

BRANCH OF WILDLIFE REFUGES NARRATIVE REPORTS

MR. SALTER

MISS BAUM

MR. CRAWFORD

Operations

MR. RECAN

MR. DuMONT

Land Management

~~MR. ACKERHAGEN~~

DR. MORLEY

Habitat Improvement

MR. BANKO

MR. STILES

MR. KUBICHEK

Stenographers

REFUGE CRESCENT LAKE AND NORTH PLATTE

PERIOD Jan - Apr 1959

CRESCENT LAKE NATIONAL WILDLIFE REFUGE

NARRATIVE REPORT

January 1 to April 30, 1959

PERSONNEL

Richard S. Rodgers Refuge Manager
Christ R. Schuler, Jr. Maintenceman
Fred R. Rusch, Jr. Refuge Clerk

TABLE OF CONTENTS

	Page
I. GENERAL	
A. Weather Conditions	3
B. Habitat Conditions	4
II. WILDLIFE	
A. Migratory Birds	4
B. Upland Game Birds	8
C. Big Game Animals	9
D. Fur Animals, Predators, Rodents, and Other Mammals	11
E. Hawks, Eagles, Owls, Crows, Ravens, and Magpies	13
F. Other Birds	15
G. Fish	16
H. Reptiles	16
I. Disease	16
III. REFUGE DEVELOPMENT AND MAINTENANCE	
A. Physical Development	16
B. Plantings	18
C. Collections and Receipts	18
D. Control of Vegetation	18
E. Planned Burning	18
F. Fires	18
IV. RESOURCE MANAGEMENT	
A. Grazing	18
B. Haying	20
C. Fur Harvest	20
D. Timber Removal	20
E. Commercial Fishing	20
F. Other Uses	20
V. FIELD INVESTIGATIONS OR APPLIED RESEARCH	
A. Captive Goose Flock	20
B. Grouse Studies	26
C. Experimental Plantings	27
D. Trash Fish Eradication	28
E. Blackbird Control	29
F. Lake Sediment Samples	30
VI. PUBLIC RELATIONS	
A. Recreational Uses	30
B. Refuge Visitors	30
C. Refuge Participation	30
D. Hunting	31
E. Fishing	31
F. Violations	31
VII. OTHER ITEMS	
A. Photographs	31
B. Surplus Material	31
C. Accidents	32
D. Acknowledgement	33
APPENDIX	
I. List of Refuge Visitors	
NR Forms	
Photographs	

I. GENERAL

- A. Weather Conditions: January was a typical winter month with both cold and warm days experienced. Examples of these extremes occurred during the first seven days of the month. On the first the high temperature was 50 degrees, on the third the high was zero, and then again on the sixth the high was 57 degrees. The lows during these few days were from 22 degrees on the first to -24 degrees on the third and the low on the seventh was 24 degrees. High temperatures of 50 degrees plus were recorded on eleven days and lows of below zero were experienced on seven days.

February was a continuation of the fluctuation of temperatures as warm days were preceded and followed by periods of cold. However, temperatures of over 50 degrees were recorded on only four days and only two below zero temperatures were noted. The first blizzard of the year was experienced on the 22nd when strong winds drifted four inches of snow.

March was considerably milder with only one high temperature of less than 32 degrees being recorded and the low temperatures ranged from 11 to 32 degrees. Blizzard conditions were experienced twice during this month. The first of these was comparatively mild because of the "warm" 45 degree temperature. The snow (five inches were received) was very heavy and the drifting was not too severe. The worst storm of the season was experienced on the 25th when ten inches of snow were received with very strong winds. Visibility was reduced to zero and all roads and trails were hopelessly drifted shut. All travel was limited to four wheel drive vehicles and mail delivery was not possible until the 28th.

Spring arrived for a short time during the first few days of April when high temperatures reached the high 70's and 80's. This nice weather was short lived, however, as on the 9th snow and cooler temperatures were again experienced. The final snow of the season was received on the 19th when two inches were recorded. The high temperature at this time was 36 degrees. After that date, we experienced generally fair days with mild temperatures and a few evening showers.

A synopsis of the recorded precipitation and temperatures during this period is as follows:

	<u>Snowfall</u>	<u>Precipitation</u>		<u>Max.</u>	<u>Min.</u>
		<u>This Month</u>	<u>Normal</u>	<u>Temp.</u>	<u>Temp.</u>
January	3.65	.19	.60	61	-24

	<u>Snowfall</u>	<u>Precipitation</u>			<u>Max. Temp.</u>	<u>Min. Temp.</u>
		<u>This Month</u>	<u>Normal</u>			
February	10.75	.47	.52		53	-13
March	23.50	2.23	.95		66	11
April	5.50	.68	2.02		85	11
Total	43.40	3.57	4.09	Extreme	85	-24

The above information was obtained from the official Weather Bureau Substation maintained at refuge headquarters.

B. Habitat Conditions.

1. Water. As can be seen by the table immediately above, less than normal precipitation was received during this period. In spite of this, our lakes and lowland puddles seemed to hold up very well and until approximately three weeks before the end of the period, the water levels were actually higher than those present a year ago.

If we receive anything like normal precipitation during the remainder of the spring, we should have adequate water levels for all of the wildlife species concerned.

With the hope that we will be able to proceed with some of the proposed development work in the lower end of the Smith-Martin Valley this year, we held water levels as high as possible in both Smith and Martin Lakes this spring. As mentioned elsewhere, the dike on Smith Lake was repaired and raised to proper grade.

2. Food and Cover. Although we had some cold weather during the winter, we did not have any long periods when snow completely covered the ground. Because of this, adequate food was available for all species of wildlife that remained on the refuge and abundant cover was present in most of the uplands as well as around the lakes. Those few lakes that contained aquatic food were heavily used by the early arriving ducks and our only wish is that we had more such areas to offer.

II. WILDLIFE

A. Migratory Birds.

1. Ducks and Geese. Most of our lakes remained frozen this year from shortly after Thanksgiving until mid-March. This is rather unusual because on this area it is normal to

experience periodic warm spells during the winter. At such times open areas usually appear.

The flying offspring of our captive goose flock, which we now consider wild birds because they are free to come and go when they please, started their exploratory flights on January 30. They did a great deal of checking both on the refuge and in the immediate vicinity. On February 15 the first group of approximately 45 migrant Canadas was observed over Gimlet Lake. In the weeks that followed, other flocks were seen occasionally. Most of these birds were probably from the North Platte River some thirty miles to the south of the refuge. The movement of migrant Canadas continued until mid-April. During this time the only birds that spent an appreciable amount of time on the refuge were those that were feeding on the rye on the north side of Roundup Lake. This small flock varied in size from 30 to 60 birds and they were probably a portion of the flock that regularly feeds near this lake during migration.

The first two groups of snow geese, one of 45 individuals and another of approximately 35, were noted over the refuge on March 13. These birds were going south, apparently toward Crescent Lake. During the next few weeks, numerous flocks of snows were noted passing over but as far as we could determine the only birds that spent any time on the refuge itself were in a small group that varied from 12 to 24 birds. These were seen on Island and Crane Lakes during the last two weeks of April.

We had no reports of any white-fronts being seen on or near the refuge this spring.

On January 6 two mallards were noted over Gimlet Lake but at this time all of our water areas, with the exception of the outlet of the flowing well, were completely frozen. The next pair of mallards was noted on March 10; by this time a few lake edges were starting to show a little open water. On this same day, a group of ten gadwall was observed, also over Gimlet Lake. The first group of 25 migrant pintails was noted on March 12. As the weeks advanced and more water areas became open, additional species made their appearance and birds already represented increased in numbers (See NR-1).

The first common mergansers, a group of about 35, were noted on Island Lake on March 3 and for several weeks following, these birds were common on those lakes that had a food supply. As the period ends, a pair of common mergansers is still present on Island Lake. These birds normally

move on at an earlier date. A single hooded merganser was observed April 8 on Blue Lake.

The migrational buildup this spring followed a reasonably normal pattern with mergansers, pintails, and mallards as well as redheads, canvasbacks, and goldeneyes arriving early followed shortly by green-wings, scaup, and bufflehead, and still later by gadwall, shovellers, and blue-wing teal. A relatively good flight of redheads was experienced this spring with a total of approximately 3200 birds being present during the first few days of April. Canvasback were noticeably less abundant while scaup were not present in large numbers but they remained for a considerable length of time. Ring-necks were present in moderate numbers, they are seldom abundant on this area.

This refuge is actually only a slice of typical sand-hill terrane surrounded by a huge area of very similar territory. There is little if anything to make refuge lakes more attractive than those that surround us and during spring migration when there is no disturbance on these outlying areas, our concentrations on a bird per water acre basis are probably almost identical to those in the surrounding hills. This explains why our use on an area this large is not as great as might be expected. During periods of low water, our larger lakes would probably show a greater density than during normal or near normal years such as this appears to be.

Overall, migration this spring seemed to have been near that which could be expected with perhaps a slight decrease in some of the puddlers as well as canvasback.

2. Waterbirds. On April 8 the first double-crested cormorant, a single bird, was seen on the island in Goose Lake. In subsequent weeks, a few additional birds arrived and they were seen quite often on Gimlet Lake which is now one of the few areas that contain fish. These birds have lost their food supply in Island Lake and because of this, the rookery on the north side of this body of water is now nearly deserted.

The first white pelicans, a group of 75, were seen in the air over Upper Harrison Lake on April 7. These birds follow a usual pattern of moving about a great deal and up until the end of the report period, they had been seen on most of the lakes that had any food supply. As the period closes, they have moved out of the immediate refuge vicinity and only an occasional bird is reported.

As the period ends, black-crowned night herons still remain one of our unreported species.

As with the small heron immediately above, we have no record of American bittern being sighted before the close of the report period.

The first great blue heron reported this spring was sighted over Gimlet Lake on March 27. Additional birds arrived during the next few weeks but the curtailment of the food supply (because of the trash fish eradication) also affected this species. Formerly, these birds occupied a rookery with cormorants in the dead willows on the north side of Island Lake. This year, because there are no fish left in this lake, a very few birds are nesting. Because the herons can do quite well on frogs and other types of animal life without relying solely on fish, a few of them will probably remain on the area.

