

BRANCH OF WILDLIFE REFUGES

Narrative Report Routing Slip

Date Jan 20 . 1954

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Mr. ~~Dutton~~ PAD

Mr. ~~Krummel~~ _____

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Stenographers

Refuge Lacreek

Period September - December 1953

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LACREEK NATIONAL WILDLIFE REFUGE
NARRATIVE REPORT

September, October, November and December, 1953

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LACREEK NATIONAL WILDLIFE REFUGE
NARRATIVE REPORT

September, October, November, and December 1953

I. GENERAL

A. Weather Conditions

Weather conditions during the autumn months of 1953 may be described as extremely mild and dry, with only 2.22 inches total precipitation and only traces of snow falling to early January. Week after week of mild "bluebird" weather persisted when the temperature rose to the fifties here on the southwestern Dakota prairies and to the sixties and low seventies on the nearby eastern slope of the Black Hills. We appear to be situated in a distinctive weather zone affiliated with the Rocky Mountain region, from whence our late winter storms appear to originate. Virtually all of the great cold waves and disturbances which sweep through the northern and eastern Dakotas eastward miss this region during the early winter months.

Our autumns and early winters are often exceptionally mild for this latitude. Late February and March usually bring the most disagreeable weather of the year to the region, with disagreeable wet snows, sleet, and raw winds prevailing at that season.

Following is a summary of local weather conditions for the reporting period.

<u>Month</u>	<u>Precipitation</u>	<u>Snow</u>	<u>Max. Temp.</u>	<u>Min. Temp.</u>
September	.36	0	93	31
October	1.40	0	92	25
November	.13	T	73	15
December	.33	6 $\frac{1}{2}$ "	55	-2
Totals	2.22	6 $\frac{1}{2}$ " Extreme	93	Extreme -2

B. Water Conditions

As this is written in early January, all pools are filled to the desired winter levels except pool 9 which is 6" below spillway elevation. Pools 7, 8, and 10 are overflowing the spillways at average winter levels. The smaller units, No. 2 through 6 are being carried at usual winter levels some 12"-15" below that of the summer season.

Control gates on pool 9 have been operated to refill No. 10 pool and maintain the open channels where our winter Waterfowl concentration rests.

The sandhills border creeks which fill our impoundments provide a remarkably constant supply of water even in drouth seasons.

Water conditions may be generally summarized as "favorable". One problem has been encountered in the icing of spillways and control gates, completely stopping release of water between control units. The structures become ice locked as a result of unusually frequent high winds which blew spray into the controls during freezing temperatures. This necessitated some hazardous chopping details to clear the structures and release the gates. Freezing of control gates is to be expected but we have never before witnessed the complete damming of 50 foot spillways by winds sufficiently strong to push back the overflow waters and ice lock the open structures.

C. Fires

No fires occurred this season. Alert rural fire departments at Martin and Tuthill quickly suppressed all blazes on private lands in the area. The refuge fire fighting unit was readied for use at all times and we made one practice run to the scene of a local fire north of the refuge. A very serious hazard has existed to the present time and we have been unable to complete some planned experimental burning in our marshes.

II. WILDLIFE

A. Migratory Birds.

1. Waterfowl.

a. Populations and Behavior.

The 1953 fall waterfowl flight may be described as satisfactory to good though estimated at 20% under that of last season, by comparison of maximum concentration numbers. It is conceivable however that the total number of birds which moved through during the season may have approached that of last year. The flight was characterized by a leisurely drift of migrants through the refuge, with relatively constant rate of influx and departure and no spectacularly large waves.

Best concentration of ducks occurred from November 5 - 7 when a period of cold weather brought in the largest wave of migrants noted, with the best hunting bags taken at this time. Largest concentration of birds was estimated at 70 - 75,000 during this period as compared to 95 - 100,000 maximum last season. We could observe no pronounced additional concentration after this date (November 5 - 7) as reported elsewhere in the state including the November 20 - 21 cold snap which pushed both locally concentrated birds and incoming migrants southward.

Following the November 20 - 21 freezeup some 25,000 Mallards and a scattering of Goldeneyes and Mergansers remained to the close of the season.

The wintering concentration had dwindled to approximately 15,000 birds by January 1st. nearly all Mallards.

The flight commenced as usual with the movement of teal in late August, building up in late September and October and reaching a peak concentration in November.

Geese. Originally outside the main migration route through eastern Dakota, a limited but steady buildup of the goose flight continues at Lacreek

Although no exceptionally large concentrations appeared this fall, increased numbers of both White-fronts and Canada's moved through. Numerous flocks passed over without interrupting flight. It is hoped that a sizeable concentration similar to our spring flight of Canada Geese can be built up by expansion of our agricultural units and establishment of a decoy flock.

The 1953 fall flight of geese began at the Refuge October 1 when the usual vanguard of White-fronts appeared, followed by the Canadas by mid-month. Several hundred Canadas remained following close of the season to mid-December.

