250	100	50	18,480	5	100
Baldpate	300	350	350	400	400	450	350	200	40,250	5	50
Pintail	200	200	200	220	250	300	300	200	29,890	6	150
Green-winged teal	50	50	60	100	500	500	500	500	22,330	1	20
Blue-winged teal	100	150	200	200	400	1,000	1,000	1,200	38,570	7	200
Cinnamon teal	20	20	20	30	30	40	020	20	2,940		10
Shoveler	550	600	600	500	400	200	100	50	56,000	1	50
Wood											
Redhead									1,190		
Ring-necked									105		
Canvasback									280		
Scaup									2,730		
Goldeneye	100	50	20						14,140		
Bufflehead	20	20							4,340		
Ruddy	20								2,205		
Other Common Merganser	150	100	100	300	200	100	100	100	44,100		
TOTAL DUCKS	2,630	2,560	2,500	2,400	2,880	3,340	2,970	2,920	369,250	50	700
Coot:	100	100	100	100	100	50	50	50	11,550		20

(over)

	(5)	(6)	(7)	
	Total Days Use :	Peak Number :	Total Production	SUMMARY
Swans	-0-	-0-	-0-	Principal feeding areas <u>Stock pond bays of Fort Peck</u>
Geese	107,800	2,200	100	<u>Lake and adjacent grain fields.</u>
Ducks	369,250	5,045	780	Principal nesting areas <u>Island and land areas adjacent</u>
Coots	11,550	100	20	<u>to the lake and river.</u>
				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).

3-1751

Form NR-1A

(Nov. 1945)

MIGRATORY BIRDS
(other than waterfowl)Thru
xx August

x 67

CM Russell NW Range

Refuge..... Months of..... to..... 195.....

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. Water and Marsh Birds:										
Western Grebe	Last Period		200	08-67	Still Present			Unknown		250
Eared Grebe	Last Period		75	08-67	Still Present			Unknown		100
Common Loon	1	07-15-67	20	07-67	Still Present			Unknown		20
Double-crested Cormorant	Last Period		1,200	08-67	Still Present		4	300	800	2,000
White Pelican	Last Period		750	08-67	Still Present			Unknown		750
Great Blue Heron	Last Period		225	08-67	Still Present		6	100	125	350
II. Shorebirds, Gulls and Terns:										
California Gull	Last Period		10,000	08-67	Still Present			Unknown		15,000
Franklin Gull	50	05-02-67	1,500	07-67	Still Present			Unknown		2,000
Common Tern	2	05-02-67	450	07-67	Still Present			Unknown		500
Long-billed Curlew	Last Period		150	07-67	11	08-03-67	40	80		220
Killdeer	Last Period		800	07-67	Still Present			Unknown		1,000
Upland Plover	2	05-16-67	40	07-67	Still Present			Unknown		40
Mountain Plover	1	05-20-67	300	07-67	Still Present		75	110		450

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. <u>Doves and Pigeons:</u>					
Mourning dove	Last Period	110,000	08-67	Still Present	80,000
White-winged dove					200,000
IV. <u>Predaceous Birds:</u>					
Golden eagle	Last Period	40	Permanent Resident	Unknown	40
Black hawk					
Horned owl	Last Period	20	Permanent Resident	Unknown	25
Magpie	Last Period	2,000	Permanent Resident	Unknown	2,800
Raven					
Crow	Last Period	150	07-67	Still Present	Unknown
Sparrow Hawk	Last Period	14	08-20-67	Still Present	Unknown
Osprey	Last Period	25	08-67	Still Present	2
Marsh Hawk	1	05-04-67	25	07-67	Still Present
Red Tailed Hawk	2	05-20-67	15	07-67	Still Present
					7
					5
					14
					35
					20
Burkholder & Gibbons					
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.

3-1750b

Form NR-1B
(Rev. Nov. 1957)

UNITED STATES

DEPARTMENT OF THE INTERIOR

FISH AND WILDLIFE SERVICE

BUREAU OF SPORT FISHERIES AND WILDLIFE

WATERFOWL UTILIZATION OF REFUGE HABITAT

Refuge C.H. Russell NW RangeFor 12-month period ending August 31, 1967Reported by C. W. GibbonsTitle Assistant Refuge Manager

(1) Area or Unit Designation	(2) Habitat Type Acreage	(3) Use-days	(4) Breeding Population	(5) Production
	Crops <u>600</u>	Ducks <u>2,089,789</u>	<u>7</u>	<u>35</u>
	Upland <u>19,530</u>	Geese <u>25,572</u>	<u>7</u>	<u>14</u>
	Marsh <u>80</u>	Swans		
	Water <u>6,920</u>	Coots <u>5,809</u>	<u>1</u>	<u>4</u>
	Total <u>27,130</u>	Total <u>2,121,170</u>	<u>15</u>	<u>53</u>

	Crops <u>950</u>	Ducks <u>222,338</u>	<u>13</u>	<u>202</u>
	Upland <u>96,010</u>	Geese <u>13,065</u>	<u>10</u>	<u>20</u>
	Marsh <u>300</u>	Swans		
	Water <u>63,380</u>	Coots <u>2,901</u>	<u>1</u>	<u>4</u>
	Total <u>160,640</u>	Total <u>238,304</u>	<u>24</u>	<u>226</u>

	Crops <u>680</u>	Ducks <u>1,511,329</u>	<u>21</u>	<u>104</u>
	Upland <u>153,880</u>	Geese <u>15,207</u>		
	Marsh <u>300</u>	Swans		
	Water <u>110,420</u>	Coots <u>38,059</u>		
	Total <u>265,280</u>	Total <u>1,564,595</u>	<u>21</u>	<u>104</u>

	Crops <u>1,250</u>	Ducks <u>173,605</u>	<u>14</u>	<u>71</u>
	Upland <u>216,350</u>	Geese <u>13,065</u>		
	Marsh <u>610</u>	Swans		
	Water <u>41,770</u>	Coots <u>139</u>		
	Total <u>263,010</u>	Total <u>187,689</u>	<u>14</u>	<u>71</u>

	Crops <u>600</u>	Ducks <u>155,620</u>	<u>7</u>	<u>36</u>
	Upland <u>72,000</u>	Geese <u>25,566</u>		
	Marsh <u>700</u>	Swans		
	Water <u>24,780</u>	Coots <u>129</u>		
	Total <u>98,080</u>	Total <u>181,645</u>	<u>7</u>	<u>36</u>

	Crops <u>1,821</u>	Ducks <u>319,237</u>	<u>21</u>	<u>102</u>
	Upland <u>107,056</u>	Geese <u>26,178</u>	<u>17</u>	<u>35</u>
	Marsh <u>120</u>	Swans		
	Water <u>23,610</u>	Coots <u>5,809</u>	<u>2</u>	<u>5</u>
	Total <u>132,610</u>	Total <u>351,224</u>	<u>40</u>	<u>142</u>

	Crops <u>2,965</u>	Ducks <u>222,336</u>	<u>29</u>	<u>133</u>
	Upland <u>56,600</u>	Geese <u>40,308</u>	<u>50</u>	<u>100</u>
	Marsh	Swans		
	Water <u>11,635</u>	Coots <u>4,215</u>	<u>1</u>	<u>4</u>
	Total <u>71,200</u>	Total <u>266,859</u>	<u>80</u>	<u>237</u>

(over)

INSTRUCTIONS

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

- (1) **Area or Unit:** A geographical unit which, because of size, terrain characteristics, habitat type and current or anticipated management practices, may be considered an entity apart from other areas in the refuge census pattern. The combined estimated acreages of all units should equal the total refuge area. A detailed map and accompanying verbal description of the habitat types of each unit should be forwarded with the initial report for each refuge, and thereafter need only be submitted to report changes in unit boundaries or their descriptions.
- (2) **Habitat:** Crops include all cultivated croplands such as cereals and green forage, planted food patches and agricultural row crops; upland is all uncultivated terrain lying above the plant communities requiring seasonal submergence or a completely saturated soil condition a part of each year, and includes lands whose temporary flooding facilitates use of non-aquatic type foods; marsh extends from the upland community to, but not including, the water type and consists of the relatively stable marginal or shallow-growing emergent vegetation type, including wet meadow and deep marsh; and in the water category are all other water areas inundated most or all of the growing season and extending from the deeper edge of the marsh zone to strictly open-water, embracing such habitat as shallow playa lakes, deep lakes and reservoirs, true shrub and tree swamps, open flowing water and maritime bays, sounds and estuaries. Acreage estimates for all four types should be computed and kept as accurate as possible through reference to available maps supplemented by periodic field observations. The sum of these estimates should equal the area of the entire unit.
- (3) **Use-days:** Use-days is computed by multiplying weekly waterfowl population figures by seven, and should agree with information reported on Form NR-1.
- (4) **Breeding Population:** An estimate of the total breeding population of each category of birds for each area or unit.
- (5) **Production:** Estimated total number of young raised to flight age.

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE
WATERFOWL UTILIZATION OF REFUGE HABITAT

Refuge C. M. Russell NW Range

For 12-month period ending August 31, 1967

Reported by C. W. Gibbons

Title Assistant Refuge Manager

(1)	(2)	(3)	(4)	(5)
Area or Unit	Habitat		Breeding	
Designation	Type Acreage	Use-days	Population	Production
VIII	Crops	2,640 Ducks	18	97
	Upland	72,400 Geese	116	231
	Marsh	Swans		
	Water	Coots	1	3
	Total	82,640	316,805	135
GRAND TOTALS	Crops	11,509 Ducks	160	780
	Upland	794,826 Geese	200	100
	Marsh	2,140 Swans		
	Water	293,145 Coots	6	20
	Total	1,101,620	4,200,735	366
	Crops	Ducks		
	Upland	Geese		
	Marsh	Swans		
	Water	Coots		
	Total	Total		
	Crops	Ducks		
	Upland	Geese		
	Marsh	Swans		
	Water	Coots		
	Total	Total		
	Crops	Ducks		
	Upland	Geese		
	Marsh	Swans		
	Water	Coots		
	Total	Total		
	Crops	Ducks		
	Upland	Geese		
	Marsh	Swans		
	Water	Coots		
	Total	Total		

(over)

INSTRUCTIONS

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

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

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

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

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

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

UPLAND GAME BIRDS

Refuge C.M. Russell NW Range

Months of May

Thru

to August

, 19 67

Class D

(1) Species	(2) Density		(3) Young Produced	(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat		Acres per Bird	Number broods obs'd. Estimated Total	Percentage			Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Grey Partridge				1	Unknown			3,000	Population--increase over last year.
Sharp-tailed Grouse				15	Unknown			4,000	Population--increase over last year.
Sage Grouse				20	Unknown			4,000	Population--increase over last year.
Ring-necked Pheasant				0	Unknown			100	Population--decrease over last year.
Merriams Turkey				5	70			160	Population--increase over last year.

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.

WATERFOWL

REFUGE Charles M. Russell National Wildlife Range

MONTHS OF September TO December, 19 67

(1) Species	(2) Weeks of reporting period									
	9/1-2 1	9/3-9 2	9/10-16 3	9/17-23 4	9/24-30 5	10/1-7 6	10/8-14 7	10/15-21 8	10/22-28 9	10/29-11/4 10
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada	350	350	500	750	1,000	2,000	2,000	1,750	1,500	2,000
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	600	750	750	800	1,000	1,500	1,000	1,000	8,500	12,500
Black										
Gadwall	100	250	300	350	450	650	300	350	400	400
Baldpate	200	300	300	500	350	550	350	400	350	300
Pintail	300	450	450	450	400	400	200	150	150	150
Green-winged teal	500	600	700	600	400	350	150	100	50	35
Blue-winged teal	1,400	1,600	2,000	1,000	1,500	300	150	50	20	10
Cinnamon teal	20	20	40	40	70	20				
Shoveler	100	200	300	500	650	750	400	400	400	350
Wood										
Redhead				10	300	300	250	300	275	275
Ring-necked					75	75	75	85	85	60
Canvasback					20	35	50	50	50	50
Scaup				10	175	180	225	200	200	170
Goldeneye			50	60	85	100	135	135	135	135
Bufflehead					35	30	30	30		
Ruddy										
Common Merganser	100	100	150	200	250	250	250	250	350	500
Total Ducks	3,320	4,270	5,040	4,520	5,760	5,490	3,565	6,500	10,965	14,935
Coot:	50	50	50	100	125	125	150	150	100	75

3-175

Cont. NR-1
(Rev. March 1953)WATERFOWL
(Continuation Sheet)REFUGE Charles N. Russell Wildlife RangeMONTHS OF September TO December, 19 67

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production : Broods: Estimated : seen : total	
	11/5-11	11/12-18	11/19-25	11/26-12/2	12/3-9	12/10-16	12/17-23	12/24-31			
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada	1,500	600	500	450	400	200	200	200	113,750		
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard	13,000	15,000	15,000	12,000	10,000	10,000	12,000	13,000	919,800		
Black											
Gadwall	50								25,200		
Baldpate	50	20	20						25,830		
Pintail									21,700		
Green-winged teal									24,395		
Blue-winged teal									56,210		
Cinnamon teal									1,470		
Shoveler	50								28,700		
Wood											
Redhead	75								12,495		
Ring-necked	5								3,220		
Canvasback	15								1,890		
Scaup	50								8,470		
Goldeneye	110	150	150	150	250	250	250		15,015		
Bufflehead	5	25	25	15	10				1,435		
Ruddy											
OTHER Common Merganser	1,600	1,000	1,000	500	450	400	500	500	58,450		
Total Ducks	15,010	16,195	16,195	12,665	10,710	10,650	12,750	13,500	1,204,280		
Coot:	100	100	100	25	25	25			9,450		