The first small group of pied-billed grebe, 3 birds, was observed on Smith Lake on April 8. On April 23, 7 western grebe were seen on Roundup Lake and on April 24 eared grebe arrived in force and were seen on Gimlet, Hackberry, Blue, and Goose Lakes.

Total numbers of all three species increased gradually as the period progressed and as the period ends, eared grebe are still building up each week. Western grebe are never too common but the numbers that have been observed on Roundup Lake (their favorite haunt) seem to be very much the same as in previous years. The courtship "dance" of these birds has been observed on numerous occasions this spring. The inconspicuous pied-bill has been reported on almost all of our lakes but there are never a large number of individuals present.

The first group of 8 migrating sandhill cranes was noted on April 7. Later in the same day, another group of approximately 30 of these birds was noted passing toward the north over headquarters. We did not see any large flocks of these birds this spring so it is probable that most of them passed somewhat to the east of us.

Although no sight records appear on our field reports, we have heard rails on several occasions so we are sure that they are with us as the period ends.

3. Shorebirds. The killdeer led off the shorebird parade as usual this year with the first two birds being seen on March 23. These two birds were noted in the headquarters

area. On March 24, a single Baird's sandpiper was observed on the south edge of Roundup Lake. Avocets put in their appearance on April 14 and on April 2 a pair of long-billed curlew were noted in the meadow on the south side of Unit # 6a. The first dowitcher, a single bird, was noted on Martin Lake on April 8.

The shorebird migration appears to be following a normal pattern and there are still a number of species that have yet to put in their appearance. The small water holes held up quite well this spring and these served as excellent resting and feeding areas for these birds as they passed through.

Three ring-billed gulls were noted passing over the headquarters area on March 10 and 30 Franklin's gulls were noted on April 24. Gulls follow the same pattern as pelicans on this particular area and we usually have no resident flocks. They come and go with extreme irregularity.

The first common tern was reported on April 22 and on April 23 two black terns were listed. If these birds continue to follow a normal pattern, their numbers will increase steadily during the fore part of the coming period.

4. Doves. The first mourning dove was recorded on April 14 and during the last two weeks of the report period, the number of these birds present on the refuge increased steadily. It is our impression that these birds are more numerous than they were a year ago.

B. Upland Game Birds.

1. Grouse. As reported in Section V of this report, our checks this spring indicate that sharp-tailed grouse have made an increase of approximately 62% while pinnated grouse have decreased by approximately 29%. In the case of the pinnated grouse, we are dealing with such small numbers that it is becoming a very critical situation indeed. Last year we found 17 pinnated males and this year we found only 12.

Not a single pinnate was recorded as being observed during the winter months while sharp-tails were at a time actually numerous. Following their normal habits, as soon as a snow cover was received, sharp-tails immediately began to appear in what few trees are present on the refuge. This also happened in the tree groves near the buildings of the surrounding ranches. These birds bud in the trees until the snow cover began to thin out and then they disappear. Efforts to entice these grouse to the ground in

the headquarters area by use of grain proved futile this year as it has in the past. These birds simply do not know what grain is.

The flock that for several years has stayed in the trees and yard of the Dietlein Ranch just north of the refuge during the winter has become accustomed to eating milo and this year the birds were back with most of their offspring. This particular group of birds has become extremely tame and the ranch people can walk among them almost as though they were a flock of chickens. Paul Dietlein guards this flock very jealously and he cheerfully buys grain to feed to them during the periods of bad weather.

As an interesting note, a single male sharp-tail was noted displaying and going through all of the dancing ground antics in the yard of the Dietlein Ranch on January 21. This bird was really rushing the season for he was at least two months ahead of the time when such activity normally gets under way.

2. Pheasants. Although we apparently came through the winter with a very ample brood stock, it is apparent that a number of pheasants were lost during the winter months. Because the weather was not unduly severe, most of this loss was probably caused by predators. Horned owls, of which we still have too many, took a good number of birds in the immediate headquarters area as evidenced by the feathers and picked bones that were located and on at least two occasions, eagles were noted feeding on pheasants. In spite of these losses, the birds are still common on all of those areas on the refuge where suitable food and cover exist and with any kind of luck, we should have a very adequate hatch this year.
3. Bobwhite Quail. No Bobwhites have been reported as being seen or heard during this period but there is a good chance that at least a few of these small birds are still with us.

C. Big Game Animals.

1. Rocky Mountain Mule Deer. The deer in the immediate headquarters vicinity remain numerous and they have developed into a considerable nuisance.

The headquarters lawn was one of the first areas to become green this spring and the deer immediately moved in and made themselves at home. In addition to the grass, these animals ate everything else that they could reach and considerable damage was done to two shrubs immediately

adjacent to Quarters # 1. Our past experiences taught us to protect all other shrubs and bushes but because of the closeness of the damaged shrubs to the house, we thought that screening would not be necessary. As the period advanced, the deer proceeded to eat up flowers and everything else that poked through the ground. As the period ends, the animals still pay us their nightly visits but there is enough other green material available so that they do not concentrate quite so heavily in the immediate headquarters area.

We see deer regularly throughout the refuge where suitable habitat is available. We have come to expect to see these animals near our few tree groves and we are seldom disappointed. Their tameness and habit of moving in quite sizeable bunches makes them an attraction for the few visitors that we receive.

During this period we again contacted the Area Office of the State Game Commission regarding a proposed joint deer marking operation. This project has been approved for several years but the State has had numerous equipment procurement delays and nothing productive has been accomplished. We received word that although the State people will be unable to perform the work themselves, we may borrow their equipment if we choose and catch and mark some animals by using the air gun-propelled-syringe method. We are anxious to mark a few of these deer and determine just what the extent of the off-refuge drift is so that we will have some idea of how to proceed with future management.

2. White-tailed Deer. We apparently still have the one white-tailed doe and fawn that were seen several times last year. This pair has been reported on several occasions this spring but we have seen no bucks. The doe and fawn regularly run with mule deer and it will be interesting to watch and see if the doe produces another fawn this year.
3. Antelope. On January 24, a group of 34 antelope was noted approximately one mile south of our south boundary in the area just east of Crescent Lake. These animals hung in this vicinity during the entire winter and this is rather unusual. Normally these pronghorns spend the winter on the wheat lands some twenty miles to the south and then move to this general vicinity for the summer.

Usually a few individuals can be found at almost any time of the year on Units # 16 and 16b on the eastern end of the refuge. This year, sightings in this vicinity were

rare. State personnel have told us that antelope populations are down throughout the Panhandle.

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

1. Muskrats. We made no specific counts during the winter but general observations indicate that rat houses were much more numerous this year and we are sure that evidence of feeding and the actual sightings of the animals are much more common.

There are a number of places where the activities of these rodents would be a great aid in our marsh management. On the north end of Goose Lake the emergents are becoming so thick that the use of the area by waterfowl is decreasing; some muskrat caused openings would be very welcome. Somewhat the same situation exists on the north end of Smith Lake and we would welcome their activities there also. We plan to closely watch the situation and recommend a harvest if their numbers appear to become too numerous.

2. Mink. A few mink are still present on the refuge as evidenced by the signs that were seen on the ice during the winter. Tracks and evidence of muskrat house disturbances were commonly observed during our nesting island construction work.
3. Coyotes. There has been a very definite increase in the number of coyotes present on the refuge during the last year and they are now becoming actually numerous. Tracks were seen near the outside of our goose wintering pens on several occasions and numerous places where they had attempted to dig under the large goose enclosure fence were discovered. A number of "coyote getters" were placed along our south goose enclosure fence during the course of the winter and three of these were fired. One coyote carcass was found and there is a very good chance that the other two sets were also successful. While making checks of the grouse study area this spring, we became aware of just how thoroughly these animals can work a small area. Several of these grouse study areas are only 40 acres in size and because they have been ungrazed for several years, they now have a very abundant growth of vegetation. This kind of growth makes excellent mouse habitat and, therefore, attracts coyotes. Several of these areas looked like they have been harrowed in some sections. If the number of diggings are any indication of the number of mice removed, the coyotes must have lived very well indeed.

When possible, we attempt to control coyotes but such

efforts have little affect on the population. The people that surround us will undoubtedly again ask for a control program such as they have had in the past under the auspices of our Predator and Rodent Control Division and this should handle the situation.

4. Raccoons. We were again lucky during this report period for we experienced no known raccoon caused losses in our goose flock. Although the animals did not get into the wintering pens themselves, their tracks were seen commonly near the pens after the weather started to moderate in the latter part of the period.

Following the checks of our lakes by Fisheries Management Services personnel in early April, we used the one carp and four bullheads that were obtained in the gill nets as bait and made a set near our proposed picnic area on the north side of Gimlet Lake. On April 21, a single raccoon was removed from one of the traps that surrounded this set. We have proven repeatedly, at least to our satisfaction, that trapping is not an effective way to control these animals. We have, however, been forbidden to use poison so we have little other choice. We plan to again submit a request that we be permitted to use treated eggs and perhaps it will be approved this time.

The only goose nest that was located other than on an island or a platform this spring was placed on a mound in the meadow immediately adjacent to our wintering pens. This nest was broken up before all of the eggs were even laid and judging by the evidence, it was probably a raccoon that did the job.

As the period ends, it is very common to see the tracks of these animals around the shorelines of all of our lakes and the animals themselves are seen occasionally, usually at night.

5. Badger. Badgers remain uncommon on the area and the signs of their activities are observed much more often than the animals themselves. One animal has been seen several times in the area just north of Island Lake and southeast of Roundup Lake. Judging by the number of pocket gopher mounds that appear in our uplands, these animals should have an abundance of food although they undoubtedly supplement this diet with eggs and young birds if they happen to come across these items.
6. Skunks. There seems to be little change in the population levels of either the spotted or striped skunks that inhabitat

the area. Sightings are, of course, almost exclusively at night but tracks and signs of their digging activities can be seen in all of our areas of heavier cover.

During the period, one spotted skunk and one striped skunk were removed from the fish set on the north side of Gimlet Lake. We make no special effort to trap these animals but they very often are attracted by the same type of bait that appeals to raccoons.

7. Rodents. The activities of pocket gophers seem to be somewhat less than they were during a comparable period a year ago but even if a reduction is a fact, we still have an over abundance of these animals. If someone wishes to try out a cheap but effective way to control these rodents, we most certainly have an extensive area that we would be happy to furnish for study purposes.