General population trends among waterfowl (Noted locally)

White-fronted Goose	increase
Canada Goose	increase
Snow Goose	stragglers only noted among other migrants
Ducks, all species	about 20% overall decrease noted though this may have been result of the extremely mild weather, which influenced gradual influx and departure through the season rather than moving the birds in spectacular waves.

b. Other Waterbirds

Western and Pied-billed Grebes moved through in average numbers.

Pelicans and Cormorants disappeared by mid-October. One of the hundred immature Pelicans banded at the nesting island in pool 10 was found dead in Kansas during the southward migration through that state in September.

Great-blue herons, Black Crowned Night Herons, and American Bit-terns were present in usual numbers.

2. Food and Cover

An abundance of tall weed cover and seed for upland game birds in nearly all sections of the refuge. The late fall mowing of weed growth along dikes appears to be an excellent game management practice for pheasants which are able to feed on the snow free and open embankments. Supplementary fields of grain also left, including a 39 acre corn field.

3. Disease

None noted among upland Game.

C. Big Game Animals

We continue to see small herds or individual animals of both Mule and White-tailed species over the refuge. On December 26 while engaged in taking the annual Christmas week bird count for the Audubon Society a herd of six mule deer including two late fawns was observed at close range in the Elm Creek grove. Bands of 14 - 15 have been reported occasionally at this site by permittees and refuge personnel.

Heavy weed and sweet clover thickets are also favorite habitat in milder weather.

We have some 20 - 30 deer on the area and the ratio is about 1-6, one White-tail to six Mule Deer at present.

2. Food and Cover

The winter has so far remained excellent for deer, which have not had to seek the brush fringes of nearby creek valleys for shelter this season.

3. Disease

None noted.

D. Fur Animals, Predators, Rodents, Other Mammals

Muskrat - A sharp reduction noted in population which may be undergoing a cycle down trend, influenced by low water levels of the autumn season, or other factors. Only 369 animals taken during fall season and no spring trapping is contemplated in 1954. This species also reported at a low ebb in nearly all sandhills lakes.

Mink - Present in average numbers. 21 animals trapped by permittees this winter. No conflict with other species or serious predation noted.

Skunk - Trappers report these animals are considerably reduced in number on the refuge, and fewer have been noted the past autumn than any recent year.

Weasel - Average population of the long tailed variety (*m. l. longicauda*).

Badger - Population reduced since last year. Two taken by permittees. Animals are taken whenever found on dikes and population kept at minimum. A \$ 4.00 bounty has reduced the animals in the local county.

Raccoon - Still overly abundant. Trappers had taken some 30 at last count and many have been taken by coon hunting parties on adjacent lands. The Raccoon has spread over the western prairie regions in recent years, becoming numerous in even the arid badlands territory. Numerous ranchers and farmers are acquiring hunting dogs and becoming devotees of the coon hunt and banquet as in the southern U.S.

Beaver - Small colonies still established regularly in refuge canals. Must be removed from most areas due to excavating in dikes. Five taken this fall by permittees and are live trapped and turned to state when presence discovered in summer.

Coyotes - Occasional stragglers observed in refuge.

E. Predacious Birds

Golden Eagles began drifting back to winter quarters from their summer habitat in the badlands and prairies to the north by October 4th. Four to six usually winter at Lacreek where they do appear to take a few waterfowl or pheasants though losses are not serious. A local farmer relates an interesting story of finding a crippled eagle in his hen house in 1946 where it was found devouring a domestic fowl. The bird was captured and released near a prairie dog colony about $\frac{1}{2}$ mile from the farm buildings. Here it remained the rest of the summer, feeding on the rodents without once offering to return and molest poultry at the nearby farm.

Individual eagles do become game killers on occasion but usually in areas where cover is lacking we have never considered the few Golden here a serious nuisance.

Bald Eagles - A few solitary birds observed occasionally, sometimes a pair noted. A winter migrant and resident. After many years of watching eagles - we are unable to surmise where the inspiration was derived for the "bolt from the blue" description in a well known poem. Although eagles have been observed to drop briskly on occasion their usual clumsy flapping efforts to seize prey leads to speculation how the species have survived.

Snow Owl - This species has descended from the north again for the first time since 1950-51. Some 4-5 individuals are believed to be wintering on the refuge and a few stragglers are noted on nearby farm lands. Do not appear to be molesting our wintering waterfowl to any extent.

Crows - A few noted wintering this season. Usually move southward from this territory during average winter.

Rough-legged Hawk - Wintering at refuge in some numbers. Common winter resident.

Marsh Hawk - Small number wintering at refuge.

F. Fish

Principal species in refuge waters are,

Yellow Perch	common to abundant
Large M. Bass	common locally numerous about dams
Bullheads	moderate numbers
Shiners	abundant
Suckers	common
Green Sunfish	common

Water conditions have been reasonably favorable this summer and fall and no serious losses noted. We are still free of carp so far as is known, though probably destined for eventual infestation by one means or another. Scores of dead carp are noted annually around our Pelican - Cormorant colony but all bird carried specimens are apparently killed shortly after ingestion or our pools would have become infested long ago.