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production	SUMMARY
Swans	0	0		Principal feeding areas
Geese	113,750	2,000		
Ducks	1,204,280	16,195		Principal nesting areas
Coots	9,450	150		
				Reported by <u>Bob L. 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

(other than waterfowl)

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

(1) Species Common Name	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production		(6) Total Estimated
	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young
I. Water and Marsh Birds:									
Common Loon	1	12/3	10	11/12	1	12/3			20
Western Grebe	Last Period		200	11/12	50	12/3			250
White Pelican	"	"	3,500	9/1	125	11/17			700
Double-Crested Cormorant	"	"	1,000	9/1	10	12/3			1,000
Great Blue Heron	"	"	150	9/1	1	10/3			150
II. Shorebirds, Gulls and Terns:									
<u>Terns:</u>									
Killdeer	Last	Period	1,000	9/1	2	10/15			1,000
Mountain Plover	"	"	100	9/1	1	10/20			200
Upland Plover	"	"	30	9/1	1	9/20			50
California Gull	"	"	200	8/20	10	12/3			500
Franklin Gull	"	"	5,000	8/20	1	12/3			5,000
Common Tern	"	"	500	9/1	2	11/17			500

(over)

(1)	(2)		(3)	(4)	(5)	(6)
III. Doves and Pigeons:	Last	Period	85,000	9/1	2	11/15
Mourning dove						120,000
White-winged dove						
IV. Predaceous Birds:						
Golden eagle	Yearlong	Resident	50	11/30	Still	Present
Duck hawk	1	11/12	10	11/12	1	11/12
Horned owl	Resident		100	12/30	Still	Present
Magpie	"		1,000	12/30	Still	Present
Raven	None					
Crow	Previous	Period	150	10/22	15	10/22
Buteo spp.	"	"	300	9/26	1	12/5
Bald Eagle	1	10/30	10	12/30	Still	Present
Marsh Hawk	Previous	Period	150	12/30	"	"
Osprey	"	"	25	9/1	1	10/22
Sparrow Hawk	"	"	300	9/1	2	10/2
Burrowing Owl	"	"	50	none	sighted	
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.

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

WATERFOWL HUNTER KILL SURVEY

Refuge Charles M. Russell National Wildlife Range

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
Sept. 2 - Sept. 10	1	1	(1) Bluewing teal, (1) Greenwing teal	2	0	2	2	4
Sept. 30 - Oct. 6	1	2	(2) Canada goose	2	0	2	5	5
Oct. 7 - Oct. 13	1	2	(None)	0	0	0	3	0
Oct. 14 - Oct. 20	2	2	(1) Mallard, (1) Shoveler	2	1	3	6	9
Oct. 21 - Oct. 27	0	0	(None)	0	0	0	2	2
Oct. 28 - Nov. 3	2	1	(3) Mallard, (1) Canada goose	4	1	5	5	12
Nov. 4 - Nov. 10	3	3	(1) Mallard, (1) Gadwall, (1) Widgeon	3	2	5	10	16
Nov. 11 - Nov. 17	3	1	(1) Mallard	1	1	2	8	5
Nov. 18 - Nov. 24	4	5	(3) Mallard, (2) Shoveler	5	1	6	12	18
Nov. 25 - Dec. 1	12	16	(18) Mallard	18	8	26	40	86

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

Refuge Charles M. Russell National Wildlife Range (Page 2)

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
Dec. 2 - Dec. 8	15	20	(24) Mallard	24	11	35	55	128
Dec. 9 - Dec. 13	0	0	0	0	0	0	2	0
TOTALS	15	53		61	25	86	148	285

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

UPLAND GAME BIRDS

Refuge Charles M. Russell Wildlife Range Months of September to December, 19 67

(1) Species	(2) Density	(3) Young Produced	(4) Sex Ratio	(5) Removals	(6) Total	(7) Remarks	
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'd. Estimated Total	Percentage	Hunting For Re- stocking For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Sharp-tailed grouse			2 500		100	3,500	
Sage grouse			1 50		20	500	Poor hunting - late, cold spring reduced reproduction.
Ring-necked pheasants			2 100		10	100	Very little hunting pressure since birds were few in numbers
Grey partridge			0			3,000	
Merriam's turkey			5 300		20	400	Montana Fish & Game Dept. planted 18 turkeys in Pines Area (Ft. Peck) - only 2 were reported during big game seasons. All estimates made from field observations, aerial surveys and reports from local residents and hunters.

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

- | (1) SPECIES: | Use correct common name. | (4) SEX | (3) YOUNG | (2) 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 Charles M. Russell Wildlife Range Calendar Year 1967

(1) Species	(2) Density	(3) Young Produced	(4) Removals				(5) Losses			(6) Introductions		(7) Estimated Total Refuge Population		(8) Sex Ratio
Common Name	Cover types, total Acreage of Habitat	Number	Hunting	For Re- stocking	Sold	For Research	Predation	Disease	Winter Loss	Number	Source	At period of Greatest use	As of Dec. 31	M F
Mule deer	Timbered "Breaks" - coulees 700,000 A	1,500	600				100					3,000	2,000	42:100
White-tailed deer	River bottoms above lake and below dam	140	30				5					400	350	30:100
Elk	Both of above 300,000A	140	158									700	570	50:100
Antelope	Bench lands 100,000A	300	20									1,500	250	50:100
Big horn sheep	Timbered breaks - 7,000A (including sheep enclosure)	12	2*									80	78	41:100

Remarks:

* Illegal kills

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 Charles M. Russell National Wildlife Range Year 19⁶⁷

Botulism

Lead Poisoning or other Disease

Period of outbreak None

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 None

Species affected _____

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

Number Recovered _____

Number lost _____

Source of infection _____

Water conditions _____

Food conditions _____

Remarks _____

PUBLIC RELATIONS

(See Instructions on Reverse Side)

Refuge Charles M. Russell National Wildlife RangeCalendar Year 1967

1. Visits

a. Hunting 12,200 b. Fishing 50,000 c. Miscellaneous 808,050 d. TOTAL VISITS 870,250

1a. Hunting (on refuge lands)

TYPE	HUNTERS	ACRES	MANAGED BY
Waterfowl	<u>375</u>	<u>13,000</u>	<u>FWS</u>
Upland Game	<u>1,000</u>	<u>138,000</u>	<u>FWS and Mont F&G</u>
Big Game	<u>33,500</u>	<u>678,000</u>	<u>FWS and Mont F&G</u>
Other			

None

Number of permanent blinds

6,000

Man-days of bow hunting included above

Estimated man-days of hunting on lands adjacent to

no basis for estimate
refuge

1b. Fishing (area open to fishing on refuge lands)

TYPE OF AREA	ACRES	MILES
Ponds or Lakes	<u>225,500</u>	
Streams and Shores		<u>500</u>

1c. Miscellaneous Visits

Recreation 852,750 Official 2,500Economic Use 15,000 Industrial ---

2. Refuge Participation (groups)

On Refuge Off Refuge

TYPE OF ORGANIZATION	NO. OF GROUPS	NUMBER IN GROUPS	NO. OF GROUPS	NUMBER IN GROUPS
Sportsmen Clubs			<u>7</u>	<u>480</u>
Bird and Garden Clubs				
Schools	<u>1</u>	<u>4</u>	<u>10</u>	<u>1,600</u>
Service Clubs			<u>10</u>	<u>450</u>
Youth Groups			<u>3</u>	<u>75</u>
Professional-Scientific			<u>1</u>	<u>100</u>
Religious Groups			<u>1</u>	<u>25</u>
State or Federal Govt.			<u>2</u>	<u>100</u>
Other			<u>1</u>	<u>20</u>

3. Other Activities

TYPE	NUMBER	TYPE	NUMBER
Press Releases	<u>4</u>	Radio Presentations	<u>---</u>
Newspapers (P.R.'s sent to)	<u>5</u>	Exhibits	<u>---</u>
TV Presentations	<u>-</u>	Est. Exhibit Viewers	<u>---</u>

INSTRUCTIONS

Item 1: Total of a, b, and c, equal d.

"Visit" - definition. Any person who is on refuge lands or waters during a day or part thereof for the purpose of: hunting, fishing, bird-watching, recreation, business or economic use, official visit, or similar interest. INCLUDE - those who stop within the refuge while traveling on a public highway because of an interest in the area. EXCLUDE - persons engaged in oil or other industry not directly related to the refuge, persons using refuge as most direct route or principal avenue of traffic, and those boating on navigable rivers or the Intercoastal Canal, unless they stop to observe wildlife on the refuge.

Computing visits. Where actual counts are impractical, "sampling" is used with midweek and weekend samples varied by season or weather. A conversion factor of 3.5 (of passengers per car) is used when accurate figures are not available. Each refuge will develop a conversion factor for boats based on range of usage. Count a camper once for each 24-hour period or fraction thereof.

Item 1a: Acres - of refuge open for each type of hunting.

Managed hunts require check in and out of hunters, issuance of permits, or assignment of blinds.

Other - INCLUDE crow, fox, and similar hunting.

Lands adjacent to refuge. Normally considered within 1 mile or less of boundary, unless established sampling procedures cover a wider area. For big game hunting, the distance may be greater.

Item 1b: Acres of streams open to fishing, if practical; otherwise just miles open. Information on "shores" is primarily for coastal fishing.

Item 1c: Recreation. INCLUDE photography, observing wildlife, picnicking, swimming, boating, camping, visitor center use, tours, etc. TOTAL Recreation, Official, and Economic Use visits under Item 1.

Industrial. INCLUDE persons engaged in industry, i.e., oil industry or factories. EXCLUDE these from Item 1.

Item 2: INCLUDE the "On Refuge" groups in Items 1c and 1. In "Off Refuge" column include only those group meetings in which refuge employees actually participate. EXCLUDE these from Items 1c and 1.

Item 3: Exhibits - INCLUDE displays, fairs, parades, and exhibits OFF the refuge; EXCLUDE those ON.

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

NONAGRICULTURAL COLLECTIONS, RECEIPTS, AND PLANTINGS

(1)

Refuge Charles M. Russell National Wildlife Range Year 19 67

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
None													

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

Total acreage planted:

Marsh and aquatic _____
Hedgerows, cover patches _____
Food strips, food patches _____
Forest plantings _____

Remarks: _____

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

Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge Charles M. Russell National Wildlife Refuge County Fergus State Montana 1967

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	Acres	Bu./Tons	Acres	Bu./Tons			
Sharecropped Barley	101	0-Flooded			18 1/2	1,000 bu.	285	None	0
Winter wheat					16	560 bu.	16		
Winter wheat seeded Fall - 1967					47	-	47		
Refuge Farmed Barley					15	300 bu.	15		
								Fallow Ag. Land Sharecropped Refuge farmed	195 65

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

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING	Number Animals	AUM'S	Cash Revenue	ACREAGE
Alfalfa	911	321		1. Cattle	Licensed by	BLM		
				2. Other				
				1. Total Refuge Acreage Under Cultivation				576**
Hay - Wild	261	455		2. Acreage Cultivated as Service Operation				80

*11 1/2 acres of which was flooded

**Does not include 321 acres of alfalfa planted over 2 years ago.

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 National Wildlife Range County Petroleum - 1967 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				
<u>Sharecropped:</u> Barley					*38	320 bu.	38	None	
								Fallow Ag. Land Sharecropped Refuge farmed	**61 0

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

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING	Number Animals	AUM'S	Cash Revenue	ACREAGE
Alfalfa	40	40		1. Cattle	licensed by BLM			
				2. Other				
				1. Total Refuge Acreage Under Cultivation				99****
Hay - Wild	35	***155		2. Acreage Cultivated as Service Operation				0

*22 acres of which was flooded
**32 " " " " " "

***106 acres of which was flooded
****Does not include 40 acres of alfalfa planted over 2 years ago.

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 National Wildlife Range County Phillips - 1967 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	20	560 bu	91	2,550 bu	48	885 bu	159	Barley-Alfalfa Cover Crop	97
Winter Wheat					57	1,655 bu	57		
Winter Wheat Seeded- Fall 1967					58	-	58	Barley-Alfalfa Waterfowl Browsing Crop	12
*Alfalfa (Seed)	150	1½ ton	50	½ ton	-	-	2		
Barley-Alfalfa	71	98 ton			26	520 bu	97	Millet-Alfalfa Cover Crop	136
*Millet-Alfalfa	92	0			44	0	136		
<u>Refuge Farmed</u> Corn					13	1,040	13	Fallow Ag. Land	
Millet					11	770	11		
(continued on next page)									

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

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

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

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

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

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

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

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

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

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

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

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

Refuge Charles M. Russell National Wildlife Range County Phillips - 1967 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>Refuge Farmed cont'd</u> Barley-Alfalfa Barley-Millet			12	7 tons	12	160	12 12		
								Fallow Ag. Land Sharecropped Refuge Farmed	185 35

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

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING	Number Animals	AUM'S	Cash Revenue	ACREAGE
Alfalfa	1,354	773		1. Cattle	Licensed	by RLM		
Sudan	19	16		2. Other				
Barley-Alfalfa	98	71						
*Millet-Alfalfa	0	136						
				1. Total Refuge Acreage Under Cultivation				733
Hay - Wild	15	15		2. Acreage Cultivated as Service Operation				83***

*200 acres included under improved hay, but not under total acreage planted because it was planted more than 2 years ago. **flooded. ***does not include 713 acres of alfalfa planted over 2 years ago.