The sightings of kangaroo rats at night appear to be less than they were a year ago. The animals are still seen but the frequency has definitely lessened.

On those areas where heavy cover exists, especially in the lowland grouse habitat areas, the activities of various species of mice are much in evidence. These small rodents probably find these conditions to be exactly what they need and their presence in turn attracts a considerable number of coyotes, as mentioned elsewhere.

8. Rabbits. Jack rabbits, both white and black-tailed, are also on an apparent downward trend. Even at night they are not nearly as common as they were a year ago and especially two years ago.

Cottontails appear to be holding their own very well except in the immediate headquarters area where it became necessary to initiate a limited control program. Several junk piles where the rabbits could stay were cleaned up and burned and those individuals that were causing most of our shrub damage were eliminated. There is still an adequate population of these little animals in all areas of suitable cover on the refuge so our efforts in the headquarters vicinity will have very little affect on the population as a whole. The situation boils down to the fact that it is easy to raise cottontails but very difficult to raise any shrubs on this particular area and it was decided that, at least near headquarters, the shrubs should get the break.

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

1. Hawks. As usual, a few hawks stayed with us throughout the winter. On January 21, a prairie falcon was noted harassing the sharp-tails in the headquarters area. These falcons are not particularly common on this area, especially during the winter months. Contrary to what might be imagined, marsh hawks stay with us throughout the winter. These birds were actually our most common hawk. Rough-legged hawks were also seen off and on throughout the period but they were not as common as the species immediately above. The first sparrow hawk of the season was reported on April 22.

Late in the period, several sightings of some hawk that proved impossible to identify were reported. This bird was probably an oddly marked Swainson's hawk but it most nearly resembled a white-tailed hawk. The only trouble is that white-tailed hawks are not supposed to be this far north. Our observations were of a bird on the wing and we have as yet had no opportunity for a closer look.

2. Eagles. Following a normal pattern, golden eagles moved into the sandhills during the winter months and they were commonly observed throughout the period. These birds were seen several times feeding on pheasants and because of the scarcity of jackrabbits, upland game birds probably formed a good portion of their diet this winter.

A single bald eagle was noted on the ice of Island Lake on February 28. These birds are never as common as the golden eagles in this vicinity but we usually have at least one pair that spends part of the winter on the refuge.

3. Owls. Great horned owls are year long residents on this refuge and they, like the eagles, probably make upland game birds a significant item in their diet. The pair of owls that has remained in the headquarters area was broken up when one of the birds was removed on March 10. We felt that the presence of these birds in the immediate vicinity where we hope to have young geese was not consistent with our hopes for good survival on these young birds. Also, because cottontails have been drastically reduced around headquarters, the owls would be forced to turn to some other source of food. As the period ends, each grove of trees on the refuge seems to have at least one pair of these night workers in residence.

Late in the period, several short-eared owls were flushed while we were checking the grouse habitat plots. The heavy growth in these areas attracts numerous mice which in turn attract the owls.

On April 16, the first three burrowing owls of the season were noted in the west Christ meadow. These birds were all sitting near freshly dug holes which were apparently the work of a mouse or gopher hunting badger.

4. Crows. We are thankful that crows do not find conditions much to their liking on this particular area and they, therefore, are not year around residents. Their movements are very erratic and sightings are actually rather uncommon. On March 3, a single crow was noted in the headquarters area and on March 10, another single individual was observed. On March 24, five crows were seen in the headquarters area and on March 31, a single individual was noted in the trees on the north side of Island Lake. This follows a normal pattern and as the period ends, it is doubtful that any of these birds remain in residence.
 5. Magpies. As with the species immediately above; these birds move on and off the refuge with great irregularity although they are probably more common than the crows. Magpies were seen in the headquarters area throughout the entire period but there were usually no more than three or four birds present at any one time. They usually moved on after staying only a few days.
 6. Vultures. We have no records of any vultures being seen during this report period.
- F. Other Birds. The following are miscellaneous records that were taken from our field notes and which cover some of the lesser birds:

<u>DATE</u>	<u>SPECIES</u>
January 29	Downy Woodpecker
January 29	Hairy Woodpecker
January 29	Tree Sparrows
January 29	Northern Shrike
March 10	Robin
March 23	Red-shafted Flicker
April 7	Olive-backed Kingbird
April 19	Purple Martin
April 22	Brown Creeper
April 24	Myrtle Warbler
April 24	White-crowned Sparrow

As the period ends, the migration of smaller birds is only beginning to get under way and it is expected that they will become much more numerous during the coming month.

- G. Fish. The checks made by personnel of Fisheries Management Services and the results obtained are mentioned in Section V of this report.

As far as we know, the only game fish that now exist on the refuge are the bullheads (these fish are considered to be game fish in this locality) that are found within our goose enclosure in Gimlet Lake. For obvious reasons, we cannot allow fishing within this enclosure and it can therefore be said that no public fishing opportunities now exist within refuge boundaries.

As mentioned in Section V, present plans are that Island Lake will be restocked with a bass-bluegill mixture in late summer of this year. It is anticipated that a population of legal sized fish will be present by 1961. When this happens, the rush by the general public will begin.

- H. Reptiles. The cool weather that we have experienced up until the end of the report period has kept the activities of the species in this category to a minimum. Warmer days should bring reports of bull snakes and garter snakes as well as turtles.
- I. Disease. We have seen no evidence of any disease outbreak of any significant magnitude within our wildlife populations during this report period.

As mentioned elsewhere, two goose carcasses were located within the large summer pen but we feel that these were predator kills and not disease losses.

We were fortunate in not loosing any birds to fungus infections in the wintering pens this year. We feel that the varied diet that has been provided for the birds has contributed to their general good health.

III. REFUGE DEVELOPMENT AND MAINTENANCE

A. Physical Development.

1. Early in this period, sufficient ice was present to permit work on the much needed nesting islands. The seven islands that were already present on Gimlet Lake were refilled and redressed. In addition to these, eight new islands of the wooden frame-sheet metal type were assembled and placed on the ice. Of these, four were placed on Roundup Lake and four on Gimlet Lake. Several methods were tried that we

hoped would enable us to completely fill the islands the first year. Because the structures are four feet high, it was impossible to dump the fill over the side into the island. Therefore, we left one end of the structure open and backed the truck in the open end for unloading. This method was soon abandoned because after several loads of dirt were unloaded, the ice settled to a point where it was unsafe to proceed. Next we tried to drop the island through the ice by blasting, hoping that the structure would settle through and, with any luck at all, the weather would remain cold enough to freeze sufficient ice on the opened areas to permit complete filling of the framework. This method was also abandoned when it became evident that a great quantity of dynamite would be required to open an area large enough to allow an island to settle completely through the ice.

It became evident that it will take at least two years to completely fill the islands. Therefore, the new structures were filled with hay held in place with several loads of dirt to hold the islands in place and to reduce ice and wave damage when they fell through the ice. This method also proved to be undesirable when our GMC dump truck broke through the ice (see Section VII).

We will continue to try different methods of completing this work in a single winter and are open for any constructive suggestions.

2. Twenty-four man-hours were devoted to repairing and raising a portion of the Smith Lake dike. Approximately 550 feet of the dike was raised about eighteen inches. After the work was completed, the grade was one foot above the wooden structure. Our D-4 and scraper were used to accomplish this work.
3. A carp barrier was constructed across the drainage ditch between Upper and Lower Harrison Lakes in the southwestern corner of the refuge. This barrier consists of a 550 foot dike which is five feet high at the ditch. The spillway, a temporary sandbag structure, is four feet high. This structure will give us a four foot drop at the spillway which should keep trash fish out of the Smith-Martin Valley. As the period ends, water has risen to within 18 inches of the top of the spillway.
4. A new electric gasoline pump and underground storage tank were purchased during this period. The cost of these items was \$264.20; \$182.00 for the pump and \$82.20 for the 560 gallon tank. We have long suspected that the old storage tank had a small leak because of the constant shortages

noted when our records were reconciled. As the period ends, the tank has been placed underground and the forms for the concrete pump base have been constructed. This work will be completed in the very near future and the pump will be placed in operation as soon as possible.

5. As an additional attempt to make the headquarters area more attractive, work was continued around Quarters # 3. A picket fence has been constructed and will be erected around this quarters as soon as weather permits. An underground irrigation system utilizing hydrants was also placed in this yard and another attempt to grow a blue grass lawn will be made this spring.
- B. Plantings. There were no plantings made during this period.
 - C. Collections and Receipts. None during this period.
 - D. Control of Vegetation. None this period.
 - E. Planned Burning. None this period.
 - F. Fires. No fires were experienced on the refuge during this period. However, a definite fire hazard exists because of the abundant dry vegetation remaining throughout the sandhills. As the period ends, we are experiencing dry weather and the lightning season is drawing near.

IV. RESOURCE MANAGEMENT

- A. Grazing. As mentioned in the previous report, we had hoped to finish the revision of the Land Use Plan that has been pending for several years during the winter. We seriously underestimated the amount of time that such a revision would take and as the period ends, a small amount still remains to be done on the first draft.

Because almost none of the boundaries of the pastures or subdivisions follow established section lines or the subdivisions of sections, it was necessary to planimeter each piece of ground that was enclosed by a fence. Large scale aerial photos were used for all of this work. On an area as large as this, this task becomes very time consuming indeed. The work has been completed, however, and we now, for the first time, have a reasonably good idea of just what the acreages in the individual pastures actually are. We found numerous instances in which our external boundary, which is suppose to run on section lines or subdivisions thereof, is not really

where it was thought to be. In some cases we lose some land and in others we gain. In the long run, the actual acreages probably very nearly balance out. This sort of arrangement is, however, not very good business procedure so sometime in the future steps should be taken to initiate some resurveys.

In order to get the use on our summer ranges where it belongs, it will be necessary to make some considerable changes in our grazing program and these have been enumerated in the new plan. Among other things, we will split our large summer ranges, some of which are now 5000 acres in size, into smaller, more manageable units that may be used on a rotational basis. If we are to comply with the provisions of the Refuge Manual, it will be necessary for us to furnish the materials for the necessary division fences as well as for any additional watering facilities that are made necessary. We also plan to make much greater use of salt as a means of achieving better distribution in some of the out-of-the-way places in the units.