III. REFUGE DEVELOPMENT AND MAINTENANCE

A. Physical Development

1. Approximately 11 miles of the refuge and adjacent County road systems were elevated by grader and dragline through cooperative agreement with the county Highway Dept. The old grades had deteriorated or sunk and were subject to snow drifting or breakup of low spots in spring.

2. The Refuge phone line was checked and repaired between headquarters and Martin exchange. 75 new poles were set as replacements.

3. Approximately 1000 cu. yds. of Brule Clay fill excavated and placed on dike system for spot repairs.

4. Dismantled the "22" caterpillar, and R,D,-7 caterpillar tractors for major overhaul.

5. Moved Road Ripper from Horicon Refuge to Lacreek

6. Routine servicing, repairs to major, minor equipment including the 5 trucks, farm tractor, mowers, etc.

7. Excavated channel at Elm Creek inlet for release of water to pool A.

8. Mowed approximately 20 miles of roadways, and dikes.

9. Installed approaches to new trans-refuge grade as required.

B. Plantings

1. Aquatics and marsh plants (inactive this reporting period)

2. Trees & shrubs (inactive this period)

3. Upland Herbaceous plants (inactive this period)

4. Cultivated Crops - A hundred acre field was fallowed and seeded to wheat to provide goose pasture. Considerable blowing was experienced on the eastern half of this unit and it will be necessary to restore this unit to grass or adopt strip cropping. The western half of the unit has a fair stand of new grain which will provide an excellent goose banding site this spring.

C. Collections

1. Seed or other propagules, 500 lbs. of Wheat Grass seed were collected by combining. It is planned to plant this stock together with shipped in seed as part of our spring S & M program.

2. Specimens - none

D. Receipts

Crested Wheat grass - 750 lbs, Medicine Lake, Refuge
Sweet Clover Seed - 780 lbs. Mud Lake, Refuge

The above amounts of seed were requested and received for range and cover development in connection with our S & M program.

IV. ECONOMIC USE OF REFUGE

A. Grazing

Five of the old approved grazing units have been operated again this fall and an additional area was established inside dike 6 and bordering pool No. 9 on the east.

Length and intensity of grazing season vary according to type of vegetation and season. As a rule, not more than 450-500 cattle are distributed simultaneously over the entire acreage authorized for grazing. The bottomland or tall grass units are grazed moderately and short grass units are given light to moderate use.

The writer's observations of relationship of grazing of wildlife refuge areas are summarized in a very general way as follows.

Surface-feeding Waterfowl - moderate grazing beneficial as means of suppressing overly heavy or tall grass cover and providing "bunchy" or uneven nesting cover near shallow pool margins.

Diving Ducks - moderate grazing of pool margins of uncertain benefit, heavy grazing of pool margins adverse.

Curlews - Shorebirds - moderately heavy grazing of bottom lands beneficial.

Upland Game Birds - Light grazing not detrimental if suitable areas of brush, i.e., draws, etc. fenced. Moderate or heavy grazing detrimental, especially where covers on grazing unit are unfenced.

B. Haying

There was good demand for hay during the season, particularly from the smaller operators with limited hay meadows.

Three approved haying units were mowed and stacked again this year and a new area was cleaned on the flats adjoining pool 5

363.92 tons of hay were harvested with total revenue amounting to \$ 657.26.

Rates are set currently at \$ 2.00 per. ton, for cleared units previously mowed and \$ 1.00 per. ton for newly approved units where some mixture of weeds remain.

C. Fur Harvest

Fur trapping operations were started in November. A single permit was issued to a long-time permittee with the option of hiring up to 4 assistants. Virtually all operations were wound up by January 1.

Trapping weather was generally excellent this fall but operations were limited by the small Muskrat population.

Summary of Fur Take

	Total	Refuge Share	Trappers Share
Muskrat	369	184	185
Mink	21	11	10
Skunk	7	-	7
Beaver	5	2	3
Raccoon	30	-	30
Weasel	3	-	3

V. FIELD INVESTIGATION OR APPLIED RESEARCH

Initial report of field investigations by Mr. Merrill Hammond and the writer, covering marsh management and waterfowl nesting studies have been submitted under separate cover, together with water management plan for 1954

VI. PUBLIC RELATIONS

A. Recreational Use

It is estimated that some 1,000 persons visited the area during the past year for fishing at pool 10, hunting at the Little White River zone, and picnicing. The No. 10 pool was opened in mid-December and has attracted the largest number of visitors.

It is estimated that the following man days of recreational use were accumulated this season.

(Lacreek and Little White River)
 Hunting - 1,000 - man days
 Fishing - 4,000 - man days
 Other(picnicing) 500 - man days
 (view refuge, etc)

Lacreek - probably 1,000 vistors during year, including those using fishing zone.