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 National Wildlife Range County Valley State Montana

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure, Cover and Water- fowl Browsing Crops Type and Kind	Total Acreage
	Acres	Bu./Tons	Harvested		Unharvested				
			Acres	Bu./Tons	Acres	Bu./Tons			
<u>Sharecropped</u>									
Barley	114	3,784	29	840			143		
Corn					4.5	315	4.5		
Sorghum					4.5	225	4.5		
<u>Refuge Farmed</u>									
Barley			12	250	28	560	40		
Proso millet					15	150	15		
								Fallow Ag. Land	
								Sharecropped Refuge Farmed	75 65

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

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING	Number Animals	AUM'S	Cash Revenue	ACREAGE
Alfalfa	45 tons	11		1. Cattle	Licensed by	BLM		
				2. Other				
				1. Total Refuge Acreage Under Cultivation				
Hay - Wild				2. Acreage Cultivated as Service Operation				120

*Does not include 11 acres of alfalfa planted over 2 years ago.

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

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

REFUGE GRAIN REPORT

Refuge Charles M. Russell National Wildlife RangeMonths of January through December, 1956

(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
<u>Slippery Ann</u>											
Alfalfa	40 bu.	10	50		5		5	45	45	-	-
Barley	600 bu.	2,550	3,150	12,100	15	600	2,715	435	135	300	-
Crested Wheat	500 lbs.	-	500	-	50	-	50	450	450	-	400
Western Wheat	250 lbs.	75	325	-	100	-	100	225	225	-	-
Prose Millet	50 bu.	-	50	-	10	10	20	30	30	-	-
Canadian Clover	50 lbs.	-	50	-	-	-	0	50	50	-	-
Velvet Lawn Mixture	280 lbs.	-	280	-	80	-	80	200	200	-	-
Winter Wheat	150 bu.	-	150	260	-	90	150	0	-	-	-
Oats	42 bu.	-	42	-	-	15	15	27	2	25	-
Corn	-	4 bu	4	-	3	-	3	1	1	-	-
<u>Fort Peck</u>											
Barley	2,630	4,260*	6,890	-	200	3,050	3,250	3,640	-	3,640	-
Prose Millet	24	-	24	-	10	-	10	14	14	-	-
<u>Headquarters</u>											
Barley	1,015	-	1,015	-	-	315	-	700	-	700	-

(8) Indicate shipping or collection points _____

(9) Grain is stored at Grain bins at Fort Peck.(10) Remarks ¹Transferred to Fort Peck ²Transferred to Bowdoin for depredations feeding. *Received from Slippery Ann,

*See instructions on back.

Medicine Lake Refuge, Lewistown Office and Fort Peck Sharecroppers.

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.

(1)	(2)	(3)	(4)	(5)				(6)	(7)		
				Received	Transferred	Disposed	On Hand		Source	Destination	Condition

REFUGE GRAIN REPORT

TIMBER REMOVAL

Refuge Charles M. Russell Wildlife National Range Year 19567

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
None								

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

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

ANNUAL REPORT OF PERSTICIDE APPLICATION

Proposal Number

Reporting Year

1967

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

Date(s) of Application	List of Target Pest(s)	Location of Area Treated	Total Acres Treated	Chemical(s) Used	Total Amount of Chemical Applied	Application Rate	Carrier and Rate	Method of Application
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. June 6	Fanweed & greense wood	Tr 8 & 9	20	2,4-D Amine	6 gal.	1½ lb a.e./acre	1:100 Water	Power Sprayer
2. June 8	Russian thistle	Equipment Storage Area Tr. 7	1	Banzober	50 lbs.	50 lb/acre	None	Broadcast Seeder
3. June 16	Fanweed & grease wood	Tr. 8 & 9	15	2,4-D Amine	4 gal.	1½ lbs a.e./acre	1:100 water	Power Sprayer
4. June 16	Russian thistle & Fireweed	Roadsides & Air-strip-Slippery Ann	5	2,4-D Amine	2/3 gal.	1½ lbs. a.e./acre	1:100 water	Power Sprayer
5. June 19	Russian thistle & Fireweed	Roadsides-Slippery Ann	7	2,4-D Amine	2 gal.	1½ lbs. a.e./acre	1:100 water	Power Sprayer
6. June 20	Fireweed, bindweed, Canadian thistle	Tr. 7 & 8	18	2,4-D Amine	5 gal.	1½ lbs. a.e./acre	1:100 water	Power Sprayer
7. June 21	Fireweed, bindweed, Canadian thistle	Tr. 7 & 8	7	2,4-D Amine	2 gal.	1½ lbs. a.e./acre	1:100 water	Power Sprayer

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

1. Est. 40% kill
2. Est. 80% kill
3. Est. 40% kill
4. Est. 80% kill
5. Est. 80% kill
6. Est. 90% kill
7. Est. 90% kill

(Continue on next page)

ANNUAL REPORT OF PERSTICIDE APPLICATION

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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 22	Canadian thistle & fireweed	Tr. 646	7	2,4-D Amine	2 gal.	1½ lbs a.e./acre	1:100 water	Power Sprayer
June 26-29	Canadian thistle & fireweed	Tr. 646	80	2,4-D Amine	23 gal.	1½ lbs a.e./acre.	1:100 water	Power Sprayer
June 29	Fireweed	Around buildings & corrals Tr. 646	1	Ureabor	50 lbs.	50 lbs./acre	None	Broadcast Seeder
July 21	Fireweed	Around buildings at TR. 15	1	Ureabor	50 lbs.	50 lbs/acre	None	Broadcast Seeder
Aug. 29	Greasewood seedlings	Tr. 8 & 9	35	2,4-D Amine	10 gal.	1½ lbs a.e./acre	1:100 water	Power Sprayer

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

- 8. Est. 50% kill
- 9. Est. 50% kill
- 10. Est. 100% kill
- 11. Est. 90% kill
- 12. Est. 30% kill

ANNUAL REPORT OF PERSTICIDE APPLICATION

Proposal Number

Reporting Year

1967

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Date(s) of Application	List of Target Pest(s)	Location of Area Treated	Total Acres Treated	Chemical(s) Used	Total Amount of Chemical Applied	Application Rate	Carrier and Rate	Method of Application
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. June 19	Fanweed, mustard pigweed	Tr. 62D(a)	24	2, 4-D Amine	11 gal.	2 lb. a.e./acre	1:75 water	Power Sprayer
2. June 23	Fanweed, mustard pigweed	Tr. 68D	43	2,4-D Amine	18 gal.	2 lb. a.e./acre	1:75 water	Power Sprayer
3. June 30	Fanweed, mustard pigweed	Tr. 70D	55	2,4-D Amine	10 gal.	1 lb. a.e./acre	1:150 water	Power Sprayer
4. July 6	Fanweed, mustard pigweed, milkweed	Tr. 71D	42	2,4-D Amine	16 gal.	2 lb. a.e./acre	1:75 water	Power Sprayer
5. July 6	Fanweed, mustard pigweed, milkweed	Tr. 66D	4	2,4-D Amine	1.5 gal.	2 lb. a.e./acre	1:75 water	Power Sprayer