One of the main reasons that our summer ranges have been overgrazed in the past was the policy of not considering calves in computing the total amount of use received. It is now generally agreed that calves from the time they are two months old until they are weaned eat an average of one-fourth as much as the adult animal. Starting in 1960, a charge will be made for such calves and they will be figured in the total amount of use on the pastures. The actual break down by various age classes will be .25 AUM for a calf from two to seven months old, .75 AUM for an animal from seven months to eighteen months old, and 1.00 AUM for any animal over 18 months of age. Because the same charge has been made in the past for cows and calves as for single animals, all of the summer permittees have run cows and calves. The proposed change is going to make a considerable difference in these operations and its initiation will not help our somewhat strained permittee relations. There is no doubt, however, that it is good range management and it must be done.

As the period ends, we have received a comparatively small amount of moisture and the uplands are much drier than is desirable. It is normal to receive a good deal of precipitation during May and June so we may still be able to realize good growth although it is doubtful if we match the excellent production of last year.

During this period, all of our winter permits terminated and, contrary to indications early in the season, a great deal of surplus hay was not carried over. In those cases where some extra forage was still available, the permittees were instructed to save it and feed it first next year.

- B. Haying. As mentioned immediately above, haying is considered part of our grazing program and no separate records are maintained.
- C. Fur Harvest. No fur harvest has been permitted on this area for a number of years but as mentioned elsewhere, there is a definite upswing in our muskrat population and it may be desirable to initiate a harvest within the next few years.
- D. Timber Removal. There is no timber on this refuge.
- E. Commercial Fishing. No commercial fishing takes place on this refuge.
- F. Other Uses. A single permit issued to the grazing permittees who utilize Unit # 19 during the winter covers the use of Quarters # 6, commonly called the Jones Place. This area near the eastern end of the refuge serves as shelter for the permittees during their winter feeding and spring calving operations.

During the period we received additional inquiries from the local Soil Conservation District regarding the possibility of harvesting native grass seed on various refuge areas. We wrote back to the District suggesting a share division but to date we have had no reply. We hope that something can be worked out because we have some S & M projects for which we will need such seed and obtaining it on a share basis would be far cheaper than buying it at current market prices.

V. FIELD INVESTIGATIONS OR APPLIED RESEARCH

A. Captive Goose Flock.

- 1. Pinioned Birds. The flock of pinioned birds that we still maintain at this station came through the winter in apparent excellent condition. We had few periods of severe weather that were serious enough to adversely affect these hardy birds and we were very fortunate in that raccoons did not kill a single bird during this report period.

Mixed grain, which included milo, wheat, corn, and numerous other small grains in small amounts, was available to the flock in the large self-feeders at all times. The birds made constant use of the food supply and their intake, as would be expected, was in direct relation to the temperature and severity of the weather. For approximately two weeks prior to their release into the summer enclosure on

March 17, they were given baled alfalfa as a supplement to their regular grain diet. This green food was provided by breaking open bales and scattering the material so that it was readily available. The green, leafy parts of the plants were taken very readily and we feel that by providing this green food we were able to build up the condition of the birds somewhat.

As soon as most of the ice had left the lakes, these pinioned birds were allowed to move to the large summer nesting enclosure. To encourage return visits to the headquarters area so that recapture will be easier next fall, an additional gate was placed in the east side of the wintering pen. This gate was then left open and the birds were allowed to find the opening for themselves. This they did in a very short time but they quickly developed the habit of returning at least once a day to feed. As the period ends, those birds that are not nesting spend a great deal of time in the winter pen and especially on or near the small pond that provides their water at such times as they are confined in this small enclosure.

Working on some of the thickest ice that has been experienced on this area for a number of years, we were able to redress the nesting islands that were originally constructed on Gimlet Lake during the winter of 1956-1957. As much fill as possible was hauled to these structures and dumped on top of the cribbing that was still in place. In addition to this, we were also able to place eight additional islands of the 4" x 4" timber and aluminum roofing type. These latter structures, as explained in previous reports, are made from a framework of 4" x 4"'s to the inside of which we fasten 4' x 12' sheets of aluminum in such a way that a 12 foot by 4 foot box is formed. This framework is towed to the proper location on the ice and then filled part way with hay and finished off with dirt. These structures proved to be a disappointment because it was almost impossible to apply sufficient fill before they settled to such an extent that it was no longer possible to use machinery in the immediate vicinity. We attempted to take up part of the space by filling the forms as full as possible with hay and then using dirt only as a topping but once the structures settled through the ice, the hay and fill also settled to such an extent that a usable nesting island was no longer present. It now seems obvious that it will take at least two years of good ice to make all of the structures fit for use. The first year we will attempt to get enough fill in place so that the structure can settle through and stay in one place until the following winter when it can be redressed. Judging by the number of pairs that we had this

spring, we are certain that we could realize a significant increase in our nesting if we only had a few more nesting sites available.

In the future we will have to work out some different method of erecting these structures. On January 26, while hauling a second load of fill to the last island that was to be placed on Gimlet Lake, our GMC dump truck broke through the ice (see photo section). After considerable difficulty, we were able to rent a tractor, blast a path through the ice, and drag the unit out on the bank. The damage consisted of two bent fenders and a broken tie rod end. As soon as possible, the truck was pulled to our shop and completely serviced. No apparent damage was done to the engine and the unit is now serviceable again. We feel that we were fortunate to come out of this situation as well as we did but it emphasizes a fact that we must find a more practical way to build our very badly needed nesting islands.

As we went into the nesting season, we had the following nesting sites available in a usable condition: Islands # 1, # 2, # 3, # 4, # 5, # 6, and # 7; a platform off the end of the peninsula in Gimlet Lake; a platform in the Mallard Arm of Gimlet Lake; and a surveyed boat that had been sunk and filled with dirt in the outlet of the flowing well near headquarters.

On March 17, the pinioned birds and as many of their flying offspring as possible were driven into the completely enclosed catch pen in the wintering enclosure. All of the birds were caught, examined for physical condition, band condition (both leg bands and neck bands), and weighed. A total of 101 pinioned birds were checked. Of this total, 100 had entered the pen last fall and one bird had been added on February 27 when USGMA Morgan brought us a very small bird that had been confiscated in the Lewellen vicinity.

This is the first year that each bird had been weighed and we hope to continue this practice each spring and fall to determine if there is any significant weight change during the winter months. This information may give us some indication of the adequacy of our winter diet. Of the 101 birds, we found that the average weight was 8.15 pounds with extremes of 11.3 pounds and 4.7 pounds being recorded.

In addition to those birds that were pinioned, we were also able to capture a number of the flying offspring of

this flock. These birds had remained with their parents throughout the winter but as warmer weather arrived, they made frequent and prolonged flights to Gimlet Lake, which lies in the summer enclosure. We were able to capture both of the young birds that were raised in 1956; the average weight of these two was 9.70 pounds. Of the 23 young birds banded in 1957, we were able to capture six and we found their average weight to be 9.21 pounds. In 1958 we banded only 9 young birds and of these we captured five this spring. Their average weight was found to be 9.20 pounds.

In addition to the flying birds that were driven into the pen, a considerable number, perhaps almost all of the young that had been raised in the last three years, were present in the large enclosure. We are very gratified that these young birds apparently are content enough to stay in this general vicinity and we feel that very few, if any, of them have attached themselves to migrating flocks.

Although most of our fliers are only one or two years old, they seem to be pairing and setting up territories in fine shape. On March 19, before the pinioned flock was turned loose, a check was made of all the nesting islands with the following result:

1. Pair of flying birds observed on Island "B" (boat).
2. Pair observed on platform off peninsula in Gimlet Lake, flying birds.
3. Pair observed on Island # 3, flying birds.
4. Pair on Island # 4, flying birds, 1 bird noted building nest.
5. Pair of birds on Island # 5, flying birds.
6. Pair noted on shore near Island # 5, flying birds.

Because the pinioned birds were still confined in their winter pen, we knew that all of these birds were fliers and because they were paired and the pairs were separated, it appeared that they were at least considering nesting.

After the old birds were turned loose, there was a considerable amount of fighting and territorial defense exhibited for a few days. In most cases, the old birds, which can be identified by their neck bands, won out and drove the younger birds off the islands.

As it ended up, the pair of pinioned birds marked with double-tailed white neck bands established their nest on Island # 1, the pair of pinioned birds with yellow single-tailed neck bands established their nest on Island # 2. Island # 3 was occupied by an unmarked pair that may have been flying birds and Island # 4 was occupied by an unmarked pair of flying birds. As has been the case for several years, Island # 5 was not utilized. Island # 6 was occupied by a pair of birds that were marked with red, single-tailed neck bands. In addition to these, an unmarked pair of flying birds utilized the small platform on the Mallard Arm of Gimlet Lake and the pair of pinioned birds marked by double-tailed yellow neck bands used the old, dirt filled boat that has been placed in the outlet of the flowing well.

On April 28 a clutch size check was made with the following results:

<u>Island</u>	<u>Location</u>		<u>Number Of Eggs</u>	<u>Comments</u>
		<u>Other</u>		
1			7	Eggs in good shape, white, double-tailed neck banded pair.
2			6	Eggs in good condition, yellow, single-tailed neck banded pair.
3			5	Four eggs one size, one egg smaller, original nest apparently abandoned, taken over by another pair which has laid single egg.
4			6	Eggs in good condition, nest of unmarked flying birds.
5			None	No nesting attempt made on this island.
6			4	Very large eggs, good condition, red, single-tailed neck banded pair.
	Platform, Mallard Arm, Gimlet Lake		5	Eggs in good condition, nest of flying, unmarked pair.
	Boat, Outlet of Flowing Well		3	Eggs in good condition, very shallow nest, nest of yellow double-tailed neck banded pair.
	Mound in Meadow		4	Only remains of eggs found in this nest apparently destroyed by raccoon or skunk.
Total			40	

As we go into another season, it appears that we are gaining slowly but steadily with our goose flock. If we can have any sort of luck in the next few years, we should be able to see our objective of reestablishing a nesting flock of geese in these hills at least partially fulfilled.

