LAKE ANDES NATIONAL WILDLIFE REFUGE

LAKE ANDES, SOUTH DAKOTA 57356

NARRATIVE REPORT

January 1 through December 31, 1972

PERMANENT PERSONNEL

Ralph F. Fries....transferred 09/16/72..... Refuge Manager
Alfred L. Radtke..... Ass't Refuge Manager
Harry T. Stone..... Ass't Refuge Manager
Derald V. Florey..... Maintenanceman
William C. Bair..... Area Biologist
Hugh E. Cosby..... Range Ecologist
* Ejner Frandsen.....EOD 08/20/72..... Medium Equipment Operator
* Helen L. Coler.....EOD 11/12/72.....Clerk-Typist

* Converted from temporary full time to permanent part time (78 hours)

TEMPORARY PERSONNEL

Albert Ridgway....transferred 07/09/72..... Laborer
Leon Kirchhevel..... 05/01/72-11/25/72..... Laborer
John Fuchs..... 05/01/72-11/25/72..... Laborer
Michael Ackerman..... 07/24/72-08/25/72..... Laborer
William Ryan..... 05/30/72-09/01/72..... Laborer
Dennis Konechne..... 05/01/72-10/28/72..... Laborer
Robin Adam..... 06/19/72-08/16/72.....NYC Typist

Alfred Radtke

William Bair

Hugh Cosby

Harry T. Stone

Ejner Frandsen

Helen Coler

Derald Florey

CONTENTS

NARRATIVE REPORT

I. GENERAL

A. Description of the Area

The Lake Andes Wetlands District includes twenty counties in southeast South Dakota. These counties are bordered on the east by the Minnesota-South Dakota line and on the west and south by the Missouri River (Figure I).

The Wetlands District can be divided into two land use types. The eastern part of the district is intensively farmed, the crops being row crops and small grain. The western part is mainly mixed grass prairie consisting of hayland and pasture.

The western part of the district lies in the Missouri Coteau while the eastern part lies in the James River Valley.

B. Status of Acquisition

1. Fee Title Program

The Huron Wetland Office is responsible for the purchase of land in all the counties in this district.

The goal for fee title land in this district is 20,400 acres. The cummulative optioned acres to date for this district are 12,179.35.

2. Easement Program

This small Wetlands District has easements in 18 of the 20 counties under its jurisdiction. Due to high land values in the southeastern part of the district and payment ceilings on acreage under easements, there have been no easements taken in Lincoln and Union Counties. The total acres under easement for this district total 470,197.49. Of this, 66,404 are wetland acres.

LAKE ANDES WETLAND DISTRICT

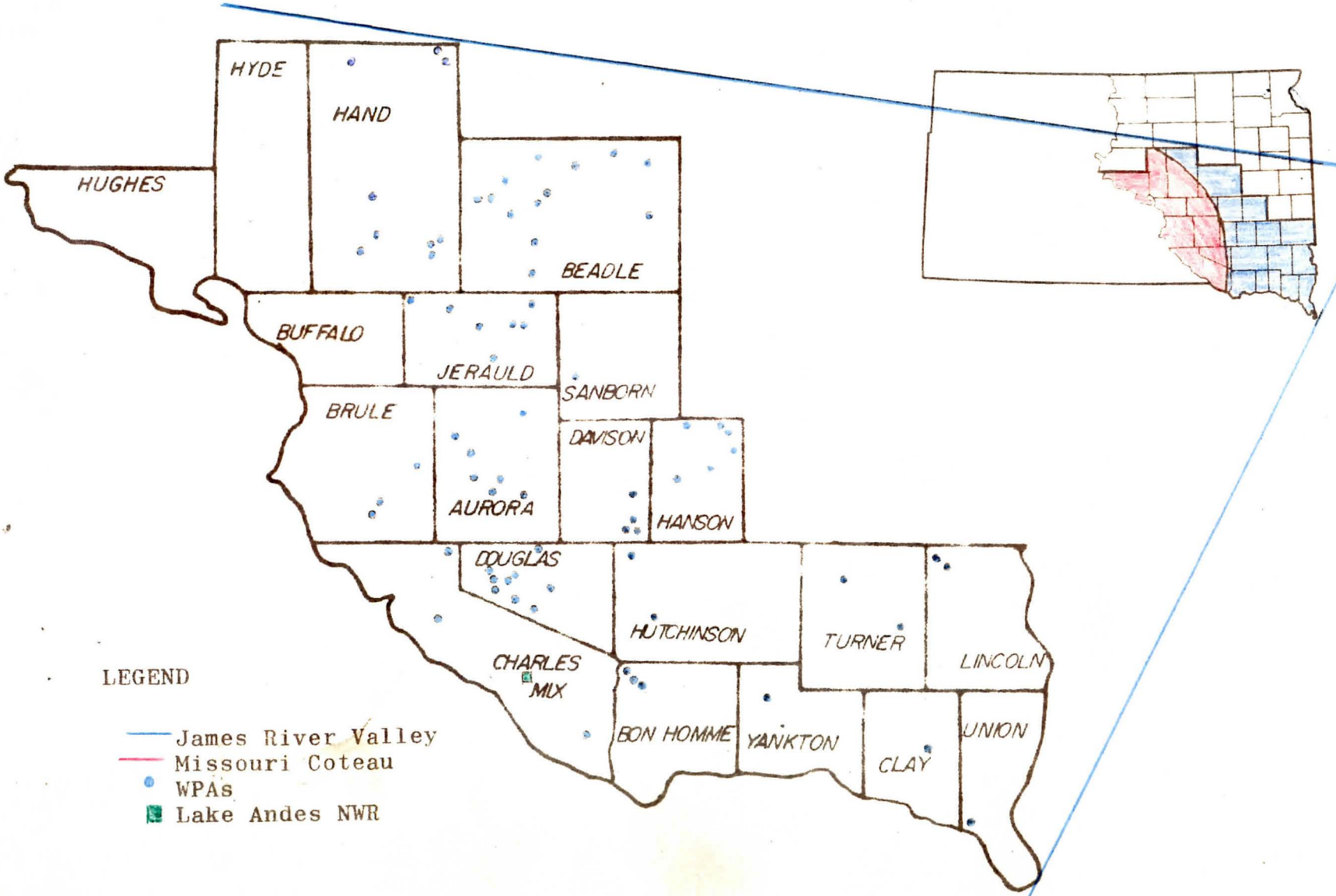


TABLE I

Growth of the Small Wetland Program
(in thousands of acres)