Bear Butte
 Fishing, picnicing - 7,500 - man days

Bear Butte probably 2,000 ind. visitors during year

Total, Lacreek, Bear Butte 14,000 man days,

B. Refuge Visitors

Official visitors included the following this period:

<u>Name</u>	<u>Organization</u>	<u>Purpose of visit</u>
Chair T. Rollings	Fish & Wildlife Service	Refuge inspection
Bob Johnson	State Game Dept.	Courtesy call
Albert Hamilstrom	S.C.S.	Refuge soils survey
Clair Olson	S.C.S.	Refuge soils survey
Ray Moore	County Weed Board	Weed Inspection
Floyd Wiedemeyer	Bennett County Ag. Agent	Crop Suryey & soils.
A. N. Engelbert	State Game Warden	Fish removal & enforcement

Numerous - unregistered visitors also called to view the refuge, waterfowl concentrations, bird watching, etc.

C. Refuge Participation

Bird notes have been submitted regularly to the Audubon Regional reporters, Mr. & Mrs. Gammell and to the South Dakota ornithological society.

The following motion pictures were exhibited to local organizations and schools since September 1st.

Hunting the Puma
 Haunts for the Hunted
 Alaska's Fisheries and Fur Seals
 The Woodcock

Meetings of the local Rod & Gun Club have been regularly attended by refuge personnel, with the exception of one session when emergency work intervened. This local sportsmen's group recently gave the present refuge fishing policy an endorsement by resolution and vote of approval, recommending that the existing winter season be continued with no extension of privileges asked.

Christmas Week Bird Count.

Lacreek National Wildlife Refuge, Martin (Bennett Co.), So. Dak.

Same area as previous years, marsh and reservoir, 45%; meadow, 45% willow thickets, 10%. Clear at start, becoming partly overcast later in day, temp. 25 to 44, wind SSW, 2 to 15 m.p.h. Ground bare except traces snow in shaded areas. Pools frozen except few small open areas. Channels below spillways open. One observer, total hours 7, three on foot, four by car, total miles, 27, 2 on foot, 25 by car.

Mallard	15,247
Shoveller	2
Bufflehead	2
Am. Goldeneye	72
Am. Merganser	4
Am. Rough-legged Hawk	9
Marsh Hawk	4
Bald Eagle	1
Prairie Falcon	1
Ring-necked Pheasant	185
Horned Owl	1
Snowy Owl	1
Red-shafted Flicker	2
Downy Woodpecker	2
Horned Lark	3
Am. Magpie	3
Black-capped Chickadee	3
House Sparrow	4
Brown Creeper	1
W. Meadowlark	1
Am. Goldfinch	2
Am. Tree Sparrow	143
Lapland Longspur	27

Totals noted during Christmas Bird Count,
23 species, 15,720 individuals.

Seen in area during week, Canada Goose, 13, Golden Eagle, 1,
Short Eared Owl, 1.

D. Hunting

Duck hunting success was limited by the mild, sunny weather prevailing throughout the fall. Average autumn weather here confines most waterfowl gunning to the early morning hours or the few cloudy, stormy days we usually have at this season when brief cold waves sweep through the area. The bulk of the waterfowl hunting here is done by local residents who slip out to the White River Public Shooting Grounds or adjacent cornfields for some early morning shooting before going to work. The mild, sunny afternoons are not conducive to hunting success since the birds do not move out until after sunset. This will account for scarcity of "last hour" shooting data from this area since average fall weather tends to concentrate gunning in the early morning hours.

Number Hunter Bag Checks,	Waterfowl taken	Crippling loss
186	308 (ducks)	64 (ducks)
Average waterfowl bag per hunter	1.65 birds,	1 (goose)
Average crippling loss per hunter	.34 birds,	
Species composition of bags checked (308 ducks)		
Mallard	209	.68%
Pintail	8	.03%
Baldpate	1	.003%
G.W. Teal	34	.11%
Scaup	7	.02%
B.W. Teal	7	.02%
Redhead	29	.09%
Canvasback	9	.03%
Ringneck	4	.01%

Crippling Loss (A.M. 43), (P.M. 7), & (last hour 14), one goose was lost in A.M. hunting west of refuge.

Only limited numbers of geese moved through here in fall, and the flocks which stop appear extremely wary and are favored by the open water and terrain in avoiding hunters. We did not happen to check any hunters with geese in possession but from conversation in the field, learned that an estimated 50-75 geese were taken in the local territory. (Mostly White-fronts.)

E. Fishing

Winter ice fishing opened on December 18th, on our pool 10 when the ice became sufficiently thick to support fishermen.

Success was somewhat limited at first though the catch has increased slowly as ice and weather conditions improved. Fair catches of Perch and Bass are now being taken though not approaching last years phenomenal luck, when everyone pulled out limit strings, day after day.

F. Violations

Although a heavy work schedule was in progress through the fall, effort was made to keep one man on patrol as frequently as possible. The rather light, scattered hunting in the refuge patrol territory limited potential violations. Licenses, stamps and gun plugs were checked at intervals, but hunters in the refuge patrol zone were apparently expected to be checked and appeared to be complying with regulations.

State Wardens also patrolled the boundaries and outlying fields where shooting occurred and reportedly checked in a few late shooters.