This year, after the old birds were turned into their nesting enclosure and following the fighting that drove some of the young birds from their original territories, flying pairs were observed on Rush Lake on the Dietlein Ranch some three miles northwest of headquarters, on Goose Lake $1\frac{1}{2}$ miles north of headquarters, on the north end of Island Lake some 2 miles east of headquarters, and on a small unnamed lake on the Emerson Ranch some 2 miles northeast of headquarters. Judging from the actions of these birds, they were very definitely "house hunting" and the chances are better than even that they will make their nesting attempts in these locations next year.

The key to our success of this program is undoubtedly the availability of more and better nesting islands and we will do our best to work out some means of satisfying this need.

2. Clipped-wing Birds. As the period ends, the two age classes of these birds that we still retain are present in the following numbers:

Received in 1957 - 40 birds.

Received in 1958 - 41 birds.

In addition to the 41 birds in the 1958 age class, an additional 15 confiscated birds are also present in this same pen. These birds were seized in 1958 and because most of them are the same age class as the birds received from Missouri, they were placed in the same pen.

Both of these groups of birds appear to be in very good condition and we came through the winter with only one loss. This loss occurred on January 4 when one dead bird was found in the pen containing the 1957 age class birds.

On March 31, the first group of birds to be liberated under the clipped-wing program were released on Roundup Lake. These birds were the remainder of the first flock that was received under this program in the fall of 1956. The birds had been wearing brails since last summer but several of them had learned to fly in spite of their handicaps. On January 30, there were eight of these birds in the proper pen and in addition, one bird was in another pen with

the 1958 birds. This latter bird was able to fly but could be identified because of its orange neck band. On the release date, only seven birds could be captured for transportation to the release point. Of these, four were males and three were females. The average weight was found to be 9.34 pounds.

Before release, each bird was banded on the right leg with a white plastic leg band in accordance with instructions issued by the Regional Office. In addition to the known age birds, three confiscated birds that had been in the same pen for several years were also released at the same place and at the same time but they were not leg banded. It was thought best to release these birds on the off chance that pairing might have taken place.

At the time the birds were released on Roundup Lake, approximately 60 migrants were still feeding on the rye that was planted in the meadow on the north side of this body of water last fall. The marked birds were seen regularly on the lake or in the meadows adjacent to the lake until April 15. During this time the migrants had departed. On April 19, six of the leg banded birds returned to the headquarters pen that held them for the last three years. They were all capable of flight and they appeared to make themselves right at home once again. They stayed in or near the pen until April 23.

On April 27, our neighbor to the north, Paul Dietlein, reported a group of six birds on the lake near his house. He was unable to see any leg bands but it is possible that these were our birds for they disappeared from the headquarters pen about this time.

As the period ends, only one bird carrying the plastic leg band remains in the headquarters area. This individual is usually seen with two other unmarked flying birds which are probably two of the confiscated birds released with the experimental birds.

If these geese have left, it will be interesting to see if they return again this fall. It does seem, however, that somewhere along the line the birds got crossed on some of their signals. They were supposed to nest in this vicinity and then migrate further south, not migrate to the north to nest and then use this as their wintering area. We neglected to explain this to them.

B. Grouse Studies. During the period April 15 to 22, we conducted our annual grouse booming and dancing ground checks. We were

assisted in this work by Mr. David C. McGlauchlin, the area biologist stationed at the Lake Andes Refuge. During this period, we checked 32 of the 50 grounds that have been located within refuge boundaries. Because these checks should be made during only one hour each day (from the time that it is light enough to see until one hour later) and because of the great distances that must be covered on an area of this size, these checks are quite time consuming.

In the summary of our findings, it was determined that on those grounds that have been established for a number of years, the sharp-tails are just about holding their own. If the new grounds that were located this year are considered to be new birds, and this seems the most logical assumption, then we have an approximate 62% increase on sharp-tails.

Pinnated grouse on the other hand are continuing their steady decline. We made special attempts this year to cover all of the known or suspected pinnate grounds and we feel that we missed very few birds. On the basis of our figures, we have only 12 pinnate males left on the refuge. This compares with 17 last year.

As an additional attempt to aid both grouse species, a grouse study plan aimed at immediate aid and eventual long range grouse management, was placed in final form this spring. This plan covers most of the points reported in previous narratives and in addition, it was decided to withdraw the entire Camp Valley Unit from all economic use and reserve it for grouse habitat. This is an area of approximately 569 acres. Various other suggestions pertaining to additional areas to be left unmowed and other modifications in our land use as it affects our grouse were discussed and a plan of action was decided upon.

- C. Experimental Plantings. The experimental winter rye and red clover plantings that we made on the north side of Roundup Lake were reported in the previous report. This spring this rye was one of the first things to turn green and it received a considerable amount of migrant goose use. The first group of 54 migrants was noted in the Roundup meadow on March 19. At this time, most of the lakes were still completely frozen with only a few shoreline edges showing water. The last group of 30 migrants was noted feeding on this same meadow on April 8. It is the normal pattern for most small groups of these migrating birds to spend a very short time on the refuge as they pass through on their way north.

Although we have no positive way of being sure, we feel that the birds that utilized the rye this spring were probably the same ones that fed on the area for some time before freeze

up last fall. Because geese were seen regularly for considerably longer than normal this spring, we feel that it is a definite indication that the rye has been a factor in holding them on the refuge.

By noting where the rye was making the best growth this spring, it was easy to see that there is a zone between the lower true meadow and the uplands where this grain will do the best. We will use this information in planning our future plantings.

The clover that was planted with the rye seems to be making reasonably good growth but it is not as spectacular as the more grass like plants. We will closely watch the plantings as the growing season progresses and by fall we should have a very good idea of just how practical this kind of operation will be on this area.

- D. Trash Fish Eradication. On April 1, Mr. Robert Sharp and Mr. Jack Dean of the Fisheries Management Services Branch arrived and during the next five days, checks were made on the lakes that were treated with toxaphene last fall. Other lakes that have actual or potential fisheries problems were also checked.

Excerpts from Mr. Sharp's report that was written following these checks are quoted below:

"CRANE LAKE

... "Test netting operations, 500' of standard experimental gill net, set for 22 hours, took the following fish:

"German Carp	1	22" in length
Black bullhead	4	6 - 9" in length

"In addition to fathead minnows, these were the only species known to be present at the time of the eradication. Autopsy of these fish showed considerable degeneration of internal organs, particularly the liver, kidneys, gall bladder, and peritoneum." ...

"ISLAND LAKE

... "Test netting operations, 750' of standard experimental gill net, set for 72 hours took no fish of any kind. Shore seining results with a 50' - $\frac{1}{4}$ mesh seine were also negative. Only carp were known to be present at the time of the eradication." ...

We were extremely pleased with the findings although it would obviously have been even better if all of the fish had been eliminated in Crane Lake. Because the material used (toxaphene) stays toxic for such a long time, it is still possible that we may yet eliminate all of the fish in Crane Lake or at least make them so weak that they will be unable to spawn or become victims of some secondary infection. It may be that a very few carp still exist in Island Lake but judging by the amount of net set and the results obtained, those remaining individuals must be very lonely.

Present plans call for the restocking of Island Lake with a bass-bluegill mixture sometime in late summer.

Because there are still a few trash fish present in Crane Lake, we will hold any restocking of this water area off until we can make additional checks later in the summer to determine if the latent toxicity has been great enough to eliminate the few stragglers that remain.

= Because our main objective in treating these lakes was to restore them to something like their former productiveness, vegetation wise, we are very optimistic and we feel that the aquatics should be able to make a significant comeback this year. The permanent transects that have been placed across these lakes and which have been checked for two years will give us a very good idea of the rate and extent of such recovery.

As mentioned above, other water areas on the refuge, other than those treated with toxaphene, were also checked by the Fisheries Management Services people. Because of the ever present danger of carp infestation from the Crescent Lake, Blue Lake, and Swan Lake chain south of the refuge, it was suggested that a carp barrier be placed across the outlet ditch just inside of our boundary on the south end of the Smith-Martin Valley. This project was accomplished and it is described in another section of the report.

- E. Blackbird Control. We have received permission to initiate a limited blackbird control program in an effort to eliminate the birds that frequent our goose feeders. Shortly before the spring migration of small, grain eating birds was due, we built a four foot square platform which we placed on posts near a resting area used by the birds. The platform, which was baited with poisoned grain that we originally intended for rodents, was so constructed that birds larger than a blackbird could not reach the bait.

When we placed the bait, we had an estimated 600 to 700

blackbirds in the immediate vicinity. Within a week an approximate 90% reduction had been realized. Dead birds were common under the trees where the birds rested and the survivors were conspicuous by their small numbers.

Shortly after our initial attempts, we were forced to cover the bait because other small birds were arriving. Next winter we should be able to make a significant reduction in the blackbirds that winter in the area. Our efforts will be started in the fall.

- F. Lake Sediment Samples. During the period January 20 to 22, Dr. Paul B. Sears, Chairman of the Department of Conservation, Yale University, and Messrs. William Irving and Lee G. Madison of the Smithsonian Institution, Lincoln Branch, took lake sediment samples from Roundup and Crane Lakes. These samples are to be studied and broken down in search of pollen and other organic remains that can be identified. Carbon 14 determinations will also be made. In this manner, it is hoped that the different species of vegetation that were present in past ages can be determined. To date we have not heard of the results of these tests.

VI. PUBLIC RELATIONS

- A. Recreational Uses. On April 30 a group of 13 children and 4 adults visited the refuge on the School District # 45 school field day. The Refuge Manager showed a group of slides of various species of wildlife found on the area, gave a short recitation, and conducted a short tour of the area. The group held a wiener roast in the headquarters area and departed shortly after noon.

On March 24 a group of four students from the University of Minnesota visited the refuge for one day to study birds that were present on the refuge at that time.

- B. Refuge Visitors. See Appendix I.
- C. Refuge Participation.

Feb 25: Refuge Manager attended Soil Conservation Service meeting in Oshkosh concerning grasshopper control.

Apr 9: Refuge Manager attended Soil Conservation Service Great Plains meeting at local school house.

- D. Hunting. No hunting during this period.
- E. Fishing. Apparently the word that no game fish are present in any refuge lakes open to fishing has gotten around. Normally we receive inquiries concerning fishing in the early spring but this year even those fishermen unfamiliar with the area have ceased to stop. Undoubtedly, this activity will boom once game fish are again present in refuge lakes.
- F. Violations. None noted or recorded during this period.