Year	Fee Title	Easement (Total acres)
1963	.8	6.2
1964	2.6	108.8
1965	4.8	212.1
1966	6.8	259.9
1967	8.5	294.7
1968	11.0	365.4
1969	7.0	364.2
1970	9.4	421.8
1971	11.0	435.5
1972	12.2	470.2
1976	20.4	608.0

TABLE II

Acquisition Status of Fee Title and Easement Land

County	No.Mgt. Units	Acres	Number Easements	Wetland Acres	Total Acres Easements
Aurora	9	1,926.14	160	6,655	49,796.62
Beadle	15	2,875.09	173	10,065	68,307.54
Bon Homme	4	648.83	6	152	840.09
Brule	3	1,073.55	122	8,428	52,895.37
Buffalo	-	-	6	837	4,613.73
Charles Mix	5	576.91	95	3,789	26,365.29
Clay	1	40.00	1	7	80.74
Davison	4	224.52	4	118	710.11
Douglas	9	1,406.41	69	2,409	16,253.72
Hand	11	1,238.25	199	12,178	100,898.03
Hanson	6	709.13	74	2,219	16,683.95
Hughes	-	-	4	257	1,652.78
Hutchinson	2	180.00	20	593	3,668.38
Hyde	-	-	90	7,304	56,735.38
Jerauld	7	670.40	76	3,260	23,814.29
Lincoln	2	177.22	-	-	
Sanborn	2	93.00	156	7,917	45,975.47
Turner	2	218.30	4	93	486.00
Union	1	100.00	-	-	-
Yankton	1	21.60	3	123	420.00
	84	12,179.35	1,262	66,404	470,197.49

C. Weather Conditions

January - March

January and early February had below normal temperatures. The year started with approximately six inches of snow on the ground. All snow had melted and run off into the sloughs by March 1st in the southern part of the district. Water conditions were fair to poor.

April - June

Little moisture was received in early April and dust storms were common. The north portion of the district had fair moisture conditions. Rains started in late April and it rained and rained and rained.....

July - September

.....and it continued to rain. Temperatures were below normal throughout the summer. Rains finally tapered off in mid-August but the potholes remained in excellent condition.

October - December

Slightly above normal amounts of moisture were received during this period. Waterfowl Production Areas remained in excellent condition. Carry-over water should make spring water conditions above normal in 1973.

TABLE III

Weather Data

	Precipitation			
Month	Armour	Miller	Alexandria	Pierre
January	.48	.41	.01	.43
February	.87	.52	.41	.50
March	.77	.43	.56	.95
April	2.96	1.67	2.13	2.03
May	7.08	5.71	8.58	5.77
June	5.01	.74	2.71	2.43
July	4.64	3.44	3.78	4.79
August	1.39	1.05	.99	.64
September	.73	.08	1.36	.01
October	1.67	2.18	1.68	1.65
November	1.15	1.07	1.90	.46
December	1.91	.75	.67	1.12
TOTAL	28.66	18.05	24.78	20.78
Normal	21.22	18.56	20.30	16.27

Temperatures

Month	Armour Max.	Armour Min.	Miller Max.	Miller Min.	Alexandria Max.	Alexandria Min.	Pierre Max.	Pierre Min.
January	46	-31	47	-30	41	-29	44	-27
February	62	-15	48	-15	47	-15	57	-10
March	69	-03	65	-09	64	-06	73	-06
April	84	20	71	20	77	23	74	20
May	89	33	90	28	88	33	90	28
June	92	43	90	40	90	44	94	40
July	94	45	92	45	92	47	99	44
August	98	48	99	45	97	48	104	48
September	95	34	95	33	95	32	97	36
October	84	14	81	16	81	15	82	15
November	61	12	51	12	63	13	56	13
December	62	-16	52	-20	61	-17	55	-16

D. Habitat Conditions

1. Water

Approximately 20% of the WPAs contained water in January, 1972. By March 1, all the snow had melted and the potholes were at low water levels in the south portion of the district. The north part of the district had fair water conditions in March.

In late April, the rains came. Moisture conditions improved and were above normal the rest of the summer. The summer, until mid-August, was classified as cool and wet. Many farmers could not get into the fields because of the excess moisture.

Approximately 90% of the WPAs held water long enough to bring off broods to flight stage. Snow and rain in November increased fall water levels. This together with the wet summer permitted the district to enter 1973 with excellent water conditions. 80% of the WPAs contained moisture at the years end.

Welker WPA (Hanson County) - Spring of 1972, Radtke, 5/72, 72-1

2. Food and Cover

Early in the year Waterfowl Production Areas provided excellent winter and escape cover for resident wildlife. Winter wildlife losses were minimal. Available food was no real problem with the open winter. Harvested corn fields and food plots were primary food supplies.

The wet spring made farming difficult and above normal cover was available on private land for nesting. Excellent nesting cover was also available on the majority of Waterfowl Production Areas where use reservations had expired and the vegetation had recovered. Wildlife inventories run on newly acquired WPAs pointed out the need for good cover before wildlife would use the area (see Section V. for more details). New areas provide little cover because of intensive farming and overgrazing. After being acquired, grasslands are rested to increase plant vigor. After the plants have regained their strength other management practices can be used to improve the species composition and vegetative cover.

Agricultural land not used for block-type tree plantings and food plots was reseeded for cover. A total of 62 acres was seeded to native grass. We continued to refine seeding techniques in an attempt to improve the "catch" of the natives. Success in the past has been poor. Approximately 497 acres were seeded to dense nesting cover (DNC), a mixture of sweet clover-alfalfa and tall wheatgrass. This mixture provides excellent nesting cover after becoming established.

Dense nesting cover on the Andreson WPA (Beadle County).
Radtke 5/72, 72-2

Twenty-five food plots were planted during the summer. Many types of wintering wildlife made use of these plots. Block-type plantings of trees totaling 41.5 acres were planted in the spring. These trees will provide excellent protection from heavy snow and high winds. Many berry and fruit producing tree species are included for wildlife food. The food plots are planted on the south and east sides of the tree plantings. When possible the food plots are placed between the trees and the marsh so that upland birds can drift with storms to cover.