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

1. Est. 90% kill
2. Est. 75% kill
3. 15 acres - 30% kill
40 acres - 70% kill
4. Est. 80% kill
5. Est. 80% kill



Lloyd Ramelli



Frank Martin



Marvin Kaschke



Charles Gibbons



Linda Wicks



Charles Peck



Harold Jones



Bob Burkholder



Dean Gilbert



Lynes Kilby



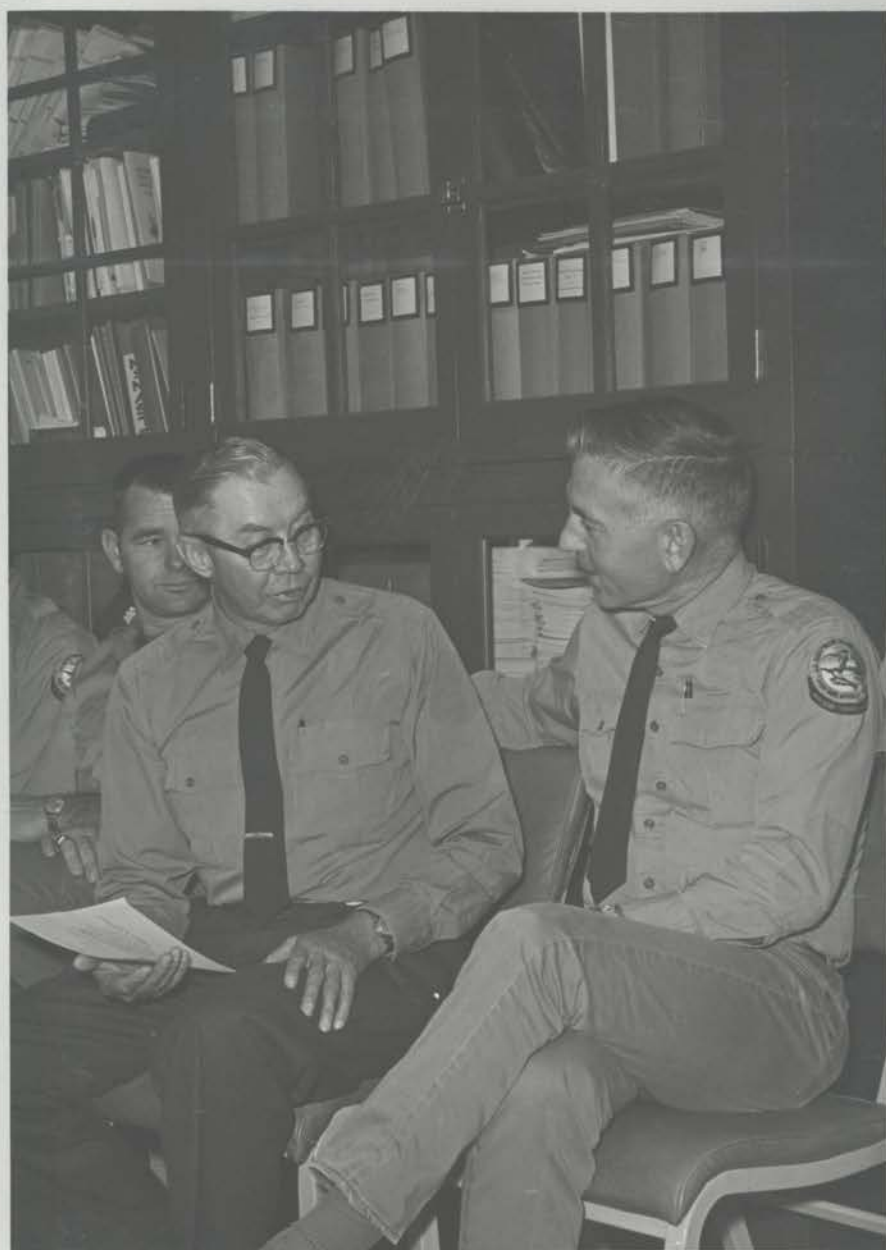
Sam Sage



Gerald Sullivan



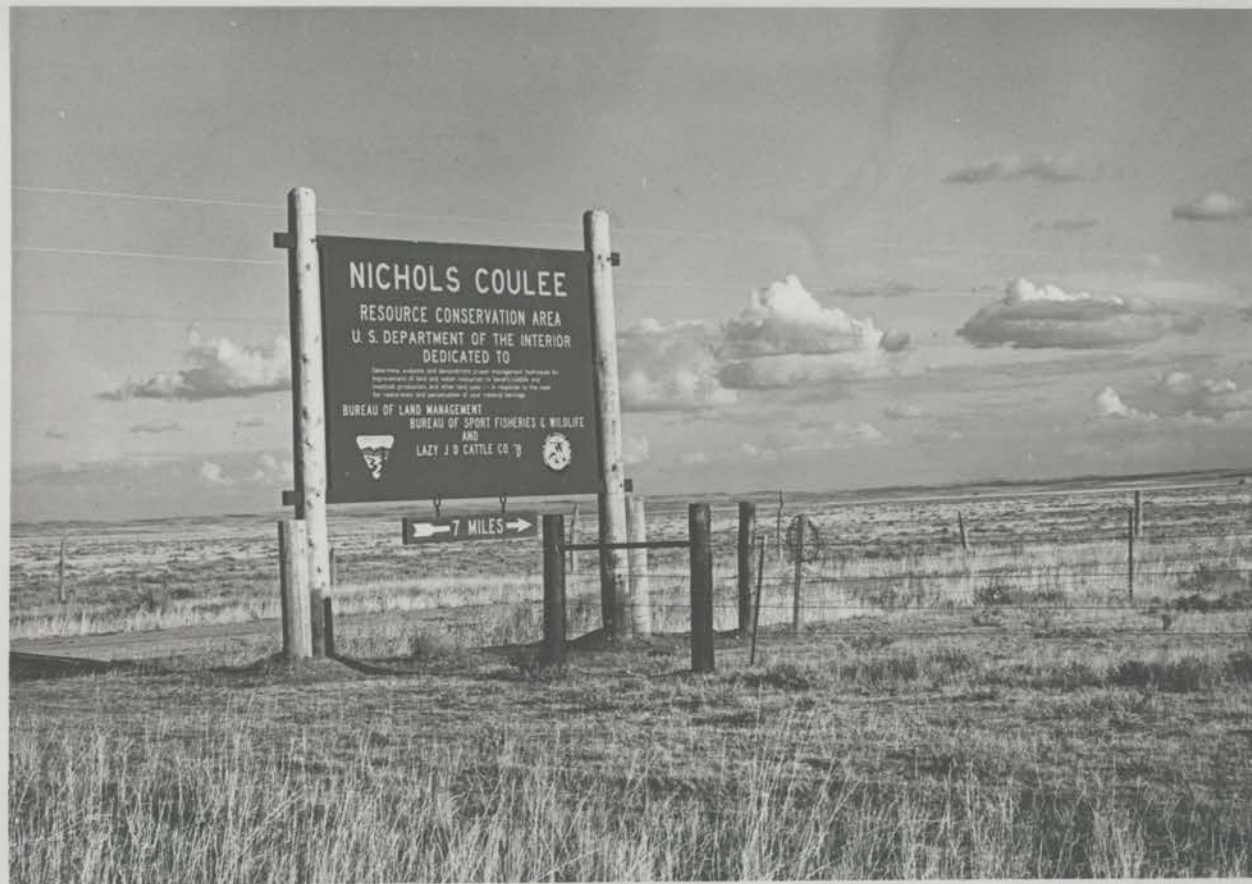
Bruce Stollberg was presented with a cake shaped like a goose at a farewell party at refuge headquarters on May 19. Photo No. 67-409, 5/19/67 FRM



Former Manager Fred Staunton was presented with the Meritorious Service Award by Assistant Supervisor George Wiseman at a ceremony in Lewistown on October 10, 1967. Photo No. 67-1137,10/22/67 FRM



Joe Zupec, Maintenceman III, practices bandaging Bill Davis, Operator, General, during first aid class at Camp Charlie in October. Photo No. 67-1236, 10/31/67 LRR



This sign, identifying the Nichols Coulee RCA and marking the entrance road, was erected in August. Photo No. 67-997, 7/15/67 FRM



Mallards totaling 1,014 were banded in Duck Creek below Fort Peck Dam during the winter months. While banding, weights were taken to determine the supplement feed requirements. Approximately 15,000 mallards wintered in the Fort Peck area. Corps of Engineers photo-2/67



Don Fortenberry, Bureau Biologist assigned to black-footed ferret studies, explains to Lloyd Ramelli some of the characteristic signs left by ferrets. Photo No. 67-1222, 10/22/67 FRM



Marvin Kaschke collects a sample of red water along shore-
line of Missouri River several miles below the Slippery Ann
substation. The Northern Prairie Research station analyzed
a small sample and reported it as possibly paint or lacquer.
Photo No. 67-746, 7/21/67, FRM



An elk hunter in the Burnt Lodge Wilderness study area is questioned by Charles Peck. Photo No. 67-1446, 12/3/67 FRM

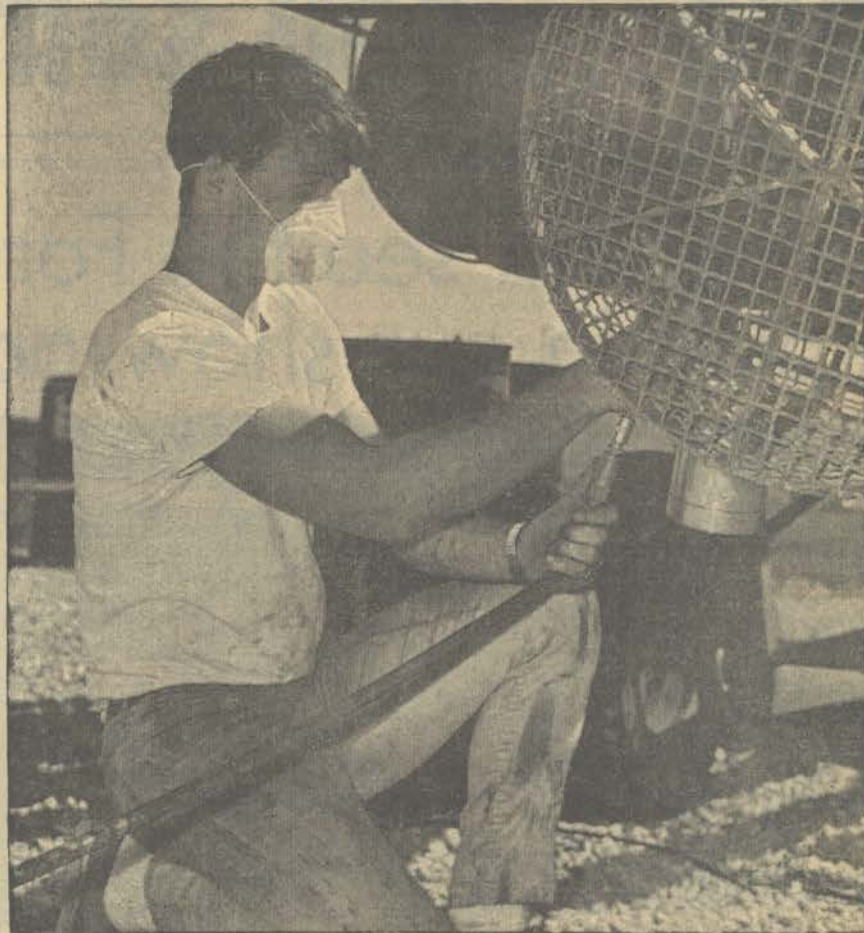


Mule deer buck photographed in the 2,000 acre bighorn sheep enclosure. Deer jump into area and are herded out several times each year. Photo No. 67-1364, 11/17/67, FRM



These two North Dakota archers each killed an elk on the east end of the Range. Nineteen of the 21 elk killed by archers were taken in the east end. Corps of Engineers photo 10/67

Local youth receives YOC training...



CORRY O'BRIEN, Lewistown, operates a spray gun while employed at the Charles M. Russell National Wildlife Range. Frank R. Martin, manager of the Wildlife Range, said Corry is being trained under the Summer Youth Opportunity Campaign. Corry

is getting experience in working with other people, and learning to safely operate various tools and equipment and to develop proper work habits. He plans to go to Miles City Junior College this fall. U. S. Fish and Wildlife Photo.

From the Lewistown Daily News

SATELLITE NATIONAL WILDLIFE REFUGES
Hailstone, Halfbreed, Mason, War Horse,
Wild Horse, and Yellow Water

NARRATIVE REPORT
 January - December 1967

I. GENERAL

A. Weather Conditions

Moisture conditions were below the normal average for much of southwestern and south central Montana. Moisture received during the winter and spring months was above normal but summer precipitation dropped well below the average.

Temperature extremes were consistent with past years. The high recorded in August was 96° and the low recorded in December was -12°.

The weather statistics listed below were obtained from the U.S. Weather Bureau Station at Billings, Montana. They reflect weather conditions more closely for Hailstone and Halfbreed Refuges than for Lake Mason, War Horse, and Yellow Water. Weather reports from Roundup, Montana better represent weather conditions at Lake Mason and War Horse, however, these records are not available for this report.

	1967		Precipitation			Snowfall		
	Max.	Min.	1965	1966	1967	1965	1966	1967
January	38	22	.66	.43	.36	8.0	6.3	6.1
February	44	24	1.18	.32	.39	13.9	3.6	3.7
March	41	21	.90	1.58	1.55	11.4	17.3	16.2
April	50	29	1.18	1.10	1.63	3.4	2.5	11.4
May	61	39	1.89	.84	1.84	3.5	Tr	7.7
June	70	51	2.30	1.56	5.18	-	-	-
July	87	58	1.28	1.45	.37	-	-	-
August	86	56	3.50	1.09	.54	-	-	-
September	74	49	2.17	2.46	.66	5.6	-	-
October	60	39	.09	.50	1.04	-	Tr	-
November	44	29	.66	1.07	.50	6.3	12.0	5.1
December	34	16	.74	.95	.79	10.1	10.3	9.0
Totals			16.55	13.35	14.85	62.2	52.0	59.2

B. Habitat Conditions

1. Water

Water levels were maintained in five of the refuges as a result of better moisture conditions prevailing through April, May, and June. Wild Horse became dry in June and Lake Mason was almost dry due to upstream water diversions until July. Fall rain brought water levels

up and all areas except Wild Horse contained water at the close of the year. Halfbreed Refuge filled in May for the first time since 1963. Lake Mason went into the year with a low water level and did not gain much in water until fall months when it filled to about three-fourth's capacity. Lake Mason could have filled to capacity in the spring had not the upstream diversions of water occurred, resulting in a total loss of production this year. This is not a new situation at Mason but one which is under continuing investigation and, hopefully, an equitable solution can be found.

War Horse and Yellow Water have been more stable in water levels over the years than the other refuges and in 1967 both maintained good levels. Water levels were ample to fulfill wildlife needs except as noted.

2. Food and Cover

Aquatic vegetation was sufficient in the water areas with the exception of Lake Miller and Wild Horse. Wildlife use of all areas continued until freeze-up.

Grass and forb production was excellent this year due to better moisture conditions. Heavy grazing by livestock operations left most areas in poor condition by late summer. The Bureau has no control over grazing on Hailstone, Halfbreed, and Lake Mason as they are easement refuges. War Horse, Yellow Water, and Wild Horse Refuges are LU lands transferred to the BSWF and managed under cooperative agreement with the BLM. Livestock use on these areas is difficult to control due to the complex land ownership and unfenced areas.

Cereal grains on private lands in the proximity of each refuge greatly assist in maintaining waterfowl populations in those areas.

II. WILDLIFE

A. Migratory Birds

Most satellite areas were ice-free by April. Low water levels, however, plagued Lake Mason. Halfbreed was dry during this period. The remaining areas sustained 13,000 ducks during the April peak and 8,000 of these were using War Horse. Production was normal on War Horse, Yellow Water, and Hailstone but Lake Mason was down and Wild Horse nonexistent as a result of being dry. Halfbreed produced well for the first time in many years due to an early June run-off that filled this lake and the entire adjoining Wheatland Basin. The fall peak totaled 46,000 ducks and 17,000 coots despite the fact that other water areas in Central Montana were more abundant than during normal years of average precipitation. A long mild fall period precluded concentrations of migrants.

B. Upland Game Birds

Sightings of upland birds were sporadic. Production was lower than last year as a result of the long wet spring. Overgrazing by live-stock with the resultant loss of cover and habitat probably affects upland game bird populations more than any other factor. Species represented are ring-necked pheasant, Hungarian partridge, sage grouse, and sharp-tailed grouse. Numbers of individual species vary as use is not restricted to refuge boundaries.

C. Big Game Animals

Antelope used all areas this year with an increase in numbers noticeable at Halfbreed. Mule deer were observed only at War Horse and Wild Horse but occur occasionally on the other areas as well.

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

Coyote and fox populations are reported as increasing in Central Montana. These animals use the refuge areas but increases are not noticeable.

With water levels so erratic on Lake Mason and Halfbreed, fur animals are seldom observed. Skunks, on the other hand, are quite common. Some muskrat activity was noted at Lake Mason but not in sufficient quantity to encourage a harvest.

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

Sights of golden eagles occurred only at Yellow Water and Hailstone this year. Marsh hawks, red-tailed hawks, sparrow hawks and Swainson's hawks were seen either on or in the general vicinity of each refuge. No production of hawks or eagles is known to occur on the refuge areas. One golden eagle nest located on the King Ranch three miles north of Yellow Water hatched 1 fledgling from 2 eggs.

F. Other Birds

Again this year about 300 long-billed curlews were using a portion of Halfbreed Lake Refuge just prior to the fall migration. The buildup at Halfbreed occurs nearly every year but has increased the past two years. White pelicans and double-crested cormorants rotated between Yellow Water and War Horse Refuges during the spring and early summer. No production was recorded for these birds.

G. Fish

Yellow Water and War Horse Lakes furnish all the sport fishing for the satellite refuges. At Yellow Water good catches of rainbow trout and

bullheads were made while bass fishing at War Horse Lake was excellent. The Billings Gazette reported War Horse Lake as the "hottest fishing spot in Montana." This publicity increased the regular heavy public use of the area. Good catches of 1-3 pound large mouth bass were made throughout the ice-free period. Fishing here furnishes an important recreational outlet for local people including Billings residents. On weekends it is common to count 25 to 30 vehicles and 3 to 5 boats on the area. During the week, 2 to 5 vehicles are average.

H. Reptiles

Nothing of particular interest.

I. Disease

None noted.