VII. OTHER ITEMS

The results of our 1953 weed control program are summarized in the interest of the Service.

From July 2, to August 5, approximately 200 acres of Sow Thistle were treated by ground spraying equipment, using 2-4, D Ester diluted 1-23 and applied at the average rate of 1 lb. acid equivalent per. acre. The spray was applied by fire tank unit mounted on a Jeep, towed by a wide-track "22" Caterpillar where marshy conditions prevented truck operation.

A 90 % kill was sustained by this operation. Wilting of foliage and early blooms were noted within 2 hours after spraying.

Cost of the ground spraying operation was as follows;

Time of W.A.E. & Refuge personnel	\$ 300.00
Travel- obtain 2-4, D spray	20.00
Chemical, 2-4,D spray	243.10
Spraying Unit (cluster head, jet nozzle)	41.50
Total	\$ 604.60

Total cost of \$604.60 or \$3.02 per. acre.

On August 6-7th, 150 acres of Sow Thistle were sprayed by plane at a cost of \$1.40 per. acre, of \$210.00, to treat inaccessible areas of the pest plant in areas inaccessible by ground spraying equipment.

Chemical was applied at the rate of 3/4 lb. acid equivalent per. acre. Results were estimated at 75-80 % kill, with an interesting degree of wilt or shrivelling of rosetts which appeared to destroy much of the developing seed. These plane treated areas were late blooming patches which appeared out in the swamps after we had completed ground operations. Plane spraying is efficient for treatment of such inaccessible areas but when the pest plant is mixed or shaded with cattail or slough grass, a greater percentage of young ground developing plants are missed, unless a very heavy concentration of chemical is used.

We also sprayed patches of Sow Thistle among trees and shrubbery about our display pool with hand spray units at a total cost of \$84.70. An amine spray was used which required frequent "repeat" treatments on undetermined small acreage to eradicate the plant here.

We might add that the acid equivalents cited for the ester 2-4, D were the general average used. We did some limited experimentation up to 2 lbs. application per. acre, on patches sheltered by heavy overgrowth. This attained a near 100 % kill in such areas but we found that this tended to kill allover vegetation and make cost excessive for general application.

Amine spray was found much less potent than Ester form. Wilt appeared 6 to 24 hours later than effects of the ester form, which were noticeable within 2-3 hours after application.

The $\frac{1}{2}$ to $\frac{3}{4}$ application recommended for treatment of farm crops in not quite adequate for swamp spraying. An application of 1 to $1\frac{1}{2}$ lbs. acid equivalent per acre is recommended for sow thistle treatment here.

We also recommend treatment of the plant at the earliest stage possible rather than awaiting the bud state when early flowering heads may escape to form seed.

Ester spray was found to be reasonably safe for application near trees if no wind prevailed at time of application, or wind direction was favorable to prevent drift onto trees.

We also noted that spray definitely appeared to wither developing seed though some weed control students assert that the seed will remain viable.

Ester spray was effective in rainy weather if heavy rain did not occur within 3-4 hours, according to our observations.

(OTHER ITEMS)

A training meet of the Tuthill village and Refuge Ground Observers Posts was conducted at the station office on December 9th with S/Sgt. Roberts of the North Platte Filter Center presiding.

The Bear Butte Easement Refuge was inspected and maintenance work performed on fencing and signs as required.

This area was closed to winter ice fishing for protection of trout at the recommendation of local State authorities and interested fishermen. Negotiations for the transfer of this area to the state are temporarily stalemated. Local Rod & Gun Clubs are actively circulating petitions to have the Ft. Meade surplus land transferred to the state through the Fish & Wildlife Service, following which they plan to ask for continuance of negotiations on Bear Butte Lake.

*Noted
WSP*

The lack of a photographic section is regretted and a suitable collection of refuge snapshots will be added to the following report.

Respectfully submitted

January 15, 1954
(date)

Kenneth Kummer
Refuge Manager

Approved:

KW Kummer

W A T E R F O W L

REFUGE Lacreek National Wildlife

MONTHS OF August TO December, 1953

(1) Species	(2) Weeks of reporting period									
	Aug. 16-22 1	Aug. 23-29 2	Aug. 30 Sept. 5	Sept. 6 4 12	Sept. 13 5 19	Sept. 20 6 26	Sept. 27 7 3	Oct. 4-10 8	Oct. 11-17 9	Oct. 18-23 10
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada								100	200	200
Cackling										
Brant										
White-fronted							100	1,000	1,500	2000
Snow							7	24	24	24
Blue										
Other										
Ducks:										
Mallard			3,000	3,000	8,000	8,000	8,000	10,000	15,000	20,000
Black										
Gadwall			2,000	2,000	5,000	5,000	5,000	3,000	3,000	5,000
Baldpate			200	200	500	1,000	1,000	3,000	3,000	3,000
Pintail			3,000	3,000	4,000	4,000	5,000	6,000	6,000	6,000
Green-winged teal			500	500	500	500	500	1,000	1,000	1,000
Blue-winged teal			5,000	6,000	8,000	3,000	3,000	200	100	
Cinnamon teal										
Shoveler			1,000	2,000	2,000	2,000	5,000	5,000	3,000	3,000
Wood										
Redhead			200	200	200	200	200	200	1,000	2,000
Ring-necked								100	100	
Canvasback			200	200	200	200	200	200	500	3,000
Scaup			12	12	12	50	50	50	3,000	3,000
Goldeneye										
Bufflehead										
Ruddy			200	200	500	1,000	500	500	500	200
Other										
Coots:					500	500	500			