Two old shelterbelts were reclaimed by winter cutting. The old belts provide little understory for wildlife cover. New sprouting is started by cutting the trees off approximately four feet above the ground. The fallen tree also provides good cover. Pheasant, rabbit, dove and deer use of the reclaimed belts was excellent. Usually about one-half acre of trees is cut; all in one area to provide a brush pile and to let the sun in for regrowth.

Cottontail use of a reclaimed shelterbelt.
Hohn WPA (Hutchinson County), Radtke, 3/72, 72-3

Mechanical disturbance of sod-bound areas was completed during the fall of 1971 and the results were encouraging. It is strictly a matter of setting back succession. Annual weeds and sweet clover seem to respond best to the disturbance.

The field cultivator (duck foot) was used to complete the operation (except on the Shull WPA ((Beadle County)) which was disced twice). The major drawback to the cultivator was that the ground was left in a very rough condition. In order to smooth out the lumps more operations would be needed which would increase costs.

Another problem with disturbance can be the fact that you have no control of the plant species that will come back. In most cases we got a dense rank cover that appeared to be excellent for Wildlife cover and nesting plus providing weed seed for feed. However, if for example the original plant cover was mainly bromegrass the most you could expect would be healthy bromegrass mixed with a scattering of sweet clover and annual weeds. In 1972, the Lake Andes District used total renovation of areas by plowing and reseeding to get the growth form we desired.

Marsh habitat was excellent this year. Early summer waterlevels provided good conditions for emergents and submergents. These aquatics provided ample escape cover and food for marsh animals.

II. WILDLIFE

A. Migratory Birds

1. Waterfowl (Anseriformes)

Pintails were noted in the district on February 28. The snow was gone and most of the ice had broken up by mid-March. Ducks were migrating through the district during late March and early April. WPAs did provide resting areas for waterfowl as water levels were fair during March and April. Observations included: March 13th, Koupal WPA (Charles Mix County), 3000 ducks and 200 geese; Hohn WPA (Hutchinson County), 1000 ducks and 100 geese; DeCook WPA (Douglas County), 1000 ducks: March 30th, Rogers WPA (Beadle County), 1500 ducks; Roth WPA (Bon Homme County), 3000 ducks. A breeding pair count was conducted from May 23 to June 4th. A random sample of areas to be run was made in accordance with this station's wildlife inventory plan. Table V summarizes the data.

TABLE V
Breeding Pair Count

Species	Dubes Douglas County	Reed Beadle County	Sherman Chas.Mix. County	Star Douglas County	Koupal Chas.Mix County	Boosma Beadle County
Mallard			4	4	2	2
Gadwall		1		2		1
Ruddy				4		3
Shoveler	3		1	3		2
Pintail	1			2		2
Redhead			1	5		5
BW Teal	10	6	13	27	6	20
TOTAL	14	7	19	47	8	35

Calculated pairs are derived by counting actual pairs and lone males as pairs.

The technique used in conducting breeding pair counts is taken from Hammond's Waterfowl Breeding Population and Production Surveys, with field data recorded on form 4.1. Brood counts were not conducted during the year; however, the estimate of waterfowl production on WPAs was compiled in the following manner: the productivity rate was estimated from state breeding pair and brood count data. The figure received was 45%. There was a total of 130 pairs on six WPAs inventoried. Using the productivity rate of 45% this would give 59 pairs that brought off broods. The average brood size in Hammond's brood/pair index is 6. Thus 6 times 59 would give 354 young produced on these six WPAs. The WPAs inventoried have a total of 350 wetland acres. There was a total of 4,973 wetland acres in the district as of September 1. By using the formula:

$$\frac{\text{Production inventoried (354)}}{\text{Total production (X)}} = \frac{\text{Wetland acres checked (350)}}{\text{Total wetland acres (4,973)}}$$

$$X = 5{,}030 \text{ total duck production}$$

This compares to an estimated 2,823 ducks produced in 1971. A portion of the large change in production can be attributed to the change in water conditions. In addition, the wetland acres are increasing as more land is purchased. Total production of fee areas and easement wetlands was estimated at 40,000.

Early fall migrants began arriving in the district during late August. Waterfowl utilized WPAs throughout the fall and into the winter where water was available. Approximately 80% of the district's WPAs held water by late fall. The fall migration use was above average on WPAs because of the high water levels. However, the fall flight through the district was less than spectacular.

2. Water and Marsh Birds (Gaviiformes, Ciconiiformes, Colymbiformes, Gruiformes, Pelicaniformes)

Black-crowned night herons, green herons and great blue herons are found throughout the district.

Sandhill cranes were seen during the spring and fall migration periods. Principle migration periods occurred during the first week of April and the first week of October. White pelicans were observed passing through the district during migration.

3. Shorebirds, Gulls and Terns (Charadriiformes)

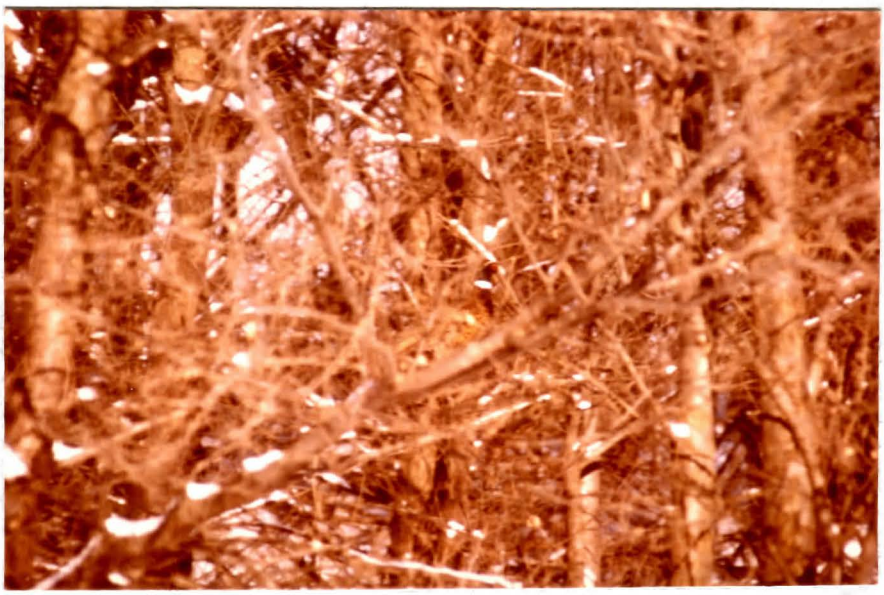
Killdeer and upland plovers reproduce and are common throughout the district. Major movements of lesser yellowlegs, phalaropes, avocets and Franklin's gulls were noted during late April. Willets and Hudsonian godwits were observed on WPAs during the spring migration.