III. REFUGE DEVELOPMENT AND MAINTENANCE

A. Physical Development

No development work was undertaken on the satellite refuges this year. Boundary posting on Lake Mason, Halfbreed, and Hailstone was accomplished with many new signs and posts installed. The public hunting area of Lake Mason was posted this fall prior to the waterfowl season.

IV. RESOURCE MANAGEMENT

A. Grazing

The Bureau-controlled lands at Lake Mason, War Horse, Wild Horse, and Yellow Water are grazed by local ranchers under permit from the BLM. Overgrazing is prevalent on all these lands and most noticeable adjacent to the lakes and marshes. Wildlife habitat could be improved by reducing grazing. However, with the areas unfenced and checkerboard land ownership, grazing reductions are difficult.

VI. PUBLIC RELATIONS

Public hunting pressure at Lake Mason was light even though good waterfowl numbers remained until freeze-up. Only Lake Mason has a public hunting area. Limited hunting occurs adjacent to most of the other refuges for waterfowl as well as resident wildlife. Halfbreed is an exception as the private land surrounding the refuge is closed to hunters. Halfbreed and Hailstone do hold geese that feed in grainfields located in Wheat Basin and furnish excellent hunting.

The state game warden at Roundup, Montana reported two violations at Lake Mason for hunting waterfowl in the closed area. The warden at Columbus reports apprehending a hunter at Halfbreed Refuge for hunting antelope. These are the only known violations occurring this year.

VII. OTHER ITEMS

A. Items of Interest

The water rights investigation at Lake Mason and Halfbreed continued with close cooperation from the Field Solicitor's Office in Billings. Obtaining a dependable water supply is the most important factor limiting production of these two refuges but to date this has been impossible due to demands of upstream water users.

Field investigations were completed at War Horse to determine land ownership and water rights status. About 1,200 acres of private land surround War Horse and if purchased by the Bureau, would give us complete control of the lake as well as land adjacent to the shoreline.

WATERFOWL

REFUGE Hailstone Lake

MONTHS OF January TO April, 1967

(1) Species	(2) Weeks of reporting period									
	1/1-7	1/8-14	1/15-21	1/22-28	1/29-2/4	2/5-11	2/12-18	2/19-25	2/26-3/4	3/5-11
	1	2	3	4	5	6	7	8	9	10
Swans:	Frozen---									
Whistling										
Trumpeter										
Geese:										
Canada										
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard										
Black										
Gadwall										
Baldpate										
Pintail										
Green-winged teal										
Blue-winged teal										
Cinnamon teal										
Shoveler										
Wood										
Redhead										
Ring-necked										
Canvasback										
Scaup										
Goldeneye										
Bufflehead										
Ruddy										
Other										
Coot:										

3-17508
Cont. NR-1
(R March 1953)

WATERFOWL
(Continuation Sheet)

REFUGELailstone Lake

MONTHS OF January TO April, 1967

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods:Estimat seen : total
	3/12-18 : 11	3/19-25 : 12	3/26-4/1 : 13 *	4/2-8 : 14	4/9-15 : 15 *	4/16-22 : 16	4/23-29 : 17	18		
Swans:				5	7	0	0		84	
Whistling										
Trumpeter										
Geese:										
Canada	frozen			2	2	0	0		28	
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard		550	550	500	35	35	35		11,935	
Black										
Gadwall					50	50	50		1,050	
Baldpate		20	20	20	10	10	10		630	
Pintail		500	500	250	40	40	40		9,590	
Green-winged teal		50	50	40	10	10	10		1,190	
Blue-winged teal										
Cinnamon teal										
Shoveler										
Wood										
Redhead										
Ring-necked										
Canvasback										
Scaup					30	40			490	
Goldeneye										
Pufflehead										
Ruddy										
Other										
Total Ducks		1,120	1,120	810	175	185	145		24,885	
Coot:										
	*Periods of Actual Census (Class B)				(over)	All other periods (Class D)				

Best possible image.

	(5) Total Days Use	(6) Peak Number	(7) Total Production	SUMMARY
Swans	84	7		Principal feeding areas Inlet slough and adjacent
Geese	28	4		grain fields.
Ducks	24,885	1,120		Principal nesting areas Lake shore and adjacent
Coots	0	0		range lands.
				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).

MONTHS OF January TO April, 19 67

[illegible]

WATERFOWL

REFUGE Mason Complex

MONTHS OF January TO April, 19 67

[illegible]

Cont. NR-1
(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

MONTHS OF January TO April, 19 67

(1) Species	(2) Weeks of reporting period							(3)	(4)	
	3/12-18 11	3/19-25 12	3/26-4/F 13	4/2-8* 14	4/9-15* 15	4/16-22 16	4/23-29 17	18	Estimated waterfowl days use	Production Broods:Estimated seen : total
Swans:			****3/4	Dry****						
Whistling	Frozen-----		3	3	0	0	0		42	
Trumpeter										
Geese:										
Canada										
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard			225	220	220	200	200		7,455	
Black										
Gadwall					100	150	250		3,500	
Baldpate			25	100	150	200	150		4,375	
Pintail			250	300	330	300	150		9,310	
Green-winged teal					250	300	250		5,600	
Blue-winged teal							50		350	
Cinnamon teal										
Shoveler					50	75	100		1,575	
Wood										
Redhead							50		350	
Ring-necked										
Canvasback										
Scaup				300	400	300	200		8,400	
Goldeneye										
Bufflehead										
Ruddy										
Other Total Ducks			500	920	1,500	1,525	1,400		40,915	
Coot:										
* Periods of actual census (Class B over) All other periods Class D.										

	(5)	(6)	(7)	SUMMARY
	Total Days Use	Peak Number	Total Production	
Geans	42	3		Principal feeding areas <u>Aquatic vegetation and adjacent</u>
Gre	0	0		<u>rain fields</u>
Ducks	40,915	1,525		Principal nesting areas <u>Same as above</u>
Cats	0	0		
				Reported by <u>Gibbons-Burkholder</u>

INSTRUCTIONS (See Sects. 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).

lev. March 1953)

WATERFOWL

REFUGE War Horse Lake

MONTHS OF January TO April, 19 67

[illegible]

(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

EFUGE War Horse Lake

MONTHS OF January TO April, 19 67

[illegible]

	(5)	(6)	(7)	SUMMARY
	Total Days Use	Peak Number	Total Production	
Swans	7	1		Principal feeding areas <u>aquatic vegetation in lake</u>
Geese	42	2		<u>and adjacent grain fields.</u>
Ducks	196,600	8,100		Principal nesting areas <u>same as above</u>
Costs	3,500	300		
				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. Band 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 Wild Horse Lake

MONTHS OF January TO April, 19 67

[illegible]

-1750B

Cont. NR-1

Rev. March 1953)

WATERFOWL

(Continuation Sheet)

RUGE Wild Horse Lake

MONTHS OF January

TO April

. 1967

. 1967

(1) Species	(2) Weeks of reporting period							(3)	(4)	
	3/12-18	3/19-25	3/26-4/1	4/2-8	4/9-15	4/16-22	4/23-29	Estimated waterfowl days use	Production Broods: Estimated seen : total	
	11	12	13*	14	15*	16	17	18		
ans:										
Whistling	Frozen----		0	0	0	0	0	dry	0	
Trumpeter										
ese:										
Canada			0	0	0	0	0		0	
Jackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
cks:										
Gallard			25	50					525	
Black										
Adwall			75	100	30	30	30		1,855	
Baldpate					40	50	30		840	
Pintail			300	400	30	20	40		5,530	
Green-winged teal				50	100	100	20		1,890	
Blue-winged teal										
Cinnamon teal										
Shoveler						50	30		360	
Food										
Redhead										
Ring-necked										
Canvasback										
Scaup										
Goldeneye										
Bufflehead										
Ruddy										
Other Total Ducks			400	600	200	250	150		11,200	
ot:										
*Periods of Actual Census (Class B) All other periods (Class D)										
(over)										

	(5)	(6)	(7)	
	<u>Total Days Use</u>	<u>Peak Number</u>	<u>Total Production</u>	<u>SUMMARY</u>
Swans	0	0		Principal feeding areas <u>Shallow lake bottom and adjacent</u>
Geese	0	0		<u>rain fields.</u>
Ducks	11,200	600		Principal nesting areas <u>None-area is dry prior to nesting</u>
Coots	0	0		
				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).

Cont. N
(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

MONTHS OF January TO April, 19 67

(1) Species	(2) Weeks of reporting period								(3)	(4)	
	3/12-18	3/19-25	3/26-4/1	4/2-8	4/9-15	4/16-22	4/23-29	18	Estimated waterfowl days use	Production Broods: Estimated seen : total	
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada	Frozen-----	12	12	11	10	10			385		
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard		100	100	50	50	50			2,450		
Black											
Gadwall		100	100	100	100	100			3,500		
Baldpate		50	100	150	150	150			4,200		
Fintail		300	300	50	50	50			5,250		
Green-winged teal				30	50	50			910		
Blue-winged teal											
Cinnamon teal											
Shoveler				70	70	70			1,470		
Wood											
Redhead		100							700		
Ring-necked											
Canvasback		50	200	250	200	100			5,600		
Scaup											
Goldeneye		300	300	150	100	50			6,300		
Bufflehead											
Ruddy											
Other											
Total Ducks		1,000	1,100	850	770	620			30,380		
Coot:					10	20			210		
* Periods of Actual Census (Class B) All other periods (Class D)											

	(5) Total Days Use	(6) Peak Number	(7) Total Production	SUMMARY
Swans	0	0		Principal feeding areas Lake shore & inlet
Geese	385	12		
Ducks	30,380	1,100		Principal nesting areas Lake shore, inlet and adjacent
Coots	210	20		range lands.
				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.....Satellites..... Months of January..... to April..... 1956

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. <u>Water and Marsh Birds:</u>										
None										
II. <u>Shorebirds, Gulls and Terns:</u>										
<u>Wildhorse</u>										
Avocet	20	04/12/67	30	04/30/67	30	04/30/67				
Curlew (long bill)	15	04/12/67	15	04/30/67	15	04/30/67				
<u>Mason - Talbot</u>										
Wilson Phalarope	100	04/12/67	1,000	04/30/67	1,000	04/30/67				
Longbill Curlew	7	04/12/67	25	04/30/67	25	04/03/67				
<u>Wild Horse</u>										
Western Grebe	20	04/12/67	200	04/30/67	200	04/30/67				

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. <u>Doves and Pigeons:</u> Mourning dove White-winged dove	2	04/19/67	50	04/30/67	4
				04/12/67	
IV. <u>Predaceous Birds:</u> Golden eagle Duck hawk Horned owl Magpie Raven Crow	Permanent Resident	5	03/15/67	year-long residents	
Reported by Burkholder & 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.

3-1752
Form NR-2
(April 1946)

UPLAND GAME BIRDS

Refuge Satellites Months of January to April, 19 67

(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'y'd.	Estimated Total	Percentage	Hunting	For Re- stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Ring-necked Pheasants	Population down									All species use areas on an on-off basis. No basis for estimating populations. Cold wet spring resulted in decrease in numbers of all upland bird species. Class "D" Information.
Sage Grouse	Population down									
Sharptail Grouse	Population down									
European Quail	Population down									

Best possible image.

3-1754
Form NR-4
(June 1945)

SMALL MAMMALS

Refuge Satellites

Year ending April 30, 1967

(1) Species	(2) Density		(3) Removals					(4) Disposition of Furs					(5) Total Popula- tion	
Common Name	Class D Cover Types & Total Acreage of Habitat	Acres Per Animal	Hunting	Fur Harvest	Predator Control *	For Re- stocking	For Re- search	Share Trapping			Total Refuge Furs Shipped	Furs Donated	Furs Destroyed	Class D
								Permit Number	Trappers Share	Refuge share				
Coyote	Population increasing													Common
Striped Skunk	Population decreasing													Common
White-tailed Jackrabbit	Population decreasing													Common
Cottontail	Population decreasing													Common
Badger	Population decreasing													Common

* List removals by Predator Animal Hunter

* List removals by Predator Animal Hunter

REMARKS: No differences noted among any of the seven satellite areas.

Burkholder & Gibbons

Reported by

Best possible image.

* Actual census periods.
Remainder estimated by interpolation.

MONTHS OF May TO August, 19 67

[illegible]

3 -1750a

Cont. NR-1
(Rev. March 1953)WATERFOWL
(Continuation Sheet)REFUGE Hallstone LakeMONTHS OF May TO August, 19 67

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen : total	
	11	12	13	14	15	16	17	18			
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada					20	20	15	15	100		
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard	100	100	100	150	200	200	200	200	12,810	2	50
Black	50	50	50	100	100	100	100	100	6,750	2	50
Gadwall	15	15	50	50	50	50	50	50	5,775	5	100
Baldpate	50	50	50	60	50	50	100	100	5,815	1	
Pintail	10	20	20	100	150	100	100	100	6,150		
Green-winged teal	50	50	100	150	200	250	150	100	9,500	3	50
Blue-winged teal											
Cinnamon teal	50	50	50	50	50	50	50	50	4,970		
Shoveler											
Wood											
Redhead											
Ring-necked											
Canvasback											
Scaup									1,555		
Goldeneye											
Bufflehead											
Buddy									2,270		
Other	255	345	120	600	830	840	750	700	57,575	13	250
Coot:							50	100	2,210		

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production	SUMMARY
Swans	<u>-0-</u>	<u>-0-</u>	<u>-0-</u>	Principal feeding areas <u>Inlet slough and adjacent</u>
Geese	<u>190</u>	<u>20</u>	<u>-0-</u>	<u>grain fields.</u>
Ducks	<u>57,575</u>	<u>310</u>	<u>250</u>	Principal nesting areas <u>Lake shore and adjacent range</u>
Coots	<u>2,210</u>	<u>100</u>	<u>-0-</u>	<u>lands.</u>
				Reported by <u>Gilbons & Burdick</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).