VII. OTHER ITEMS

- A. Photographs. The attached photos were taken by the Refuge Manager with the Government owned camera and processing (poor quality) was accomplished by a commercial firm.
- B. Surplus Material. During this period, a considerable amount of surplus material was obtained from agencies of the Department of Defense. A partial list of these items is as follows:
 1. Two listening devices were obtained from the Ground Observer Corps. These units are to be modified and used in locating grouse dancing and booming grounds. By the appearance of these units, they are unused.
 2. Numerous miscellaneous items were obtained from the Sioux Ordnance Depot which is located approximately 100 miles from the refuge. Some of the items received were:

Six battery workers aprons, two explosion proof electric lamps, twenty-one garbage cans with lids, ten safety cans, four oily waste cans of various sizes, twelve fuel tanks, 155 pieces of heavy angle steel, and 2070 pounds of pig lead.

We also acquired a gasoline engine driven, 12 volt battery charger from this Depot. This machine is in very good condition.

All of the items were transferred to us with no exchange of funds. Some of this material will be excess to our needs and will be available for transfer to other stations. To date, four safety cans, one adjustable seat, and 138 pounds of lead have been transferred.

3. On February 6, we picked up a GMC, 6x6 tank truck at the

Offutt Air Force Base, Omaha, Nebraska. The entire pumping system of this truck has been removed and completely modified so that we now have a very adequate and maneuverable fire truck.

One of the main objections to our revised grazing program has been the resulting fire hazard in the form of heavy vegetation left on the ranges. However, we feel that with adequate fire fighting equipment available, these fears should be curtailed somewhat. At least we feel much better knowing that we have a piece of equipment that will enable us to reach fires quickly so that they can be suppressed before they become too large.

This truck was also transferred to us without exchange of funds. The actual cost of the conversion of the vehicle from a tanker to a fire truck was \$316.38 (this includes all parts required and the regular labor to do the job) and \$127.59 was expended for travel and gasoline to pick up the truck. To date the truck has cost us \$443.97.

The motor of the vehicle was replaced just prior to being placed in storage by the Air Force and it, therefore, has very few miles on it. All in all, we feel that we have a very good piece of fire fighting equipment in this vehicle.

- C. Accidents. As mentioned elsewhere in this report, on January 31 our GMC dump truck broke through the ice while fill was being hauled to the last island placed on Gimlet Lake. The truck broke through approximately 200 feet from shore. At this point there was about 3 feet of water and 2 feet of mud.

Attempts to move the truck with our D-1 crawler proved futile so large planks and poles were placed under the frame of the truck to prevent further settling. A D-8 tractor, which was located in a winter feeding unit approximately 3 miles from headquarters, was rented from one of our permittees, Mr. Clarence Peterson.

While attempting to pull the truck up on the ice with a cable, the right front wheel struck the ice and the tie rod end was broken. Also, the right running board was resting on a plank and as the truck moved, the running board was loosened and bent. It was evident that we would be unable to pull the truck up on the ice. Dynamite was then used to blast a channel through the ice and the truck was pulled through this opening.

The ice was from 10 to 12 inches thick and numerous large chunks resulted from the blasting. These chunks became so compact in front of the truck that it was hard to determine where

the edge of the blasted channel was located and in one instance, the truck was pulled into the solid ice before the tractor could be stopped. A badly dented left fender and a slightly dented right fender resulted.

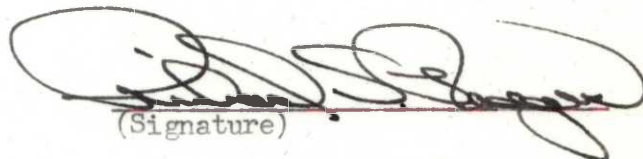
A breakdown of all resulting costs is as follows:

Rental of D-8 tractor	\$ 30.00
Tie rod end	8.46
16 hours of regular labor to completely check and service truck	26.56
Oil and grease	4.40
Cost to repair fenders (estimated)	40.00
TOTAL	\$129.42

No injuries resulted from this accident.

D. Acknowledgement. This report was authored as follows:

Sections IB, II, IV, and V by Richard S. Rodgers.
Sections IA, III, VI, VII, and NR Forms by Fred R. Rusch, Jr.
Typing and final assembling were also accomplished by Mr. Rusch.


(Signature)

Richard S. Rodgers
(Name)

Date: _____

Refuge Manager
(Title)

Approved, Regional Office:

6/3/59
(Date)


(Signature)

(Name)

Acting Chief, Division of Wildlife
(Title)

CRESCENT LAKE NATIONAL WILDLIFE REFUGE
ELLSWORTH, NEBRASKA

OFFICIAL VISITORS LOG

NAME	ORGANIZATION	PURPOSE OF VISIT	DATE	
			ARRIVED	DEPARTED
Paul B. Sears	Yale University	Sediment Collections	Jan 20	Jan 22
William Irving	Smithsonian Institution Lincoln Branch	Sediment Collections	Jan 20	Jan 22
Lee G. Madison	Smithsonian Institution Lincoln Branch	Sediment Collections	Jan 20	Jan 22
Howard Huenecke	RO	Refuge Inspection	Feb 14	Feb 15
Clair T. Rollings	RO	Refuge Inspection	Feb 14	Feb 16
Harland M. Morgan	USGMA, North Platte, Nebr.	Deliver Confiscated Goose	Feb 27	Same
Edward Fherrien	University of Minnesota	Bird Study	Mar 24	Same
William Brown	University of Minnesota	Bird Study	Mar 24	Same
Don Smith	University of Minnesota	Bird Study	Mar 24	Same
Jim Brown	University of Minnesota	Bird Study	Mar 24	Same
Robert Sharp	RO	Check results of fish eradication	Apr 1	Apr 5
Jack Dean	RO	Check results of trash fish eradication	Apr 1	Apr 5
Keith Donohoe	Nebraska Game Commission	Check results of trash fish eradication	Apr 5	Same
Harvey Suetsugu	Nebraska Game Commission	Courtesy Call	Apr 5	Same
Don Hunt	Nebraska Game Commission	Courtesy Call	Apr 13	Same
M.C. Hammond	Lower Souris Refuge	Discuss Biological Problems	Apr 14	Apr 15
David C. McGlauchlin	Lake Andes Refuge	Spring Grouse Counts	Apr 14	Apr 23

APPENDIX I

OFFICIAL VISITORS LOG

APPENDIX I (CONTINUED)

NORTH PLATTE NATIONAL WILDLIFE REFUGE

NARRATIVE REPORT

January 1 to April 30, 1959

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

WATERFOWL

REFUGE Crescent Lake Refuge

MONTHS OF January TO April, 19 59

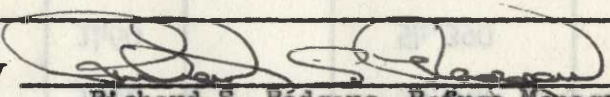
[illegible]

3 -1750a

Cont. NR-1
(Rev. March 1953)WATERFOWL
(Continuation Sheet)REFUGE Crescent Lake RefugeMONTHS OF January TO April, 19 59

(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		157	63		18	18			1,792	
Cackling										
Brant										
White-fronted										
Snow		12	24						252	
Blue										
Other										
Ducks:										
Mallard		80	385	1195	1105	1045	495		30,135	
Black										
Gadwall		75	725	1295	1675	1840	1160		47,390	
Baldpate		25	435	315	120	50	35		6,860	
Pintail	10	70	345	1345	965	375	140		22,750	
Green-winged teal			365	378	220	160	105		8,596	
Blue-winged teal			2	185	1015	1010	1110		23,254	
Cinnamon teal										
Shoveler		90	635	1215	2275	2095	1460		54,390	
Wood										
Redhead	40	400	3255	492	230	168	132		33,019	
Ring-necked			5	120					875	
Canvasback	55	600	309	368	140	80	48		11,200	
Scaup		100	895	2345	2145	2105	1240		61,810	
Goldeneye	50	50	50	10					1,120	
Bufflehead		10	19	190	80	78	45		2,954	
Ruddy			157	85	280	500	495		10,619	
Other Mergansers	160	100	41	1		2			2,128	
Unidentified						25			175	
Coot:			210	1050	2150	2985	3135		66,710	

(over)

	(5)	(6)	(7)	SUMMARY
	<u>Total Days Use</u>	<u>Peak Number</u>	<u>Total Production</u>	
Swans	:	:	:	Principal feeding areas are lakes containing aquatic food
Geese	2,044	169	:	plants.
Ducks	317,275	10,250	:	Principal nesting areas No nesting noted during this period.
Coots	66,710	3,135	:	
Reported by				 Richard S. Rodgers, Refuge Manager

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)

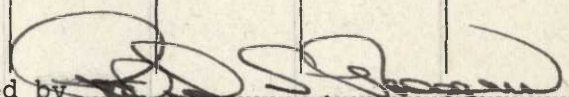
MIGRATORY BIRDS

(other than waterfowl)

Refuge Crescent Lake RefugeMonths of January to April 1959

(1) Species Common Name	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
<u>I. Water and Marsh Birds:</u>										
White Pelican	75	Apr 7								
Great Blue Heron	1	Mar 27								
Western Grebe	7	Apr 23								
Pied-billed Grebe	3	Apr 8								
Eared Grebe	25	Apr 24								
Double-crested Cormorant	1	Apr 8								
Sandhill Crane	8	Apr 7								
<u>II. Shorebirds, Gulls and Terns:</u>										
Common Snipe	1	Apr 9								
Dowitchers	6	Apr 8								
Common Tern	1	Apr 22								
Black Tern	2	Apr 23								
Ring-billed Gulls	3	Mar 10								
Franklin's Gulls	30	Apr 24								
Killdeer	2	Mar 23								
Baird's Sandpiper	1	Mar 24								
Avocet	1	Apr 14								
Long-billed Curlew	2	Apr 2								

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. <u>Doves and Pigeons</u> :					
Mourning dove	1	Apr 14			
White-winged dove					
IV. <u>Predaceous Birds</u> :					
Golden eagle	Year around residents				
Duck hawk	Year around residents				
Horned owl	Year around residents				
Magpie	Very erratic movements; present on refuge year around				
Raven	Seen occasionally on refuge year around; very erratic movements				
Crow	3 Apr 21				
Burrowing Owl	Year around residents very commonly seen on the refuge				
Marsh Hawk	1	Apr 22			
Sparrow Hawk	2	Jan 13			
Rough-legged Hawk	1	Feb 28			
Bald Eagle	1	Jan 21			
Prairie Falcon					
			Reported by  Richard S. Rodgers, Refuge Manager		

INSTRUCTIONS

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

3-1752

Form NR-2

(April 1946)

UPLAND GAME BIRDS

1613

Refuge Crescent Lake RefugeMonths of January to April, 19459

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'v'd.	Estimated Total	Percentage	Hunting	For Re- stocking	For Research	Estimated number using Refuge	Pertinent information not specificioally requested. List introductions here.
Sharp-tailed Grouse	Meadows and Up- lands - 40,000 acres					None			975	Dancing ground checks indicate an approximate 62% increase over last year.
Pinnated Grouse	Meadows & Uplands 8,000 acres					None			24	Booming ground checks indicate an approximate 31% decline over last year.
Sharp-tailed- pinnated Hybrid	Meadows & Uplands 8,000 acres					None			3	Steady decline.
Ring-necked Pheasant	Low and Highland Meadows, 3,000 acres					None			640	No evidence of significant winter kills noted. An ex- cellent breeding population present as we near nesting period.