4. Doves (Columbiformes)

Mourning doves were present on all WPAs in the district. Many doves nest in shelterbelts and fields on the WPAs. The old shelterbelts that were reclaimed by cutting had heavy nest concentrations.

B. UPLAND GAME BIRDS (Galliformes)

Ring-necked pheasants are present on most WPAs in the district. Winter concentrations are approximately the same as observed during the winter of 1971-72. Heaviest concentrations are located on WPAs in Beadle and Douglas County. Populations remain good to excellent in the southwest portion of the district and continued to increase in the north central area. Winter kill usually does not effect the southern region as much as the northern thereby bringing about the difference in numbers. Several WPAs in Douglas and Charles Mix Counties had wintering populations ranging from 200-400 pheasants.



Pheasant numbers remained high throughout the district.
Radtke, 8/72, 72-5

Prairie chickens and sharp-tailed grouse are found primarily in the western part of the district along the Missouri River. Grouse use of WPAs is only accidental and occurs usually during fall and spring movements. Bob-white quail and Hungarian partridge are present in the district but none were noted on WPAs this year.

C. OTHER BIRDS (Falconiformes, Strigiformes, Passeriformes)

Marsh hawks, red-tailed hawks, sparrow hawks and rough-legged hawks are frequently seen on district WPAs. Great horned owls are also common. The abundant food source draws these birds to WPAs. Major hawk migration occurred during the first week of April. Prairie falcons, burrowing owls and short-eared owls can be seen occasionally in the district, especially in the western portions.

Bald and golden eagles are common winter residents in the southern part of the district. Charles Mix County has one of the largest wintering concentrations of eagles in the Midwest. More than 100 eagles winter near Fort Randall Dam. Numbers continue to decrease year by year. Eagles use the southern portion of the district during their feeding flights. Eagle use days on WPAs were estimated at 350.

TABLE VI

Christmas Bird Count
Lake Andes District

Year	No. Species Observed	No. Individual Birds Observed
1965	40	108,325
1966	49	158,139
1967	52	171,290
1968	24	47,078
1969	57	104,723
1970	40	155,032
1971	45	41,020
1972	34	115,141

D. BIG GAME ANIMALS

White-tailed deer are the only big game normally found on the WPAs. All WPAs probably have deer use during some period of the year. However, WPAs noted for deer use include: Dubes (Douglas County), Koss WPA (Brule County), Shull WPA (Beadle County), and Sherman WPA (Charles Mix County). Seven deer were noted on Sherman WPA on February 15.

E. FUR ANIMALS, PREDATORS, RODENTS AND OTHER MAMMALS

White-tailed jack rabbits and cottontails are found throughout the district. Cottontails have increased on areas where shelterbelts have been reclaimed. Muskrats increased on WPAs this year because of the high water levels. WPAs noted for mink and muskrat trapping include:

Schaefer WPA (Bon Homme County), Roth WPA (Bon Homme County), and Bauer WPA (Beadle County).

Raccoons and skunks are found throughout the district. General observations indicate that the fox population is increasing in the south and central portions of the district. Coyotes continue to be common in the western and southern part of the district.

F. RARE, ENDANGERED AND STATUS UNKNOWN SPECIES

Nothing to report

G. FISH

Few fish are present in the potholes of the district. The Delger WPA (Hanson County) is the only area that receives heavy fishing pressure.

H. REPTILES AND AMPHIBIANS

Leopard frogs are found in abundance in most potholes throughout the district.

I. DISEASE

Nothing to report

II. DEVELOPMENT AND MAINTENANCE

A. PHYSICAL DEVELOPMENT

1. Fencing

All fencing was completed by refuge personnel this year. The approximate cost of fencing was $1000 per mile which includes materials and labor.

TABLE VII

Fencing on WPAs

County	WPA	Miles Completed	Date Completed
Beadle	Glanzer	1.1	06/15/72
Bon Homme	Hieb	0.5	09/26/72
Bon Homme	Schaefer	0.3	09/27/72
Brule	Stanek	0.4	11/01/72
Charles Mix	Green	0.7	11/15/72
Douglas	Somek	0.4	08/24/72
Hand	Treichler	1.5	07/14/72
*Hanson	Delger	0.6	05/16/72
Hanson	Schneider	1.1	06/01/72
Union	Collar	1.8	08/10/72
	Total	8.4 miles	

* 0.3 miles was woven wire on Delger

Fencing continues to be an essential part of the management program in the Lake Andes WMD. No fencing is done that is not needed. For example, where cattle trespass is not a problem such as along roads, fences are not constructed. Fences are being built to manage some of the larger native grass areas by grazing, especially where other management tools are impractical. Approximately 30.2 miles of fee title land were posted. A sign was posted on the average of every 60 rods as well as at the corners and gates.

2. Clean-up on Waterfowl Production Areas

Clean-up was completed on five WPAs. This included burying of old building sites, trash piles and rock piles. The WPAs completed included Somek WPA (Douglas County), Plooster WPA (Douglas County), Koss WPA (Brule County), Novotny WPA (Charles Mix County), and Humphrey WPA (Aurora County). Approximately $1,200 was spent in contracting heavy equipment.

3. Other Developments

Drainage ditch plugs were constructed or repaired on:

Boggs (1)	Hanson County
Hohn (1)	Hutchinson County
Plooster (1)	Douglas County
DeCook (1)	Douglas County

No brood ponds were constructed in 1972 because of the wet conditions. The value of the existing ponds was probably less this year as most water levels were high. However, a wet year in the district is an exception to the normal.