* Actual census periods. Remainder estimated by interpolation.

REFUGE Halfbreed Lake

MONTHS OF May TO August, 19 67

[illegible]

3 -1750a

Cont. NR-1

(Rev. March 1953)

WATERFOWL
(Continuation Sheet)REFUGE Halfreed LakeMONTHS OF May TO August, 1967

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen : total	
	11	12	13	14	15	16	17	18			
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada											
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard	360	360	400	400	400	400	500	500	27,500	4	50
Black											
Gadwall											
Baldpate	360	360	400	400	400	400	400	400	24,200	3	30
Pintail	120	120	200	300	400	500	500	500	20,500	7	75
Green-winged teal											
Blue-winged teal	360	360	400	500	1,000	1,000	600	200	33,000	3	10
Cinnamon teal											
Shoveler											
Wood											
Redhead											
Ring-necked											
Canvasback											
Scaup											
Goldeneye											
Bufflehead											
Ruddy											
Other	1,200	1,200	1,400	1,600	2,200	2,300	2,000	1,600	105,200	17	195
Coot:											

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production	SUMMARY
Swans	0	0	0	Principal feeding areas <u>Cattail marsh.</u>
Geese	0	0	0	
Ducks	105,210	2,300	190	Principal nesting areas <u>Lake dry.</u>
Coots	0	0	0	
				Reported by <u>Gibbons & Burdholder</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).

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Form NR-1
(Rev. March 1953)

* Actual census periods. Res-inter
estimated by interpolation.

WATERFOWL

REFUGE Mason-Rail Lake

MONTHS OF May TO August, 19 67

(1) Species	(2) Weeks of reporting period									
	4/30-5/6	5/7-13	5/14-20	5/21-27	5/28-6/3	6/4-10	6/11-17	6/18-24	6/25-7/1	7/2-8
	1	2	3	4	5	6	7	8	9	10
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada										
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	65	65	90	15	10	30			100	300
Black										
Gadwall	120	120	200	200	100	50	50	30	250	100
Baldpate	150	120	100			50	50	20	100	100
Pintail	100	15	20	20	30	50	65	35	200	250
Green-winged teal	250	220	50	10	10					150
Blue-winged teal	50	20	20	5	10	30	15	25	50	100
Cinnamon teal										
Shoveler	50	20	20	20	20				100	200
Wood										
Redhead	20	10								
Ring-necked										
Canvasback	30	10	10	5						
Scaup	20	20	10							
Goldeneye										
Bufflehead										
Ruddy	20	10								
Other	505	650	510	305	210	210	210	100	800	1,500
TOTAL DUCKS										
Coot:		100		20					50	100

3 -1750a

Cont. NR-
(Rev. March 1953)WATERFOWL
(Continuation Sheet)REFUGE Huron-Talbot LakeMONTHS OF May TO August, 19 67

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production : Broods: Estimated : seen : total	
	11	12	13	14	15	16	17	18			
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada						25	35	10	756		
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard	300	300	500	600	1,000	1,300	1,500	2,000	51,366	3	50
Black											
Gadwall	300	600	800	1,000	1,500	1,500	1,800	2,000	79,500	1	30
Baldpate	150	200	400	600	800	1,000	1,000	1,000	46,300	1	30
Pintail	300	300	400	400	500	900	1,000	1,000	39,025		20
Green-winged teal	150	150	150	150	600	1,300	2,000	2,500	59,020		10
Blue-winged teal	100	100	100	150	500	1,300	1,500	200	30,135		20
Cinnamon teal											
Shoveler	200	200	250	300	300	300	400	500	28,160		20
Wood											
Redhead							100	200	2,310		
Ring-necked											
Canvasback							50	100	1,575		
Scaup									350		
Goldeneye											
Bufflehead											
Ruddy									210		
Other											
TOTAL DUCKS	1,700	1,900	2,600	3,200	5,200	7,750	9,350	9,400	325,220	5	130
Coot:	300	400	500	500	500	500	500	600	28,190		50

(over)

	(5)	(6)	(7)
	Total Days Use	Peak Number	Total Production
Swans	-0-	-0-	-0-
Geese	756	18	-0-
Ducks	325,220	9,100	180
Coots	28,190	600	150

SUMMARY

Principal feeding areas Aquatic vegetation in lake and adjacent grain fields.

Principal nesting areas Lake shore emergent vegetation, inlet canal marsh and adjacent range lands.

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).

Interior Duplicating Section, Washington, D. C.

1953

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Form NR-1
(Rev. March 1953)

* Actual census periods.
Remainder estimated by
interpolation.

WATERFOWL

REFUGE Miller Lake

MONTHS OF May TO August, 19 67

(1) Species	(2) Weeks of reporting period									
	6/30-5/6 : 5/7-13	5-13-20 : 5/21-27	5/28-6/3 : 6/10-16	6/13-19 : 6/20-26	6/23-29 : 6/30-7/6	7/7-13 : 7/14-20	7/21-27 : 7/28-8/3	8/4-10 : 8/11-17	8/18-24 : 8/25-31	9/1-7 : 9/8-14
	1	2	3	4	5	6	7	8	9	10
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada										
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	25	20	10	5	5	5	5	5	30	10
Black										
Gadwall	10	30	20	20	20	15	10	10		
Baldpate										
Pintail	20	10	10	5	5	5	5	10	10	10
Green-winged teal	30	20	20	20						
Blue-winged teal										
Cinnamon teal										
Shoveler			10	10	5					
Wood										
Redhead				5						
Ring-necked										
Canvasback										
Scaup										
Goldeneye										
Bufflehead										
Ruddy				20						
Other										
TOTAL DUCKS	115	80	70	85	35	25	20	25	20	20
Coot:	15	15	15	15	10	10	5			

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Cont. NR-1
(Rev. March 1953)WATERFOWL
(Continuation Sheet)

REFUGE

Miller Lake

MONTHS OF

May

TO

August

, 19 67

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen : total
	11	12	13	14	15	16	17	18		
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada										
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	10	12	10	10	5				1,029	5
Black										
Gadwall							5	5	1,221	
Baldpate										
Pintail	15	15	20	20	20	20	20	20	1,620	5
Green-winged teal							50	50	1,320	
Blue-winged teal	5	5	5	5	50	30			700	
Cinnamon teal										
Shoveler									125	
Wood										
Redhead									35	
Ring-necked										
Canvasback										
Scaup										
Goldeneye										
Bufflehead										
Buddy									110	
Other	30	32	35	35	75	50	75	75	6,310	10
Coot:									595	

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production	SUMMARY
Swans	0	0	0	Principal feeding areas <u>Lake shore near inlet.</u>
Geese	0	0	0	
Ducks	6,374	115	20	Principal nesting areas <u>here also, adjacent range lands.</u>
Coots	0	15	0	
				Reported by <u>Gibbons & Burtholder</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 War Horse Lake

MONTHS OF May TO August, 1967

(1) Species	(2) Weeks of reporting period									
	1/30-5/6	5/7-13	5/14-20	5/21-27	5/28-6/3	6/4-10	6/11-17	6/18-24	6/25-7/1	7/2-8
	1	2	3	4	5	6	7	8	9	10
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada	10		2	2	5	7	14	14	2	2
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	1,000	900	250	50	50	100	130	130	130	130
Black	2,000	2,000	900	300	300	200	160	160	150	150
Gadwall	1,500	1,500	900	200	200	200	160	160	150	150
Baldpate	300	200	100	50	50	50	30	30	30	30
Pintail			100	50	50	20	20	20	20	20
Green-winged teal					150	100	60	60	60	60
Blue-winged teal										
Cinnamon teal										
Shoveler	300	200	200	100	100	100	90	90	100	100
Wood										
Redhead	500	500	400	100	100	50	30	30	50	50
Ring-necked										
Canvasback	100	50								
Scaup	250	200	100	50	50	50	20			
Goldeneye										
Bufflehead										
Ruddy	500	500	400	100						
Other	6,650	5,650	2,450	1,000	1,050	860	690	690	700	710
TOTAL DUCKS										
Coot:	1,500	1,400	500	400	300	200	200	200	200	200

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Cont. NR-1

(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE

War Horse Lake

MONTHS OF

May

TO

August

, 19 67

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen : total	
	11	12	13	14	15	16	17	18			
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada	5	5	17	20			30		95	1	3
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard	130	100	200	500	750	800	900	1,000	17,950	26	180
Black											
Gadwall	150	150	250	300	350	900	1,000	1,000	72,550	22	170
Baldpate	150	150	150	250	300	900	1,000	1,300	64,550	15	90
Pintail	50	50	100	150	500	500	500	500	24,250	10	60
Green-winged teal	20	25	30	50	50	500	1,000	1,000	20,750	2	20
Blue-winged teal	50	50	100	100	150	500	1,500	200	22,100	2	30
Cinnamon teal											
Shoveler	50	50	100	100	100	500	500	500	22,050	2	50
Wood											
Redhead	100	220	200	220	150	600	900	1,000	30,015		
Ring-necked											
Canvasback								20	1,150		
Scaup									1,970		
Goldeneye											
Bufflehead											
Buddy											
Other	750	550	1,150	1,070	3,600	5,200	7,300	6,300	10,500	79	600
TOTAL DUCKS									330,650		
Coot:	200	200	250	300	500	500	500	500	56,350	5	100

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production	SUMMARY
Swans	0	0	0	Principal feeding areas <u>Acquatic vegetation in lake and</u>
Geese	965	30	3	<u>adjacent grain fields.</u>
Ducks	330,600	7,300	600	Principal nesting areas <u>Same as above.</u>
Coots	56,350	1,500	100	
				Reported by <u>Gibbons & Burdholder</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).

Actual census periods. Numbers
estimated by interpolation.

REFUGE Wild Horse Lake

MONTHS OF May TO August, 1967

[illegible]

3 -1750a

Cont. NR-1
(Rev. March 1953)WATERFOWL
(Continuation Sheet)REFUGE Wild Horse LakeMONTHS OF May TO August, 19 67

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen : total	
	7/7-15	7/16-22	7/23-29	7/30-8/5	8/6-12	8/13-19	8/20-26	8/27-31			
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada											
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard	10	10	5						1,025		
Black											
Gadwall	10	10	5						1,105		
Baldpate	10	10							1,120		
Pintail	10	10							1,960		
Green-winged teal									3,500		
Blue-winged teal											
Cinnamon teal											
Shoveler	5	5							2,310		
Wood											
Redhead											
Ring-necked											
Canvasback											
Scaup											
Goldeneye											
Bufflehead											
Ruddy	15	15	10						11,070		
Other											
Coot:											

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production	SUMMARY
Swans	0	0	0	Principal feeding areas <u>Shallow lake bottom and adjacent</u>
Geese	0	0	0	<u>grain fields.</u>
Ducks	11,070	310	0	Principal nesting areas <u>Lake dry during nesting</u>
Coots	0	0	0	<u>season.</u>
				Reported by <u>Gibbons & Burdholder</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)

Partial census periods. Remainder
estimated by interpolation.