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

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

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

3-1754

Form NR-4

(June 1945)

SMALL MAMMALS


Refuge Crescent Lake RefugeYear ending April 30, 1959

(1) Species	(2) Density		(3) Removals					(4) Disposition of Furs					(5) Total Popula- tion	
Common Name	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	
								Permit Number	Trappers Share	Refuge share				
Raccoon					4				None				4	75
Mink									None					35
Muskrat									None					1200
White-tailed Jack- rabbit									None					50
Black-tailed Jack- rabbit									None					150
Cottontail rabbit									None					200
Weasel									None					75
Stripped Skunk					2				None				2	60
Spotted Skunk					1				None				1	40
Coyote					2				None				2	35
Badger									None					15

* List removals by Predator Animal Hunter

* List removals by Predator Animal Hunter

REMARKS:

Reported by  Richard S. Rodgers, Refuge Manager

REFUGE GRAIN REPORT

Refuge Crescent Lake RefugeMonths of January through April, 1959

(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
Shelled Corn	45					5	5	40		40	
Alsike Clover	86#							86#	86#		
Red Clover	60#							60#	60#		
Millet	460#							460#	460#		
Blue Grass Seed	150#							150#	150#		
Milo and Wheat Mixed	325					225	225	100		100	

None received this period.

(8) Indicate shipping or collection points _____

(9) Grain is stored at refuge headquarters in granary.(10) Remarks None.

*See instructions on back.

REFUGE GRAIN REPORT

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

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

- (1) List each type of grain separately and specifically, as flint corn, yellow dent corn, square deal hybrid corn, garnet wheat, red May wheat, durum wheat, spring wheat, proso millet, combine milo, new era cowpeas, mikado soy beans, etc. Mere listing as corn, wheat, and soybeans will not suffice, as specific details are necessary in considering transfer of seed supplies to other refuges. Include only domestic grains; aquatic and other seeds will be listed on NR-9.
- (3) Report all grain received during period from all sources, such as transfer, share cropping, or harvest from food patches.
- (4) A total of columns 2 and 3.
- (6) Column 4 less column 5.
- (7) This is a proposed break-down by varieties of grain listed in column 6. Indicate if grain is suitable for seeding new crops.
- (8) Nearest railroad station for shipping and receiving.
- (9) Where stored on refuge: "Headquarters granary," etc.
- (10) Indicate here the source of grain shipped in, destination of grain transferred, data on condition of grain, unusual uses proposed.

TABLE OF CONTENTS

	Page
I. GENERAL	
A. Weather Conditions	3
B. Habitat Conditions	3
II. WILDLIFE	
A. Migratory Birds	3
B. Upland Game Birds	4
C. Big Game Animals	4
D. Fur Animals, Predators, Rodents, and Other Mammals	4
E. Hawks, Eagles, Owls, Crows, Ravens, and Magpies	4
F. Fish	4
G. Reptiles	4
H. Disease	4
III. REFUGE DEVELOPMENT AND MAINTENANCE	5
IV. RESOURCE MANAGEMENT	5
V. PUBLIC RELATIONS	5
VI. OTHER ITEMS	5
APPENDIX	
NR Forms	

I. GENERAL

A. Weather Conditions. The weather at this refuge is generally the same as that experienced at the Crescent Lake Refuge which is located approximately 65 airline miles to the east.

B. Habitat Conditions.

1. Water. The water levels of the lakes on this area are now the highest they have been this early for several years. Both Lake Alice and Winter Creek Lake are filled to capacity. The water level of Lake Minatare is up in the trees and, according to marks left on trees by previous high waters, is approximately ten feet below high water line. If we receive anywhere near the normal precipitation this spring, Lake Minatare should reach the highest level in several years.
2. Food and Cover. Waterfowl food exists on this area only in very minute quantities but some resting cover is present around the edges of the lakes.

Cover for upland game birds and deer is relatively abundant in the narrow strip between the high water lines of the reservoirs and the refuge boundary.

II. WILDLIFE

A. Migratory Birds. Only one visit was made to this area after the lakes opened up this spring. This was on March 20. At this time, there was a total of approximately 7500 birds on the three reservoirs that form the water areas of this refuge. Of these, approximately 4500 were mallards, 2100 were pintails, 175 were redheads, 50 were goldeneye, and about 700 were mergansers. Although other work prevented more frequent visits, it is probable that a normal build up pattern was followed. This usually involves a gradual build up in numbers as the birds move north for the spring. No huge concentrations, such as occur in the fall, are present because the birds are not harassed in the surrounding area or along the North Platte River which flows to the south of the refuge.

These reservoirs provide little else than resting areas and as soon as the water becomes warm enough and even at times before it is warm enough, public use starts on the area and from then on the birds can hardly find a place to sit down

among the water skiers and boaters.

- B. Upland Game Birds. The very heavy cover around some of the lakes makes excellent pheasant habitat and this combined with food in the farm lands that surround the refuge makes the pheasant's life relatively easy. Apparently an adequate brood stock of these birds came through the winter.

We made no sightings or received no reports that any sharp-tailed grouse used the area during this winter.

- C. Big-Game Animals. In spite of the terrific amount of public use that this area receives, a few deer still manage to hang on, especially around Lake Minatare. We have no actual sight record of these animals during this period but we assume that a few of them are still present for they were seen last fall.
- D. Fur Animals, Predators, Rodents, and Other Mammals. The cover that is available is excellent habitat for raccoons and skunks and a few of these animals remain present on the refuge.

Red squirrels were reported during the previous period and although they were not seen during the winter, they are probably still in residence.

- E. Hawks, Eagles, Owls, Crows, Ravens, and Magpies. Marsh hawks are seen in the vicinity of this refuge the year round much as they are on Crescent Lake. It is possible that there may have been some rough-legs present although we have no records of such being seen this period.

Golden eagles commonly use the trees that surround the lakes during winter and from these vantage points they pick up crippled waterfowl or upland game birds. Great horned owls are year around residents and the bulk of their food is probably supplied by rabbits and small rodents.

- F. Fish. We have no direct report but it is probable that a certain amount of ice fishing took place during the winter. We have no idea of just how successful these efforts were. As the period ends, the water is still quite cold and fishing pressure appears to be very light.
- G. Reptiles. No significant sightings or reports of animals in this category were received during this period.
- H. Disease. We know of no outbreak of disease on this refuge.

III. REFUGE DEVELOPMENT AND MAINTENANCE

All development and maintenance on this refuge is accomplished by the Bureau of Reclamation.

IV. RESOURCE MANAGEMENT

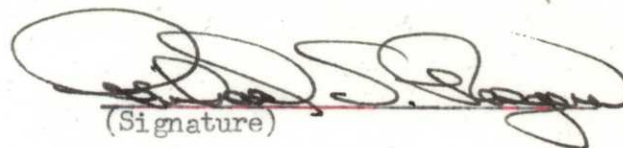
All economic use on this area is controlled by the Bureau of Reclamation.

V. PUBLIC RELATIONS

- A. Recreational Use. We have no actual figures on the amount of use received but boats were being put into the water a very short time after the ice had left. Because of the proximity of this area to the town of Scottsbluff, it receives a tremendous amount of public use.
- B. Hunting. No hunting is permitted on this area.
- C. Fishing. During the period we received a revised set of fishing regulations that pertain to this area. They simply clarify our regulations and make them conform more nearly with the State Code and they also give us the legal basis by which we can control trespass.

VI. OTHER ITEMS

There is very little of interest to report on this area except the casual observation that for some reason the boundary signs that were replaced a year ago seem to be holding up remarkably well. Very few of these replacement signs have been shot up and we are actually quite surprised. Judging by the news that we hear from the Scottsbluff radio, the local law enforcement authorities are having their hands full with real and would-be juvenile delinquents who seem intent upon general vandalism. Much of this activity has been centered near the refuge area. These youngsters must be either poor shots or perhaps the cost of ammunition is too high.


(Signature)

Richard S. Rodgers
(Name)

Refuge Manager
(Title)

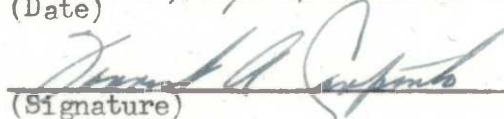
Date: _____

Approved, Regional Office:

(Date)

6/3/59

(Signature)



(Name)

Acting
(Title)

Chief, Division of Wildlife

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

WATERFOWL

REFUGE North Platte Refuge

MONTHS OF January TO April, 19⁵⁹

[illegible]


3 -1750a

Cont. NR-1
(Rev. March 1953)WATERFOWL
(Continuation Sheet)REFUGE North Platte RefugeMONTHS OF January TO April, 1959

(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	4500									
Black										
Gadwall										
Baldpate										
Pintail	2100									
Green-winged teal										
Blue-winged teal										
Cinnamon teal										
Shoveler										
Wood										
Redhead	175									
Ring-necked										
Canvasback										
Scaup										
Goldeneye	50									
Bufflehead										
Ruddy										
Other Mergansers	700									
Coot:										

Unknown - Sufficient information not available. This area
visited during spring and summer only when work load permits.