B. PLANTINGS

1. Aquatic and Marsh Plants

None this year

2. Trees and Shrubs

Eight block-type tree plantings were completed on five WPAs the spring of 1972. The rows were 20 feet apart. Trees were spaced from 4-8 feet in the row, depending on the species. Tree planting was done by refuge personnel with Bureau equipment.

The seed beds were well prepared for the block-type plantings. Red Cedar planting was reduced again this year because of the poor survival. Species planted included: green ash, choke-cherry, crab, Siberian elm, Hansen rose, hackberry, honey-suckle, apricot, mulberry, native plum, Russian olive, black walnut, cotoneaster and caragana.

TABLE VIII

Tree plantings on WPAs

County	WPA	Acres	Number of belts
Beadle	Rogers	9.5	2
Brule	Koss	15.7	2
Charles Mix	Sherman	9.1	2
Douglas	DeCook	2.0	1
Hutchinson	Hohn	5.2	1
	Total	41.5	8

No replanting was done on recently planted belts this year. It was found that waiting until the trees are two years old before replanting makes the job easier as the gaps are more noticeable.

Cultivation ranging from 1 to 3 operations continued on the 14 previously planted belts and the new belts. Belts that are 4 years old or older are cultivated once to keep the soil from becoming sod bound and to provide dusting areas for birds.

Grape vines were established on the following WPAs for wildlife use: Hohn (Hutchinson County) and Plooster, Korevaar, Star and Somek (Douglas County).

3. Grasslands

Two areas totaling 62 acres were seeded to native grass. The native grass seed used included green needle, big bluestem, little bluestem, switch, western wheat, sideoats grama, slender wheatgrass and Indian grass. The seeding rate was set by using the Soil Conservation Service "Guide to Seeding Rates". The soil types of the two areas varied greatly causing a difference in seeding rates and species used. In the past this method of planning had not been used and success of the districts seedings were poor. Hopefully, the added planning plus refining of seeding methods will help our native grass "catch".

Dense nesting cover was seeded on 11 WPAs this year. Total acreage seeded was 497 acres. The general mixture consisted of 4.0 pounds of tall wheat grass, 0.5 pounds of sweet clover and 1.5 pounds of alfalfa per acre. Sweet clover grows so well in the district that it has caused a poor catch of alfalfa and wheatgrass. Therefore, the amount of sweet clover seeded per acre has been reduced.

Six of the WPAs where DNC was seeded this year were newly acquired areas. The seeding was done by permittees in conjunction with an oats crop. The other five WPAs were older areas and poor quality cover was replaced by DNC. On the old WPAs late summer plowing was worked and seeded down in the fall. This method has been the most successful for the costs involved.

There is some "volunteer" from the previous cover but we feel this adds to the variety of habitat available.

Crested wheatgrass was replaced by dense nesting cover on the Sherman WPA (Charles Mix County).
Radtke 8/72, 72-5

TABLE IX

1972 Grassland Seeding Summary

County	WPA	Acres Seeded	Seeding Mixture	Seeded by
Aurora	Humphrey	72	DNC	Cooperator
Aurora	Scott	12	DNC	Bureau
Beadle	Bauer	142	DNC	Cooperator
Beadle	Rogers	46	DNC	Cooperator
Bon Homme	Hieb	15	DNC	Cooperator
Charles Mix	Sherman	19	DNC	Bureau
Douglas	DeVelder	17	DNC	Bureau
Douglas	Plooster	80	DNC	Cooperator
Douglas	Star	4	DNC	Bureau
Hand	Lingeman	19	Native Grass	Bureau
Hutchinson	Hohn	85	DNC	Cooperator
Union	Collar	43	Native Grass	Bureau
Yankton	Diede	5	DNC	Bureau
	TOTAL	559		

C. CULTIVATED CROPS

1. Food Plots

Cultivated crops were grown on WPAs to provide nurse crops for dense nesting cover and to provide food plots for wildlife. Cultivated crops used in conjunction with dense nesting cover were grown under cooperative farming agreements. The permittee received 100% of the oats crop in return for planting the cover. The seed was provided by the Bureau. Four WPAs had share-crop type food plots and four WPAs had contracted food plots. In addition, 14 other food plots were planted on 9 WPAs by Bureau personnel. Food plot size is being increased to supply food for growing pheasant populations on some WPAs. Food plot yield was below average because wet weather caused poor soil conditions and late crops.

Four rows of corn were alternated with four rows of milo on all food plots put in by Bureau personnel. ~~Radtke~~ Stone 8/72, 72-6

TABLE X

Food Plots Planted in 1972

County	WPA	No. Plots	Acres	Planted by	Crop
Aurora	Humphrey	1	12.0	Sharecrop	Millet
Beadle	Andresen	1	4.0	Contract	Corn
Beadle	Bauer	1	17.0	Sharecrop	Milo
Beadle	Rogers	3	3.0	Contract	Corn
Beadle	Shull	2	10.0	Sharecrop	Corn-milo
Brule	Koss	3	13.1	Bureau	Corn-milo
Charles Mix	Koupal	1	3.0	Bureau	Corn-milo
Charles Mix	Novotny	1	4.0	Bureau	Corn-milo
Charles Mix	Sherman	2	2.9	Bureau	Corn-milo
Douglas	DeVelder	3	7.1	Bureau	Corn-milo
Douglas	Korevaar	1	0.7	Bureau	Corn-milo
Douglas	New Holland	1	4.0	Bureau	Corn-milo
Douglas	Somek	1	2.1	Bureau	Corn-milo
Douglas	Star	1	4.0	Bureau	Corn-milo
Douglas	Plooster	1	10.0	Sharecrop	Milo
Hutchinson	Hohn	1	40.0	Contract	Milo
Turner	Peterson	1	3.0	Contract	Corn
	TOTAL	25	139.9		

D. COLLECTION AND RECEIPTS

1. Seed or Other Propagules - None to report.

2. Specimens - None to report.

3. Building Disposal

Buildings sold on WPAs during 1972 include:

Bauer WPA	Beadle County	3 buildings	$ 115.00
Korevaar WPA	Douglas County	7 buildings	247.00
Stanek WPA	Aurora County	7 buildings	878.00
		TOTAL	$1,240.00

E. CONTROL OF VEGETATION

Low volatile 2, 4-D was the only chemical used to control weeds in this district. South Dakota has eight primary noxious weeds and these are the only ones controlled. Canada and musk thistle are the primary target. Spraying is only done on WPAs with chronic weed problems or on request. Only one complaint was received this year.