WATERFOWL

REFUGE Yellow Water Lake

MONTHS OF May TO August, 1967

(1) Species	(2) Weeks of reporting period									
	4/30-5/6 1	5/7-13 2	5/14-20 3	5/21-27 4	5/28-6/3 5	6/4-10 6	6/11-17 7	6/18-24 8	6/25-7/1 9	7/2-8 10
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada	5	4	10	10	10					
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	60	50	20	20	20	30	45	45	45	45
Black										
Gadwall	200	150	100	50	50	50	15	15	10	10
Baldpate	200	150	50	20	20	20	20	20	20	20
Pintail	50	25	20	10	10	10	10	10	10	10
Green-winged teal										
Blue-winged teal						20	15	15	15	15
Cinnamon teal										
Shoveler	50	10	30	20	20	10	10	10	10	
Wood										
Redhead										100
Ring-necked										
Canvasback	25	10	10	10	10	5	5			
Scaup	100	75	50	30	20	10	10			
Goldeneye										
Bufflehead										
Ruddy	200	200	150	100	50					
Other	100	70	130	200	200	165	170	155	140	230
TOTAL DUCKS										
Coot:	250	200	150	110	100	100	100	100	100	100

3 -1750a

Cont. NR-1
(Rev. March 1953)WATERFOWL
(Continuation Sheet)

REFUGE Yellow Water Lake

MONTHS OF May TO August, 1967

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen : total	
	11	12	13	14	15	16	17	18			
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada				5	10	20	20	20	790		
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard	10	10	10	100	200	300	100	100	13,300	2	20
Black											
Gadwall	10	10	10	70	100	200	200	200	11,120	2	20
Baldpate	20	20	20	30	10	20	10	100	6,520		20
Pintail	10	10	10	30	20	100	200	200	5,125		20
Green-winged teal					100	200	100	100	3,300		
Blue-winged teal	10	10	10	30	130	130	20	20	1,710		10
Cinnamon teal								20	350		
Shoveler									1,500		
Wood											
Redhead	100	100	100	100	100	100	100	100	6,300		
Ring-necked											
Canvasback									100		
Scaup									2,005		
Goldeneye											
Bufflehead											
Buddy									1,900		
Other	200	200	200	300	700	1,200	1,200	1,500	60,570	4	90
Coot:	100	100	100	100	200	300	100	100	21,300		20

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production	SUMMARY
Swans	0	0	0	Principal feeding areas <u>Lake shore and inlet.</u>
Geese	790	30	0	
Ducks	62,370	1,900	90	Principal nesting areas <u>Lake shore inlet and adjacent</u>
Coots	21,500	100	50	<u>range lands.</u>
				Reported by <u>Glenn & Burtholder</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 Hallstrom, Halfbreed,
Lake Mason ComplexMonths of Mayto August195 67

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. <u>Water and Marsh Birds:</u>										
Western Grebe	2	05-05-67	50	08-67	Still Present		Unknown			90
White Pelican	150	05-05-67	350	08-67	Still Present		None			350
Great Blue Heron	2	05-20-67	8	08-67	Still Present		Unknown			8

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. <u>Doves and Pigeons:</u>					
Mourning dove	Last Period	250	08-67	Still Present	Unknown
White-winged dove					500
IV. <u>Predaceous Birds:</u>					
Golden eagle	Permanent Resident	5			Unknown
Duck hawk					5
Horned owl					
Magpie	3	05-05-67	15	08-67	Still Present
Raven					Unknown
Crow					25
Sparrow Hawk	1	05-13-67	10	08-67	Still Present
Marsh Hawk	3	05-18-67	10	08-67	Still Present
					Unknown
					10
					10
Gibbons & 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.

3-1751

Form NR-1A
(Nov. 1945)

MIGRATORY BIRDS

(other than waterfowl)

Refuge

Wildhorse, War Horse,
Yellow Water

Months of

May August

195

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. <u>Water and Marsh Birds:</u>										
Western Grebe	Last Period		200	08-67	Still Present		Unknown			300
Double-crested Cormorant	10	05-05-67	75	08-67	Still Present		Unknown			100
White Pelican	100	05-05-67	350	08-67	Still Present		None			350
Great Blue Heron	1	05-05-67	10	08-67	Still Present		Unknown			15
II. <u>Shorebirds, Gulls and Terns:</u>										
California Gull	150	05-05-67	350	08-67	Still Present		Unknown			500
Long-billed Curlew	Last Period		120	08-20-67	Still Present		Unknown			200
Killdeer	5	05-05-67	15	08-67	Still Present		Unknown			75
Wilson Phalarope	350	05-08-67	500	08-67	Still Present		Unknown			500
Avocet	Last Period		15	08-67	Still Present		Unknown			75

(over)

1613

Months of May to August, 19 67

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'd. Estimated Total	Percentage	Hunting	For Re- stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.	
Gray Partridge									Small numbers of these four species use the areas on an on-and-off basis. Actual numbers aren't known. Production this season is good, but figures are un- available.	
Sharp-tail Grouse										
Rose Grouse										
Ring-necked Pheasant										

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

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

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

3-1751

Form NR-1A
(Nov. 1945)

MIGRATORY BIRDS

(other than waterfowl)

Refuge CNR SatelliteMonths of Sept.to December1967

(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. Water and Marsh Birds:									
Eared Grebe		Last Period			5	10/5			50
Western Grebe		" "			35	11/15			75
White Pelican		" "			75	10/5			175
Double-Crested Cormorant		" "			10	11/15			50
II. Shorebirds, Gulls and Terns:									
Killdeer		Last Period			1	9/30			200
Wilson Phalarope		" "			20	10/5			100
California & Ring-Billed Gulls		" "			2	11/15			500

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. <u>Doves and Pigeons:</u>					
Mourning dove	Last	Period	13	9/2	150
White-winged dove					
IV. <u>Predaceous Birds:</u>					
Golden eagle	Year Long Resident				10
Duck hawk					
Horned owl	"	"			5
Magpie	"	"			50
Raven					
Crow					
Marsh Hawk	"	"			20
Reported by <u>Bob L. Burkholder</u>					

INSTRUCTIONS

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

3-1752
Form NR-2
(April 1946)

UPLAND GAME BIRDS

Charles M. Russell National Wildlife Range 1613

Refuge Satellite Areas

Months of September to December, 19 67

(1) Species	(2) Density	(3) Young Produced	(4) Sex Ratio	(5) Removals	(6) Total	(7) Remarks	
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'd. Estimated Total	Percentage	Hunting For Re- stocking For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
<u>Hailstone</u>							All birds use the areas on an on-off basis.
Sage Grouse						50	
Pheasant						10	
<u>Hungarian Partridge</u>						25	
<u>Halfbreed</u>							
Sage Grouse						25	
Pheasant						5	
<u>Hungarian Partridge</u>						15	
<u>Lake Mason</u>							
Sage Grouse						30	
Pheasant						35	
<u>War Horse</u>							
Sage Grouse						60	
Pheasant						8	
<u>Wild Horse</u>							
Sage Grouse						45	
Pheasant						10	
<u>Yellow Water</u>							
Sage Grouse						50	
Pheasant						10	

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

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

- | | (1) SPECIES: | (2) DENSITY: | (3) YOUNG PRODUCED: | (4) SEX RATIO: | (5) REMOVALS: | (6) TOTAL: | (7) REMARKS: |
|--|--------------------------|--|---|---|--|--|---|
| | Use correct common name. | 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. | Estimated number of young produced, based upon observations and actual counts in representative breeding habitat. | This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available. | Indicate total number in each category removed during the report period. | Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons. | 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

Charles M. Russell National Wildlife Range

Refuge Satellite Areas

Calendar Year 67

(1) Species	(2) Density	(3) Young Produced	(4) Removals				(5) Losses			(6) Introductions	(7) Estimated Total Refuge Population		(8) Sex Ratio
			Hunting	For Re- stocking	Sold	For Research	Predation	Disease	Winter Loss		At period of Greatest use	As of Dec. 31	
Common Name	Cover types, total Acreage of Habitat	Number								Number	Source		
<u>Hailstone</u>													
<u>Antelope</u>		2									20	12	50:100
<u>Halfbreed</u>													
<u>Antelope</u>		3									15	15	50:100
<u>Lake Mason</u>													
<u>Antelope</u>		25									125	125	50:100
<u>War Horse</u>													
<u>Antelope</u>		6									30	20	50:100
<u>Mule Deer</u>		2									15	10	50:100
<u>Wild Horse</u>													
<u>Antelope</u>		5									25	20	50:100
<u>Mule Deer</u>		2									10	8	50:100
<u>Yellow Water</u>													
<u>Antelope</u>		6									20	15	50:100
<u>Mule Deer</u>		2									6	6	50:100

Remarks:

Reported by _____

INSTRUCTIONS

Form NR-3 - BIG GAME

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

DISEASE

Refuge Satellite Areas

Year 19 67

Botulism

Lead Poisoning or other Disease

Period of outbreak None Noted

Kind of disease None Noted

Period of heaviest losses _____

Species affected _____

Losses:

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

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

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

Number Recovered _____

(a) Waterfowl	_____	_____
(b) Shorebirds	_____	_____
(c) Other	_____	_____

Number lost _____

Source of infection _____

Areas affected (location and approximate acreage) _____

Water conditions _____

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

Food conditions _____

Condition of vegetation and invertebrate life _____

Remarks _____

Remarks _____

PUBLIC RELATIONS

(See Instructions on Reverse Side)

Refuge Satellite RefugesCalendar Year 1967

1. Visits

a. Hunting 280 b. Fishing 6,000 c. Miscellaneous 2,200 d. TOTAL VISITS 8,480

1a. Hunting (on refuge lands)

TYPE	HUNTERS	ACRES	MANAGED BY
Waterfowl	<u>250</u>	<u>640</u>	<u>FWS</u>
Upland Game	<u>10</u>	<u>640</u>	<u>FWS</u>
Big Game	<u>10</u>	<u>640</u>	<u>FWS</u>
Other	<u>10</u>	<u>640</u>	<u>FWS</u>

Number of permanent blinds NoneMan-days of bow hunting included above NoneEstimated man-days of hunting on lands adjacent to
refuge 3,000

1b. Fishing (area open to fishing on refuge lands)

TYPE OF AREA	ACRES	MILES
Ponds or Lakes	<u>900</u>	<u>Yellow Water</u>
	<u>900</u>	<u>Warhorse</u>
Streams and Shores		

1c. Miscellaneous Visits

Recreation 8,480 Official 100

Economic Use 10 Industrial --

2. Refuge Participation (groups)

TYPE OF ORGANIZATION	On Refuge		Off Refuge	
	NO. OF GROUPS	NUMBER IN GROUPS	NO. OF GROUPS	NUMBER IN GROUPS
Sportsmen Clubs			<u>2</u>	<u>325</u>
Bird and Garden Clubs				
Schools				
Service Clubs				
Youth Groups				
Professional-Scientific				
Religious Groups				
State or Federal Govt.				
Other				

3. Other Activities

TYPE	NUMBER	TYPE	NUMBER
Press Releases		Radio Presentations	
Newspapers (P.R.'s sent to)		Exhibits	
TV Presentations		Est. Exhibit Viewers	

INSTRUCTIONS

Item 1: Total of a, b, and c, equal d.

"Visit" - definition. Any person who is on refuge lands or waters during a day or part thereof for the purpose of: hunting, fishing, bird-watching, recreation, business or economic use, official visit, or similar interest. INCLUDE - those who stop within the refuge while traveling on a public highway because of an interest in the area. EXCLUDE - persons engaged in oil or other industry not directly related to the refuge, persons using refuge as most direct route or principal avenue of traffic, and those boating on navigable rivers or the Intercoastal Canal, unless they stop to observe wildlife on the refuge.

Computing visits. Where actual counts are impractical, "sampling" is used with midweek and week-end samples varied by season or weather. A conversion factor of 3.5 (of passengers per car) is used when accurate figures are not available. Each refuge will develop a conversion factor for boats based on range of usage. Count a camper once for each 24-hour period or fraction thereof.

Item 1a: Acres - of refuge open for each type of hunting.

Managed hunts require check in and out of hunters, issuance of permits, or assignment of blinds.

Other - INCLUDE crow, fox, and similar hunting.

Lands adjacent to refuge. Normally considered within 1 mile or less of boundary, unless established sampling procedures cover a wider area. For big game hunting, the distance may be greater.

Item 1b: Acres of streams open to fishing, if practical; otherwise just miles open. Information on "shores" is primarily for coastal fishing.

Item 1c: Recreation. INCLUDE photography, observing wildlife, picnicking, swimming, boating, camping, visitor center use, tours, etc. TOTAL Recreation, Official, and Economic Use visits under Item 1.

Industrial. INCLUDE persons engaged in industry, i.e., oil industry or factories. EXCLUDE these from Item 1.

Item 2: INCLUDE the "On Refuge" groups in Items 1c and 1. In "Off Refuge" column include only those group meetings in which refuge employees actually participate. EXCLUDE these from Items 1c and 1.

Item 3: Exhibits - INCLUDE displays, fairs, parades, and exhibits OFF the refuge; EXCLUDE those ON.