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Cont. NR-1
(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE Macreek National Wildlife

MONTHS OF August

TO December, 1953

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen : total	
	Oct. 24-31 11	Nov. 1-7 12	Nov. 8-14 13	Nov. 15-21 14	Nov. 22-28 15	Nov. 29-Dec. 5 16	Dec. 6-12 17	Dec. 13-20 18			
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada	300	300	300	500	500	300	250	500	23,100		
Cackling											
Brant											
White-fronted	2000	2500	500						63,700		
Snow	24	24	24	14	14	14			180		
Blue											
Other											
Ducks:											
Mallard	30,000	40,000	35,000	25,000	25,000	25,000	20,000	15,000	1,904,000		
Black											
Gadwall	3,000	2,500	2,500						261,800		
Baldpate	2,000	1,500	1,000						114,730		
Pintail	3,000	2,000	1,000						300,300		
Green-winged teal	1,000	1,000	500						55,500		
Blue-winged teal											
Cinnamon teal											
Shoveler	4,000	8,000	3,000	2	2	2	2	2	265,600		
Wood											
Redhead	2,000	3,000	2,000						77,000		
Ring-necked											
Canvasback	3,500	3,000	1,000	1	1	1			77,000		
Scaup	4,000	4,000	2,500	1	1	1	1	1	115,500		
Goldeneye	500	500	500	200	200	150			60,760		
Bufflehead	1,500	1,000	1,000	50	50	1	1	1	27,972		
Ruddy	200								26,586		
Other											
Am. Merganser			50	100	100	100			1,596		
Coot:											

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans	est.	est.	
Geese	86,980	2,800	
Ducks	5,265,244	70,000	
Coots	10,00		

SUMMARY

Principal feeding areas _____

Principal nesting areas _____

Reported by _____

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

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.
- (2) Weeks of Reporting Period: Estimated average refuge populations.
- (3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.
- (4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (5) Total Days Use: A summary of data recorded under (3).
- (6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.
- (7) Total Production: A summary of data recorded under (4).

Interior Duplicating Section, Washington, D. C. 37944

1953

3-1751

Form NR-1A

(Nov. 1945)

MIGRATORY BIRDS

(other than waterfowl)

Refuge Laoreek Nat'l WildlifeMonths of September to December 1953

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. <u>Water and Marsh Birds:</u>										
Western Grebe	scattered birds observed over lakes through early autumn.									
Pied-billed Grebe	scattered birds observed over lakes through early autumn.									
White Pelican	Observed to mid-October.									
D.C. Dormorant	observed to mid-October.									
Great Blue Heron	observed in small numbers through fall to early November.									
Black C. Night Heron	observed in flocks of 30-40 around control gates during early fall.									
Snowy Egret	2 8-25-53									
American Bittern	occasional birds observed through early fall.									
Sandhill Crane	150	10-1-53	3-400	10-10-53	100	10-21-53				

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. <u>Doves and Pigeons:</u> Mourning dove White-winged dove	last observed October 4, 1953				
IV. <u>Predaceous Birds:</u> Golden eagle Duck hawk Horned owl Magpie Raven Crow Prairie Falcon Bald Eagle	1	10-4-53	4-6	12-31-53	wintering scattered individuals present in refuge groves present - small numbers wintering observed occasionally from 1 - 2 birds noted weekly, wintering
Reported by.....					

INSTRUCTIONS

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

3-1752
Form NR-2
(April 1946)

UPLAND GAME BIRDS

1613

Refuge Lacreek Nat'l Wildlife Months of September to December, 19453

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'd.	Estimated Total	Percentage	Hunting	For Re- stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Ring-necked Pheasant	4,600 acres, marsh meadow, brush & sweet clover thickets.				3 M, 2 F				6,500	Hunting season effected limited removal as weather too warm, dry for successful gunning and birds did not leave refuge.
Sharp-tailed Grouse	" " "								100	At low point of a population cycle
Hungarian Partridge	An infrequent straggling covey.									