Weed control activities decreased this year. Approximately 22 acres were sprayed in 1972 compared to 42 in the district in 1971.

TABLE XI

Summarizes the districts weed control program in 1972

County	WPA	Target	Acreage
Aurora	Maine	Canada thistle	.2
Bon Homme	Hieb	musk thistle	.5
Bon Homme	Hieb	musk thistle	2.0
Charles Mix	Koupal	musk thistle	.2
Clay	Anderson	Canada thistle	6.0
Douglas	Star	musk thistle,Russian knapweed	.2
Hanson	Boggs	Canada thistle,musk thistle	.2
Jerauld	Kraft	Canada thistle,musk thistle	.3
Lincoln	Atkins	Canada thistle,leafy spurge	6.0
Turner	Peterson	Canada thistle	3.0
Lincoln	Freese	Canada thistle	.2
Turner	Plucker	Canada thistle,leafy spurge	.1
Union	Collar	Canada thistle	.1
Yankton	Diede	Canada thistle,musk thistle	3.0
		TOTALS	22.0

Weed control by spraying was completed on shelterbelts again this year. Simazine was applied during the fall. In-row weed control with simazine was good to excellent in 1971. Increased growth and 25-40% better seedling survival has encouraged us to continue spraying.

Results of simazine use on young shelterbelts
Radtke 6/72, 72-7

F. FIRES - None to report.

IV. RESOURCE MANAGEMENT

A. GRAZING AND HAYING

Native grass management has been a recognized problem in Lake Andes WMD. How to best manage the grasses for wildlife and for plant communities themselves continues to pose many questions.

Evidence indicated that in the majority of the cases extended non-use of natural plant communities was not the answer. Invaders (especially Kentucky bluegrass) moved in creating competition and caused heavy mulch build-up. The native grass areas we receive on newly purchased WPAs are heavily over-used. The composition and vigor of the native grasses is usually poor. Rest of such areas for 2 or 3 years is beneficial but most of our areas began deteriorating following a few years of rest resulting in "bluegrass slicks". By 1972 some of the WPAs had lain seven years in non-use. It was decided to try to improve the poor habitat by active management.

Three tools-fire, grazing and haying were considered. Firebreaks, distance to travel with uncertain weather and the amount of manpower needed discouraged the use of fire. However, two areas were proposed to be burned in May. The spring and early summer were so wet that all attempts failed at even getting a fire to burn on the proposed areas. We still feel fire has a place in native grass management. Fire is used each year on Lake Andes NWR and the results in 1972 were excellent. However, WPAs do have unique problems which makes fire more difficult to use.

Three WPAs were selected for grazing. The Welker WPA (Hanson County) and the VanZee WPA (Douglas County) were grazed using rates and dates furnished by Range Ecologist Hugh Cosby. The Roth WPA (Bon Homme County) was intentionally over grazed to retard Kentucky bluegrass growth, utilize standing mulch and expose the crowns of native plants to sunlight. Exclosures were constructed in the Welker and VanZee tracts. Grazing dates and rates were as follows:

Roth WPA	May 1-May 31	21 AUMs	15 acres upland
VanZee WPA	May 1-June 15	34 AUMs	42 acres upland
Welker WPA	May 4-May 31	11 AUMs	26 acres upland

The idea in the Roth WPA case was to remove excess mulch to release the warm season native grasses, promote plant succession and to restore cover of any kind. We felt that the job done was successful in that the above goals were met. However, how long the benefits will remain is unknown. We would hope that the above treatment would only be needed every 3 to 5 years depending on the mulch build-up.

Bluegrass "slick" on the Roth WPA (Bon Homme County)
Note draw at left of picture. Radtke 3/72, 72-8

Roth WPA with mulch removal in progress. The draw is in the middle of the picture. Radtke 5/72, 72-9

Roth WPA one week after cattle have been removed. The draw is in the middle of the picture.Radtke 6/72,72-10

Roth WPA ten weeks after mulch removal.
The picture is taken from the water's
edge shooting back up the same draw. Radtke 8/72, 72-11

This method is not without sacrifice. There probably was no nesting in 1972 and the effect on the native cool season grasses is unknown. Yet we felt our goals were met and judged the experiment as a success. Continued observation of the Roth area will help us decide how successful it really was.

The Welker WPA made the most impressive showing. It had excellent remnants of many native grasses and forbs. However, Kentucky bluegrass was present and it was decided to start grazing the area lightly in the spring of 1972. The WPA had been fenced in mid-summer of 1971.

The Welker WPA (Hanson County) shown on 8/29/72 ~~and~~ after being grazed in May of 1972. Radtke 8/72, 72-12

The warm season grasses responded with the help of above normal moisture. Removal of grass was much lighter than Roth and nests were located as grazing took place. The difference in plant response was very apparent between the exclosure and grazed area. Kentucky bluegrass dominated the aspect within the exclosure and added to the old growth canopy over the plant crowns. The grazed portion exhibited a wide range of climax plants.

The VanZee WPA had few remnants of warm season grasses or native forbs. Western wheatgrass and Kentucky bluegrass are the predominant species but big bluestem and others are occasional and have increased vigor if not in amounts. It apparently had been plowed many years ago. General observations indicated a release of native grasses from the heavy mulch. VanZee has a long way to go to get back in excellent condition. However, we have stopped the decline and are now improving the vigor and native plant composition.

Plans are to continue with a very flexible grazing program in the district. Grazing will only be used when needed and at the rates needed. Permittees are informed of the program and are aware it is on a year-to-year basis. Van Zee and Welker are intended to be managed under a flexible deferred rotational system. The method tried on Roth was an experiment for a practice that would have little administrative cost and minimal wildlife disturbance.

Haying was the other tool used to manage native prairie. Hay removal and mowing had to be done before July 15. This date was selected to maximize benefits for the warm season grasses. We felt with the date restriction and old dead grass that it would be difficult to get permittees. Therefore we only charged $1.00 per acre for the hay. We had no problem in getting permittees and now feel that the rates would need only a slight reduction from the normal price.