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production	SUMMARY
Swans	:	:	:	Principal feeding areas
Geese	:	:	:	
Ducks	:	:	:	Principal nesting areas
Coots	:	:	:	
Reported by				 Richard S. Rodgers, Refuge Manager

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).

(Nov. 1945)

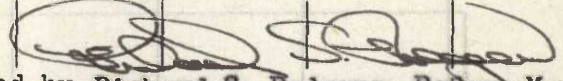
(other than waterfowl)

Refuge North Platte Refuge

Months of January to April 1959

[illegible]

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. <u>Doves and Pigeons:</u> Mourning dove White-winged dove					
IV. <u>Predaceous Birds:</u> Golden eagle Duck hawk Horned owl Magpie Raven Crow Marsh Hawk	Year around residents Year around residents Constant movement on and off refuge				
<div style="text-align: right;">  Reported by <u>Richard S. Rodgers, Refuge Manager</u> </div>					

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

1613

Refuge North Platte Refuge

Months of January to April, 19459

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'v'd.	Estimated Total	Percentage	Hunting	For Re- stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Sharp-tailed Grouse	3,000 acres					None			Unknown	No sightings reported during this period but a few birds normally use the area during periods of snow cover.
Ring-necked Pheasants	3,000 acres					None			Unknown	These birds constantly move on and off the refuge in their quest for food and cover.

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

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

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

3-1754
Form NR-4
(June 1945)

SMALL MAMMALS

Refuge North Platte Refuge

Year ending April 30, 1959

(1) Species	(2) Density		(3) Removals					(4) Disposition of Furs					(5) Total Popula- tion	
Common Name	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	
								Permit Number	Trappers Share	Refuge share				
Fox Squirrel					None									50
Raccoon					None									Unknown
Muskrat					None									Unknown
Stripped Skunk					None									Unknown

* List removals by Predator Animal Hunter

* List removals by Predator Animal Hunter

REMARKS:

Reported by Richard S. Rodgers, Refuge Manager

INSTRUCTIONS

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

- (1) SPECIES: Use correct common name. Example: Striped skunk, spotted skunk, short-tailed weasel, gray squirrel, fox squirrel, white-tailed jackrabbit, etc. (Accepted common names in current use are found in the "Field Book of North American Mammals" by H. E. Anthony and the "Manual of the Vertebrate Animals of the Northeastern United States" by David Starr Jordan.)
- (2) DENSITY: Applies particularly to those species considered in removal programs. Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottom land hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) REMOVALS: Indicate the total number under each category removed since April 30 of the previous year, including any taken on the refuge by Service Predatory Animal Hunter. Also show any removals not falling under headings listed.
- (4) DISPOSITION OF FUR: On share-trapped furs list the permit number, trapper's share, and refuge share. Indicate the number of pelts shipped to market, including furs taken by Service personnel. Total number of pelts of each species destroyed because of unprimeness or damaged condition, and furs donated to institutions or other agencies should be shown in the column provided.
- (5) TOTAL POPULATION: Estimated total population of each species reported on as of April 30.

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

Early in the period our lakes were covered with one of the thickest layers of ice that has been present for a number of years. We took advantage of this situation and redressed the goose nesting islands in Gimlet Lake that were placed originally during the winter of 1956-1957.

The island shown was the first of the wooden frame-aluminum roofing type that we placed during the winter of 1957-1958. At the time of placement, it was impossible to provide sufficient fill because of the thinness of the ice. This winter we were able to build the island up considerably but even so, a raise in the water level resulted in such severe erosion that as the period ends, the island is again unusable.



In an attempt to reduce the weight of fill and thereby slow the settling process, we filled the islands placed this winter with hay first and then followed this by a shallow layer of earth. If the framework is filled entirely with earth, it is so heavy that the island rapidly sinks and it thus becomes impossible to use machinery in the immediate vicinity. The technique described was not entirely satisfactory because after the island had settled through, the hay also settled and the top fill was not sufficient to provide a foundation that would remain above water line. It will thus take at least two years to make these islands usable.

We hoped that by spreading the fill out somewhat and not dumping it directly into the island frame that we would be able to control the settling process better. We planned to place the necessary fill around the island and then utilize a tractor and loader to place it inside the frame. It was our theory that if we worked fast enough we would be able to finish the job before any appreciable settling occurred. In actual practice, this technique worked quite well except that we were still unable to place enough dirt in the frames to bring the top of the islands above water level.



This is the manner in which the islands settled even when they were only partially filled. After such settling started, it was unsafe to use any equipment in the immediate vicinity.

While hauling the second load of fill to the last island that was to be placed, we had the misfortune to pass over a weak spot in the ice and the back wheels of our dump truck settled through. The water in this vicinity was comparatively shallow but the bottom was extremely soft.



It was impossible to pull the truck back on top of the ice without risking severe damage to the rear end and we therefore employed dynamite to blast a path to the shore. We were fortunate in that the wind was blowing away from the vehicle and therefore the debris did not fall on the truck. We used not more than two dynamite sticks at a time so that the possibility of concussion damage was held to a minimum.

We were fortunate that we were able to rent a D-8 tractor and cables from one of our grazing permittees who happened to be using the machine for feeding cattle on the refuge. After the truck was rescued, it was serviced and completely checked and again placed in service. Minor denting of both fenders and a broken tie rod end was the extent of the damage. It is obvious that we cannot continue to risk damage to expensive equipment such as this so it is essential that we find some other means of constructing our very badly needed nesting islands.



During the fore part of the report period, Dr. Paul Sears, Chairman of the Department of Conservation, Yale University, and two gentlemen from the Smithsonian Institution took a number of bottom samples from Roundup and Crane Lakes. By identifying and Carbon 14 dating the pollen in these samples, they hope to reconstruct a picture of the vegetation that was present in the sandhills in the recent geologic past.

At the time the samples were taken, the weather was very bitter and considerable difficulty was experienced because the samples usually froze to the sampling apparatus as soon as they were withdrawn from the water.



Prior to their release this spring, all of the birds in our pinioned flock, as well as a good number of their flying offspring, were captured and thoroughly checked for physical condition, band condition, weight, and general appearance. It was the first time that we have weighed the birds and we plan to continue this practice each spring and fall in an effort to determine if our winter diet is adequate and also to determine some average weights for various age classes of birds under captive and semi-captive conditions. In the photo, Mr. Schuler, our Maintenance man, is on the right and Mr. Rusch, our Clerk, is on the left.

A set of dairy scales and a simple stand made the weighing of the birds comparatively simple. The bird that was being checked at the time the photo was taken was a year old, flying bird, one of the offspring of the flock.



A year ago, when we did not have sufficient ice on our lakes to permit us to use machinery, we built several of these small platforms in hopes that some nesting use would result. Last year nothing happened but this year a pair of flying birds that were apparently driven from one of the larger nesting islands by a pair of the older pinioned birds, set up housekeeping as shown. As the period ends, this two year old bird is incubating five eggs.

As mentioned in the text of this report, flying birds (young produced by our flock) had established themselves on all of our nesting islands before the pinioned birds were released from their wintering pen. After this release, the pair of birds marked by double-tailed, white, plastic neck bands drove a pair of flying birds from Island # 1 and proceeded to lay the clutch seen in this photo. As the period ends, incubation is still in progress,



This photo clearly shows the extent to which our islands will erode in a very short time. Before the ice left the lake, this island had been heaped as high as possible with fill but because our soil is nothing but pure sand, it had been reduced to the state shown at the end of the period. A pair of pinioned geese marked with single-tailed yellow neck bands called this island home and as the period ends, the female was incubating six eggs.

We are fortunate that we are located reasonably close to an Army Ordnance Depot that often declares things surplus for which we have a need but seldom have the money. The Army likes to dispose of things by lots rather than by individual units and we thus sometimes are forced to take a few more pieces of some particular item than we might, if we had a choice. Some of the garbage cans shown now hold seed that we are using in our experimental planting program and others are to be placed in our fire caches to hold gunny sacks. The small safety cans are always in demand and the oily waste receptacles help us comply with safety regulations. During this period we also received a gasoline engine driven, 12 volt, battery charger, a quantity of lead to be used as ballast in our four wheel drive pickups, two Ground Observer Corps listening devices to be converted so that they may be used to locate grouse dancing grounds, and a GMC, 6x6, tank truck that has been converted to a fire truck.



Mr. Eldred was one of our near neighbors and has long been a refuge permittee. His land joined us along some twenty miles of our south and west boundaries. His passing breaks one of the last links between the present and the day of the fabled cattle baron.

Everett M. Eldred, Pioneer Sand Hills Cattleman, Dies

ALLIANCE — Funeral services for Everett Morris Eldred, 94, pioneer Sand Hills cattleman, will be held at 2:30 p.m. Saturday from St. Matthew's Episcopal Church here.

The Rev. Thomas Johnson will officiate and burial will be in the Alliance Cemetery under direction of the Landa Funeral Home.

Eldred, the last surviving charter member of the Nebraska Stock Growers Assn., died at his ranch home 33 miles southwest of Alliance Wednesday night.

His 100,000-acre ranch was reputed to be the largest single ranch in the United States continuously owned by one individual.

Born Dec. 5, 1864, in Jones County, Iowa, he went to Crete and later Wilber, Neb., to make his home with a cousin when a boy.

At the age of 21 he became interested in ranch life and when he heard land was available in the Sand Hills, he started west with two horses and 150 head of young cattle.

In 1888 he homesteaded in what

is now Garden County and built one of America's largest Hereford cattle ranches.

He was married on Sept. 28, 1898, to Mary Ellen Avery at the home of her father, Sylvanus Avery, a neighbor.

The Eldreds' first home was an unburnt adobe brick and on this site in 1937 they built a 20-room brick home surrounded by a tree-shaded landscaped lawn with an underground sprinkling system and extensive rose gardens.

Later Eldred installed a 2-way radio system and from his ranch office or car directed ranch activities which speeded up the cattle roundup and streamlined business operations.

Eldred often recalled his early experiences as a shipper to the Omaha market in the 1890s when he received a top price of two cents a pound for 3-year-old steers.

He remembered the day the Nebraska Stock Growers Assn. was formed with R. M. Hampton, then president of the First National Bank of Alliance.

His wife; their son, Victor, and three grandchildren survive.