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

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

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

3-1753
Form NR-3
(June 1945)

BIG GAME

Refuge Lacreek Nat'l Wildlife Calendar Year 1953

(1) Species	(2) Density	(3) Young Produced	(4) Removals				(5) Losses			(6) Introductions	(7) Estimated Total Refuge Population		(8) Sex Ratio
			Hunting	For Re- stocking	Sold	For Research	Predation	Disease	Winter Loss		At period of Greatest use	As of Dec. 31	
Common Name	Cover types, total Acreage of Habitat	Number								Number	Source		
Mule Deer	Sweet clover, Willow thickets	5									15 - 20	15-18	1 M, 3 F
White-tailed Deer	" " " "	2									3 - 4	3	1 M, 2 F

Remarks: Straggling individuals, small bands noted over refuge past two years

Reported by _____

INSTRUCTIONS

Form NR-3 - BIG GAME

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

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

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

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

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

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

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

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

116000

3-1755
Form NR-5
(April 1946)

DISEASE

Refuge Lacreek National Wildlife

Year 1945

Botulism

Lead Poisoning or other Disease

Period of outbreak.....

Kind of disease... Sarcocystis rileyi (?)

Period of heaviest losses.....

Species affected Mallard D.

Losses:

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

Number Affected	Actual Count	Estimated
Species		
<u>1</u>	<u>1 bird</u>
.....
.....

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

Number Recovered... 1 bird

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

Number lost... 1 bird shot

Source of infection... unknown

Areas affected (location and approximate acreage).....

Water conditions... Good

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

Food conditions... Good

Conditions of vegetation and invertebrate life.....

Remarks... A solitary Mallard infected with the sporozoan cysts of Sarcocystis was examined at refuge laboratory.

Remarks.....

Refuge Lacreek National WildlifeYear 194 5 53

Species	Relative Abundance	Sport Fishing		Commercial Fishing		Restocking		Number removed for Restocking
		Man days Fishing	Number Taken	No. of Permits	Pounds Taken	Number Stocked	Area Stocked	
L. M. Bass	Common	est. 1500	est 2,000				Little White	est. 5000
Perch	Abundant	est. 2,000	est 4,000				River pool	
Bullhead	Common	est. 500	est 500				State waters	2,500

REMARKS:

A limited stock of bass was planted in Little White River pool and remainder stocked in State Waters. Probably 2,500 man-days sport fishing for bass, perch and bullheads during winter and spring seasons for those species.

3-1757
Form NR-7
(April 1946)

PLANTINGS
(Marsh - Aquatic - Upland)

Refuge Lacreek National Wildlife Year 1945

Species	Location of Area Planted	Rate of Seeding or Planting	Amount Planted (Acres or Yards of Shoreline)	Amount & Nature of Propagules	Date of Plant- ing	Survival	Cause of Loss	Remarks
								Inactive except for limited ornamental planting about headquarters

TOTAL ACREAGE PLANTED:

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

CULTIVATED CROPS

Refuge Lacreek National Wildlife Year 1953

Permittee (If farmed by refuge personnel, so indicate)	Permit No.	Unit or Loca- tion	Crops Grown	Avg. Yield per Acre	Permittee's Share		Government's Share or Return				Compensatory Services, or Cash Revenue
					Acres	Bu. Har- vested	Harvested		Unharvested		
							Acres	Bu.	Acres	Bu.	
Palmer, V. L.	4998	C-1 & C-3	Barley	20	80	1600	-	-	6	120	
			Oats	30	115	3450 cut for hay.	-	-	35	1050	
			Corn	30	30	900 cut for ensilage	-	-	33	990	
Shabal, Robert R.	4999	C-2	Barley	8	-	-	-	-	20	160	
			Wheat	12	60	720	-	-	-	-	

Summary of Crops Grown:	Crop	Acreage	Permittee's Share		Government's Share		Total Revenue	
			Acres	Bushels	Harvested Acres	Bu.	Unharvested Acres	Bu.
Interior Duplicating Section, Wash. D. C.	Barley	106	80	1600	-	-	26	280
	Oats	150	115	3450 hay	-	-	35	1050
	Corn	63	30	900 ensilage	-	-	33	990
	Wheat	60	60	720	-	-	-	-

DIRECTIONS FOR PREPARING FORM NR-8
CULTIVATED CROPS

Cultivated Crops Report Form NR-8 should be prepared on a calendar-year basis for all crops harvested or utilized during the calendar year and submitted with the December 31 refuge report.

Permittee - List each permittee separately. If lands of the refuge are farmed by refuge personnel or hired labor, this should be indicated in the Permittee column.

Permit No. - List the number of the Special Use Permit issued to the individual.

Use or location - The Unit No. or name specified in the Economic Use Plan should be listed in this column.

Crops Grown - A separate line of the form should be used for each crop grown by each permittee or by refuge personnel. This is important, since if each crop grown by each operator is not specifically enumerated, the report will be of no value for statistical purposes.

Average Yield per Acre - It is important that the average yield per acre of each crop grown by each operator should be shown.

Permittee's Share - Only the number of acres harvested or utilized by the permittee for his own benefit should be shown under the Acres column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the Bushels Harvested column. It is requested that all crops harvested be reduced to bushels wherever possible, or, as in the case with the harvesting of seed such as that of sweet clover, alfalfa, bromegrass, etc., the total harvested crop in pounds may be shown. Timothy, alfalfa, or other hay harvested by the permittee should be shown on Form NR-10 and should not be shown in the Permittee's Share column.