The three WPAs hayed off were in Beadle County (LeClaire, Ruppel and Reed). Observations indicate that the haying operation did an adequate job of mulch removal. How much the invaders were set back will have to be judged in the future. Warm season grass response on Reed was excellent. LeClaire and Ruppel did not respond like Reed. Possible reasons are soil type, the lack of remnant plant species present, and less food reserves in the roots of the surpressed plants.

Bluegrass "slicks" typically found on our WPAs after several years of non-use. Reed WPA (Beadle County) Radtke 10/72, 72-13

Reed WPA in November after being hayed in July. Warm season grasses have responded to mulch removal. Radtke 11/72, 72-14

It was concluded that haying could be used as a tool in the Lake Andes WMD. The haying operation would be used every 3-5 years on an area depending on the situation. Rotating the haying operation by blocks is another possibility. In this way portions of the WPA would be hayed each year.

Haying has its problems like all the other management tools. However, a July operation permits much of the nesting to be completed and there is fall regrowth for the spring. Wildlife has a choice of cover selections when herbage removal is rotated by years and/or seasons.

All of the tools mentioned have advantages and disadvantages. We feel that the different tools can be used to fit each situation. Native grass management is behind in the district so it will take a few years to catch up. However, we do not look at this management problem as unsurmountable. The experiments conducted this year, opened up new avenues of thought for the station's personnel. The conclusions were derived by comparing control and managed areas on the same WPA. Since the above observations are not backed by major studies or statistics anyone is welcome to visit the areas and draw their own conclusions.

Total haying revenue for 1972	$115.00
Total grazing revenue for 1972	$202.04

B. FUR HARVEST

All WPAs are open to trapping. No information is available on numbers of species taken. However, trapping pressure did increase over 1971 as fur prices increased significantly during the fall of 1972. Approximately 30% of WPAs have trapping use.

V. FIELD INVESTIGATIONS OR APPLIED RESEARCH

A. WILDLIFE MANAGEMENT STUDIES

There were no formal studies conducted on WPAs in 1972.

B. INFORMAL BIOLOGICAL ACTIVITIES

1. Evaluation of Brood Ponds

A five year evaluation of the brood ponds was initiated in 1969. Such data as brood use, vegetation present, vegetation succession and other wildlife use will be evaluated.

TABLE XII

Summarized brood use data for 1969-1972

Develop. Number	County	WPA			Number of Broods 1969	1970	1971	1972
1	Aurora	Maine	level ditch	50'x250/x4'	4	0	1	0
2	Aurora	Maine	dugout	60'x160'x10'	1	3	4	1
3	Aurora	Maine	brood pond	250'x250'x4'	0	2	3	4
4	Aurora	Maine	brood pond	250'x250'x4'	6	0	1	0
5	Chas.Mix	VanZee	brood pond	300'x400'x4'	15	6	13	6
6	Davison	Kurtenbach	brood pond	200'x300'x4'	0	3	3	0
7	Davison	Vogel	brood pond	300'x100'x4'	3	0	0	0
8	Douglas	Dubes	brood pond	450'x600'x4'	2	3	2	1
9	Douglas	New Holland	brood pond	400'x400'x4'	5	16	12	2
10	Douglas	Star	small pond	60'x60'x8'	2	1	1	1
11	Douglas	Star	brood pond	400'x400'x4'	10	0	14	1
12	Douglas	Star	level ditch	50'x250'x4'	0	0	0	0
13	Douglas	Star	stock dugout	60'x160'x8'	0	7	1	0
* 14	Douglas	DeVelder	brood pond	300'x400'x4'	-	-	3	2
* 15	Chas.Mix	Novotny	brood pond	300'x400'x4'	-	-	6	1
* 16	Douglas	DeCook	brood pond	300'x400'x4'	-	-	12	1
			TOTAL		48	41	76	20

* Ponds put in December, 1970.

Brood ponds received less brood use in 1972 than in any other year. Excellent water conditions caused the low use. The brood ponds do contribute wildlife benefits in wet year, however. For example, the islands created are nesting areas and the depressions open up the choking vegetative conditions of some wetlands. Duck broods were observed using the open areas and loafing on the islands along with other marsh birds such as black-crowned night herons. In summary, we continue to believe that brood ponds are an excellent investment in the Lake Andes WMD because of the marginal water conditions often experienced. In 1972, the ponds proved to have value in wet years also.

2. Wildlife Inventories on WPAs

In the spring of 1970 wildlife inventories were initiated on ten WPAs in the Lake Andes District. The inventories have been conducted each winter (January), fall (September), and spring (May) since that time. The counts are conducted on foot with the observers staying approximately 100 yards apart.

Data are recorded on field sheets. WPA header sheets are completed before each winter count to indicate management and habitat changes. District guidelines are reviewed before each count. These guidelines give definitions for each of the catagories listed on the header and field sheets.

Counts were conducted before the Bureau had actual land use rights of the land on several WPAs. For example, normal private farming practices were conducted on the Hohn WPA (Hutchinson County) for two years while inventories were being run. During 1972 this area was farmed and reseeded to cover. Populations are then being measured as developments are made.

Dam completed in 11/71 on the Hohn WPA (Hutchinson County) is a development that has reclaimed a marsh. Stone 3/72, 72-15