PUBLIC RELATIONS

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

Charles M. Russell National Wildlife Range
(1)

NONAGRIC. LAND COLLECTIONS, RECEIPTS, AND PLANTINGS

Refuge Satellite Areas Year 19 67

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
None													

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

Total acreage planted:

Marsh and aquatic _____
Hedgerows, cover patches _____
Food strips, food patches _____
Forest plantings _____

Remarks: _____

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

Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Stillwater-Musselshell,

Refuge Satellite Areas

County and Petroleum

State Montana

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure, Cover and Water- fowl Browsing Crops Type and Kind	Total Acreage
	Acres	Bu./Tons	Harvested		Unharvested				
			Acres	Bu./Tons	Acres	Bu./Tons			
None on Satellites.									
								Fallow Ag. Land	

No. of Permittees: Agricultural Operations -- Haying Operations -- Grazing Operations 15

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING	Number Animals	AUM'S	Cash Revenue	ACREAGE
				1. Cattle	450	3800	\$1254	14,421
				2. Other				
				1. Total Refuge Acreage Under Cultivation				
Hay - Wild				2. Acreage Cultivated as Service Operation				

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

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

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

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

Permittee's Share - Only 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)

WATERFOWL

REFUGE Hallstone Charles M. Russell National Wildlife Range MONTHS OF September TO December, 19 67

(1) Species	(2) Weeks of reporting period									
	9/1-2 1	9/3-9 2	9/10-16 3	9/17-23 4	9/24-30 5	10/1-7 6	10/8-14 7	10/15-21 8	10/22-28 9	10/29-11/4 10
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada	20	20						50		
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	200	400	450	500	500	600	800	500		
Black										
Gadwall	100	100	75	1,000	1,500	1,000	800	400		
Baldpate	50	200	300	300	300	600	600	100		
Pintail	100	100	400			500	800			
Green-winged teal	100	150	150	300	250	500	600			
Blue-winged teal	100	350	300							
Cinnamon teal										
Shoveler	50	75	75	100	50					
Wood										
Redhead				500	1,500	1,400	400	500		
Ring-necked										
Canvasback										
Scaup										
Goldeneye										
Bufflehead										
Ruddy										
Total Ducks	700	1,375	1,750	2,700	4,100	4,600	4,000	1,500		
Coot:	100	500	1,100	1,000	1,000	1,500	2,000	2,000		

3 -1750a

Cont. NR-1
(Rev. March 1953)WATERFOWL
(Continuation Sheet)REFUGE Hallstone

Charles M. Russell National Wildlife Range

MONTHS OF SeptemberTO December, 1967

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen : total
	11/5-11	11/12-18	12/19-25	11/26-12/2	12/3-9	12/10-16	12/17-23	12/24-31		
	11	12	13	14	15	16	17	18		
Swans:										
Whistling	Frozen									
Trumpeter										
Geese:										
Canada		50							980	
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard		100							28,350	
Black										
Gadwall									34,825	
Baldpate		50							17,500	
Pintail									13,300	
Green-winged teal									14,350	
Blue-winged teal									5,250	
Cinnamon teal										
Shoveler									2,450	
Wood										
Redhead									30,100	
Ring-necked										
Canvasback										
Scaup		20							140	
Goldeneye										
Bufflehead										
Ruddy										
XXXX Total Ducks		170							146,265	
Coot:									64,400	

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production	SUMMARY
Swans	0	0		Principal feeding areas
Geese	980	50		
Ducks	146,265	4,600		Principal nesting areas
Coots	64,400	2,000		
				Reported by <u>Bob L. 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).

Interior Duplicating Section, Washington, D. C.

1953

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

WATERFOWL

REFUGE Halfbreed Charles M. Russell National Wildlife Range

MONTHS OF September TO December, 1967

(1) Species	(2) Weeks of reporting period									
	9/1-2 1	9/3-2 2	9/10-16 3	9/17-23 4	9/24-30 5	10/1-7 6	10/8-14 7	10/15-21 8	10/22-28 9	10/29-11/4 10
Swans:										
Whistling										
Trumpeter										Frozen
Geese:										
Canada						20	58	61		
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	500	900	950	1,000	1,000	1,500	1,500	1,200		
Black										
Gadwall		100	125	1,500	2,000	1,500	1,000	1,000		
Baldpate	400	400	350	400	500	500	500	500		
Pintail	500	300	250	350	350	400	1,000	500		
Green-winged teal		100	250	300	300	200	100			
Blue-winged teal	200	500	750	1,500	200					
Cinnamon teal										
Shoveler			125	100	150	150	150	150		
Wood										
Redhead			700	800	1,000	1,000	750			
Ring-necked										
Canvasback										
Scaup										
Goldeneye										
Bufflehead										
Ruddy										
Other Total Ducks	1,600	2,300	3,500	5,950	5,500	5,250	5,000	3,350		
Coot:	100	100	700	800	1,000	1,000	1,000	1,500		

3 -1750a

Cont. NR-1
(Rev. March 1953)WATERFOWL
(Continuation Sheet)REFUGE Halfreed Charles M. Russell National Wildlife Range MONTHS OF September TO December, 1967

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen : total
	11/5-11	11/12-18	11/19-25	11/26-12/2	12/3-9	12/10-16	12/17-23	12/24-31		
Swans:										
Whistling	Frozen			Frozen						
Trumpeter										
Geese:										
Canada		20							1,113	
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard									59,850	
Black										
Gadwall									50,575	
Baldpate		20							24,990	
Pintail									25,550	
Green-winged teal									8,750	
Blue-winged teal									22,050	
Cinnamon teal										
Shoveler									5,775	
Wood										
Redhead									29,750	
Ring-necked										
Canvasback										
Scaup		20							140	
Goldeneye										
Bufflehead										
Ruddy										
Other Total Ducks		40							227,430	
Coot:		20							43,540	

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production	SUMMARY
Swans	0	0		Principal feeding areas
Geese	1,113	61		
Ducks	227,430	5,950		Principal nesting areas
Coots	13,510	1,500		
				Reported by <u>Bob L. 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 Lake Mason - Talbot Charles M. Russell National Wildlife Range MONTHS OF September TO December, 1967

(1) Species	(2) Weeks of reporting period									
	9/1-2 1	9/3-9 2	9/10-16 3	9/17-23 4	9/24-30 5	10/1-7 6	10/8-14 7	10/15-21 8	10/22-28 9	10/29-11/4 10
Swans:										
Whistling								Frozen		
Trumpeter										
Geese:										
Canada	52	75	100	150	170	200	100			
Cackling										
Brant										
White-fronted										
Snow					8					
Blue										
Other										
Ducks:										
Mallard	2,000	2,100	2,125	2,200	2,000	1,700	1,500			
Black										
Gadwall	2,000	2,100	1,750	2,700	3,000	3,500	4,400			
Baldpate	1,500	3,000	3,750	5,000	6,500	5,000	4,000			
Pintail	2,000	2,000	2,125	1,500	1,000	500				
Green-winged teal	1,000	1,000	1,000	1,000	1,500		600			
Blue-winged teal	200		125				600			
Cinnamon teal										
Shoveler	500	500	625	800	750	800	1,000			
Wood										
Redhead	250	500	1,000	1,200	1,250	1,500	500			
Ring-necked										
Canvasback	100	200								
Scaup										
Goldeneye										
Bufflehead										
Ruddy										
Other Total Ducks	9,550	11,400	12,500	14,400	16,000	13,000	12,600			
Coot:	800	2,500	4,000	4,500	4,000	3,000	3,000			

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 Cont. NR-1
 (Rev. March 1953)

WATERFOWL
 (Continuation Sheet)

REFUGE Lake Mason - Talbot Charles M. Russell National Wildlife Refuge MONTHS OF September TO December, 1967

(1) Species	(2) Weeks of reporting period										(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen : total	
	11/5-11	11/12-18	11/19-25	11/26-12/2	12/3-9	12/10-16	12/17-23	12/24-31					
Swans:													
Whistling	Frozen												
Trumpeter													
Geese:													
Canada											5,929		
Cackling													
Brant													
White-fronted													
Snow											56		
Blue													
Other													
Ducks:													
Mallard											95,375		
Black													
Gadwall											136,150		
Baldpate											201,250		
Pintail											63,875		
Green-winged teal											12,700		
Blue-winged teal											6,475		
Cinnamon teal													
Shoveler											34,825		
Wood													
Redhead											13,400		
Ring-necked													
Canvasback											2,100		
Scaup			60								120		
Goldeneye			10								70		
Bufflehead													
Ruddy													
Total Ducks			70								626,610		
Coot:			30								152,810		

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production	SUMMARY
Swans	0	0		Principal feeding areas
Geese	5,985	200		
Ducks	626,640	1,600		Principal nesting areas
Coots	152,810	1,500		
				Reported by <u>Bob L. 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).

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Cont. NR-1
(Rev. March 1953)WATERFOWL
(Continuation Sheet)REFUGE Miller Lake Charles M. Russell National Wildlife RangeMONTHS OF September TO December, 1967

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen : total
	11/5-11	11/12-18	11/19-25	11/26-12/2	12/3-9	12/10-16	12/17-23	12/24-31		
Swans:										
Whistling	Frozen	Frozen								
Trumpeter										
Geese:										
Canada									189	
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard									959	
Black										
Gadwall									35	
Baldpate									315	
Pintail									140	
Green-winged teal									770	
Blue-winged teal									1,120	
Cinnamon teal										
Shoveler										
Wood										
Redhead										
Ring-necked										
Canvasback										
Scaup										
Goldeneye										
Bufflehead										
Ruddy										
Other										
Total Ducks									3,339	
Coot:										

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production	SUMMARY
Swans	0	0		Principal feeding areas
Geese	189	15		
Ducks	3,339	135		Principal nesting areas
Coots	0	0		
				Reported by <u>Bob L. 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).

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Form NR-1
(Rev. March 1953)

W A T E R F O W L

REFUGE Warhorse Charles M. Russell National Wildlife Range

MONTHS OF September TO December, 1967

(1) Species	(2) Weeks of reporting period									
	9/1-2 1	9/3-9 2	9/10-16 3	9/17-23 4	9/24-30 5	10/1-7 6	10/8-14 7	10/15-21 8	10/22-28 9	10/29-11/4 10
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada	50	45	37	90	80	90	35	255	300	325
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	1,500	1,000	270	500	1,000	1,000	1,000	1,000	1,500	1,500
Black										
Gadwall	2,000	1,900	1,800	2,500	4,000	5,000	5,000	5,000	6,000	6,000
Baldpate	1,000	2,000	3,600	4,000	5,000	5,000	6,000	6,000	7,500	7,500
Pintail	1,500	500	180	300	500	300	200	100	700	700
Green-winged teal	2,400	1,000			500	600	500			
Blue-winged teal	200				100					
Cinnamon teal										
Shoveler	500	500	450	300	200	300	300	400		
Wood										
Redhead	500	1,000	2,700	3,000	3,000	2,500	2,000	1,000	500	500
Ring-necked										
Canvasback	200	200								
Scaup									500	550
Goldeneye									500	450
Bufflehead									500	400
Ruddy									100	100
Other Total Ducks	9,800	8,100	9,000	10,600	14,300	14,700	15,000	13,500	17,800	17,700
Coot:	4,000	5,500	8,000	8,000	7,000	6,000	5,000	4,500	2,500	2,000

3 -175
 Cont. NR-1
 (Rev. March 1953)

WATERFOWL
 (Continuation Sheet)

REFUGE Warhorse Charles M. Russell National Wildlife Range MONTHS OF September TO December, 1967

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen : total
	11/5-11	11/12-18	11/19-25	11/26-12/2	12/3-9	12/10-16	12/17-23	12/24-31		
Swans:										
Whistling	9/10 Frozen	Frozen								
Trumpeter										
Geese:										
Canada	300	275							13,174	
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	750	300							79,240	
Black										
Gadwall	3,000	1,200							303,800	
Baldpate	2,250	900							355,250	
Pintail	750								40,110	
Green-winged teal									35,000	
Blue-winged teal									2,100	
Cinnamon teal										
Shoveler									20,650	
Wood										
Redhead	375								119,525	
Ring-necked										
Canvasback									2,800	
Scaup	50	450							10,850	
Goldeneye	375								9,275	
Bufflehead		100							7,000	
Ruddy									1,400	
Other mergansers		75							525	
Total Ducks	7,550	3,025							987,525	
Coot:	1,000	500							378,000	

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production	SUMMARY
Swans	0	0		Principal feeding areas
Geese	13,174	325		
Ducks	987,525	17,800		Principal nesting areas
Coots	378,000	8,000		
				Reported by <u>Bob L. 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 Yellow Water Charles M. Russell National Wildlife Range MONTHS OF September TO December, 1967

(1) Species	(2) Weeks of reporting period									
	9/1-2 1	9/3-9 2	9/10-16 3	9/17-23 4	9/24-30 5	10/1-7 6	10/8-14 7	10/15-21 8	10/22-28 9	10/29-11/4 10
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada	30	45				10	2	25	75	100
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	450	250	150	100	100	100	100	150	150	150
Black										
Gadwall	200	100	50				50	150		
Baldpate	150	150	150				30	80		
Pintail	250	100	100	100	100			50	100	100
Green-winged teal	150			50	25	150	100			
Blue-winged teal	100	200	150		25					
Cinnamon teal										
Shoveler				100	50					
Wood										
Redhead	150								100	150
Ring-necked										
Canvasback									25	25
Scaup									50	60
Goldeneye									50	75
Bufflehead										
Ruddy										
Other Total Ducks	1,450	800	600	350	300	250	280	430	475	560
Coot:	400	350	600	450	200	200	200	250	300	100

3-1756

Cont. NR-1
(Rev. March 1953)WATERFOWL
(Continuation Sheet)REFUGE Yellow Water Charles M. Russell National Wildlife Range MONTHS OF September TO December, 1967

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen : total
	11/5-11	11/12-18	11/19-25	11/26-12/2	12/3-9	12/10-16	12/17-23	12/24-31		
Swans:										
Whistling	3/4 Frozen	Frozen								
Trumpeter										
Geese:										
Canada	100	25							2,884	
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	160	100							13,720	
Black										
Gadwall									3,850	
Baldpate									3,920	
Pintail	40	20							6,720	
Green-winged teal									3,325	
Blue-winged teal									3,325	
Cinnamon teal										
Shoveler									1,050	
Wood										
Redhead									2,800	
Ring-necked										
Canvasback	20								490	
Scaup									770	
Goldeneye	60	60							1,715	
Bufflehead		20							140	
Ruddy										
Other Mergansers	20	100							840	
Total Ducks	300	300								
Coot:	100	50							22,400	

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production	SUMMARY
Swans	0	0		Principal feeding areas
Geese	2,881	100		
Ducks	12,665	1,450		Principal nesting areas
Coots	22,400	600		
				Reported by <u>Bob L. 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.
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- (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).