Government's Share or Return - Harvested - Show the number of bushels harvested for the Government and the acreage from which this share is harvested, both for grain raised by refuge personnel and by permittees. Unharvested - show the exact number of acres of crops allowed to remain unharvested as food and cover for wildlife. An estimate of the number of bushels of grain that is available for the wildlife in such unharvested crops should be shown in the Bushels column.

Compensatory Services, or Cash Revenue - Show other services received by the Government in cooperative farming activities, the number of acres of food strips planted for wildlife, the amount of wildlife crops not otherwise reported that are planted by cooperators for the Service, or the cultivation of wildlife plantations. If the permit is on a fee basis, the total cash revenue received by the Service.

REFUGE GRAIN REPORT

Refuge Lacreek National WildlifeMonths of September through December, 195 3

(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
Wheat		8	8					8		8	
* Barley		100	100					100		100	

(8) Indicate shipping or collection points Lacreek Refuge, Martin, South Dakota(9) Grain is stored at Refuge Headquarters Grainery(10) Remarks * Obtained from Sand Lake for baiting at banding stations.

*See instructions on back.

(10) Remarks

NR-8a

(9) Grain is stored at

REFUGE GRAIN REPORT

(8) Indicate shipping or collection points

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.

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Variety	On Hand Beginning of Period	Received During Period	Total	Grain Disposed of			On Hand End of Period	Proposed or Available Use		
				Disposed	Seeded	Feed		Seed	Feed	Surplus
(1)	(2)	(3)	(4)	(5)			(6)	(7)		

Refuge

Months of September through December, 1921

REFUGE GRAIN REPORT

3-1759
Form NR-9
(April 1946)

COLLECTIONS AND RECEIPTS OF PLANTING STOCK
(Seeds, rootstocks, trees, shrubs)

Refuge Lacreek National Wildlife Year 195 3

Species	Collections				Receipts		Total Amounts on Hand	Amount Surplus
	Amount	Date or Period of Collection	Method	Unit Cost	Amount	Source		
Crested Wheat Grass	500 lbs.	Sept. 1953	Combining	4 ¢ est.	750 lbs.	Medicine Lake Refuge	1250	0
Sweet Clover					780 lbs.	Mud Lake Refuge	780	0

3-1760
Form NR-10
(April 1946)

HAYING AND GRAZING

Refuge Lacreek National Wildlife

Year 19 53

Permittee	Permit No.	Unit or Location	Actual Acreage Utilized	Animal Use Months	Tons of Hay Harvested	Period of Use From - To	Rate	Total Income	Remarks
HAYING Fall, 1953									
Eby, John	20508	H-1 & H-1A	50	-	27.68	- -	\$2.00	\$ 55.36	
Kocer, John	20509	H-5	50	-	42.67	- -	2.00	85.34	
Palmer, V. L.	20510	H-2	80	-	51.84	- -	2.00	103.68	
Shebal, Robert R.	20507	RG-1	220	-	139.95	- -	2.00	279.90	
					70.58	- -	1.00	70.58	New unit with old hay and weeds in hay.
Wallingford, Ed	20511	H-3	35	-	31.20	- -	2.00	62.40	\$37.40 to be collected
HAYING TOTAL								657.26	
GRAZING, Spring '53									
Palmer, V. L.	4997	RG-2	1000	115.11	-	Feb. 1-Mar. 31 1953	\$1.50	172.76	
Richards, Anna	5016	G-2	640	73.00	-	Aug. 1, 1952 - Feb. 28, 1953	1.50	109.00	
Ward, Hazel	5020	RG-1	1000	514.31	-	Sept. 10, 1952 - Feb. 28, 1953	1.50	772.01	
								1053.77	Total Spring grazing
GRAZING, Fall, 1953									
Heese & Wallingford	20506	G-6	120	243.65	-	Aug. 16-Nov. 30 '53	\$1.50	365.46	
Keegan, Leo	20505	G-4	1000	322.97	-	Aug. 16-Dec. 31 '53	1.50	484.46	\$384.46 to be collected
Kingsbury, Archie	20502	G-3	650	305.46	-	Aug. 4-Dec. 23, '53	1.50	458.20	53.91 to be collected
Palmer, V. L.	20501	G-5 & G-5A	1000	292.61	-	July 23-Dec. 31 '53	1.50	438.91	129.71 to be collected
Richards, Anna	20504	G-2	640	224.64	-	Aug. 12, 1953 - Feb. 28, 1954	1.50	336.96	60.00 to be collected
Ward, Hazel	20503	RG-1	1000	655.20	-	Aug. 16, 1953 - Feb. 28, 1954	1.50	982.80	192.00 to be collected
								3066.79	Total Fall grazing

Totals:

Acreage grazed <u>4,410</u>	Animal use months <u>2,674.68</u>	Total income Grazing <u>4,120.56</u>
Acreage cut for hay <u>435</u>	Tons of hay cut <u>363.92</u>	Total income Haying <u>657.26</u>