Cropland on the Hohn WPA will raise ducks now instead of corn. Stone 3/72, 72-16

TABLE XIII

Wildlife Inventories

		Spring Inventory (May)			Winter Inventory (January)	
	Species	Year 1970	Year 1971	Year 1972	Year 1971	Year 1972
DEVELDER WPA, Douglas County						
200 acres. Private land use expired 1/1/70. DNC & natives seeded 5/70. 9 acres trees planted 5/70. Food plots established 5/70 and continued each year. Brood pond dug 12/70	Waterfowl	49	104	78	0	0
	Songbirds	35	76	93	4	27
	Cottontail rabbit	0	3	0	0	2
	Raptors	0	1	3	1	1
	Pheasants	1	12	35	91	173
HOHN WPA, Hutchinson County						
160 acres. Private land use expired 1/1/72. Dam to raise water in main marsh built in fall, 1971. One acre old tree belt reclaimed winter, 1971. DNC and new treebelt planted 5/72. Food plot established 5/72	Waterfowl	0	8	40	0	0
	Songbirds	14	65	22	46	36
	Cottontail rabbit	0	0	5	0	0
	Raptors	2	0	1	0	0
	Pheasants	0	0	0	1	10
KOUPAL WPA, Charles Mix County						
160 acres. Private land use expired 1/1/66. Cover was established prior to 1970. Food plots planted 5/71 & 5/72. One acre of old treebelt reclaimed 11/70.	Waterfowl	19	27	114	0	0
	Songbirds	82	0	48	1	41
	Cottontail rabbit	1	1	7	2	1
	Raptors	2	2	1	3	3
	Pheasants	2	3	22	17	317
NOVOTNY WPA, Charles Mix County						
60 acres. Private land use expired 1/1/70. DNC seeded 5/70. 2 acres trees planted 5/71. Food plots planted 5/70 and continued each year. Brood pond dug 12/70	Waterfowl	0	17	8	0	0
	Songbirds	28	38	62	1	42
	Cottontail rabbit	0	2	8	1	1
	Raptors	0	0	1	0	0
	Pheasants	3	3	32	200	198
DECOOK WPA, Douglas County						
160 acres. Private land use expired 1/1/71. Brood pond dug 12/70. DNC seeded 5/71. Food plot planted 5/71. No food plot in 1972.	Waterfowl	60	60	387	0	0
	Songbirds	57	53	53	9	16
	Cottontail rabbit	0	0	0	0	0
	Raptors	1	0	0	2	1
	Pheasants	0	0	4	0	26

It is impossible to show all the data but I have included several examples showing current findings. A cross section of species was selected for comparison.

Inventory data has indicated several interesting points. Of course, wildlife use starts to increase as cover is returned to the area. Waterfowl populations often depend on water conditions but brood ponds and improved cover usually increase duck production and use days. Upland game and other animals are drawn to the food plots in the winter. The animals then disperse in the spring but a good breeding population usually stays on the WPAs as indicated by the data.

WPA food plot receive heavy pheasant use in the winter. Radtke 12/72, 72-17

The new shelterbelts planted since 1970 have had little influence on wildlife populations yet. However, reclaimed tree belts have especially increased cottontail and dove use. Reclaimed trees are trees that have matured and are being cut down and allowed to sprout back with new growth. This action makes the cover much more dense. The areas get heavy deer and pheasant use also. The doves appear to like the nesting conditions and the rabbits and deer eat the twigs of freshly cut trees and regrowth. Raptor use increases as development of the WPA progresses. More prey is available as wildlife population grow. Much of the winter raptor use is by eagles.

In general, we feel that inventories have provided us with an indication of what animals are using the WPA, numbers of individual animals, which cover provides the needs of the different species and the value of developments for wildlife.

VI. EASEMENT ADMINISTRATION

No easement checks were made this year. Violation rates in the past have been very low and general observations indicate this has not changed. Easement locations were brought up to date on township maps provided by the engineering section and were placed in a permanent and easily managed filing system.

VII. PUBLIC RELATIONS

A. RECREATIONAL USES

Fee area visitors were estimated at over 37,000. Pheasant hunter made heavy use of the WPAs. Duck hunter use was also up because of the water conditions. These factors along with the increase in WPAs caused the raise in use from approximately 30,000 visitors in 1971.

B. REFUGE VISITORS - See official visitor list

C. REFUGE PARTICIPATION

Mounted eagles were a major attraction during National Wildlife Week programs. Radtke 1972,72-18

1/18	Fries	Attended Lake Andes-Wagner Irrigation meeting at Huron
2/2	Fries,Stone	Attended public hearing on predator control at Sioux Falls, S. D.
2/18	Florey	Attended SCS meeting on soils at Wagner, S. D.
2/24	Radtke,Stone	Refuge tour for ecology class from USD/S
2/26	Fries	Refuge tour for wildlife students from SDSU
3/8	Fries	Slide talk to ecology class at Yankton College
3/8	Stone	Showed film to Rotary Club in Wagner
3/14	Stone	Refuge tour for Boy Scouts from Pickstown
3/20-27	Radtke,Stone	Gave 28 programs in 12 local schools for National Wildlife Week
3/28	Fries	Dell Rapids Sportsman Club (talk)
3/29	Stone	Refuge tour for Cub Scouts from Marty Mission
4/4-7	Radtke,Stone Fries	Attended Wetland meeting at Jamestown, N.D.
4/8	Radtke,Stone Fries	Attended Chapter Wildlife Meeting in Pierre,S.D.
4/12	Fries	Attended Inter-agency meeting at Pickstown, S.D.
4/18	Radtke	Gave program for Chapter Wildlife Federation meeting at Parker, S. D.
4/24	Radtke,Stone	Gave Refuge tour for Wagner grade school class
5/4	Radtke,Stone	Refuge tour for Fairfax grade school class
5/9	Radtke,Stone	Refuge tour for Armour grade school class
5/10	Fries	Refuge tour for Pickstown Girl Scout Troop
5/13	Fries	Attended Nature Conservancy meeting in Sioux Falls
5/15	Stone	Environmental Education Program on refuge for Lake Andes School group
5/18	Radtke,Stone	Environmental Education Program on refuge for Lake Andes School group
6/2	Stone	Give slide talk on eagles to Scouts at Camp-O-Ree at Pickstown
6/21	Cosby,Fries, Bair	Attended Grassland Tour at Wall, S. D.
7/6	Radtke,Ryan Ridgway	To public hearing about Missouri River goose refuge
7/10	Radtke, Stone Fries	Attended grassland tour put on by Cosby at Lake Andes
7/16	Stone	Environmental Education program for Pickstown Boy Scout Troop on refuge
7/17-21	Stone	(CSC) Supervision & Group Performance at Omaha
7/18	Radtke	Environmental Education program for Pease Creek Bible School
7/19	Fries	Attended Rural Development meeting at Armour
7/29	Fries,Radtke	Attended Wildlife Society Chapter meeting at Pickstown, S.D.
8/2-3	Radtke,Fries	Attended Central Flyway Council meeting at Watertown, S. D.
8/3	Stone	Environmental Education Program on Refuge for Cub Scouts from Marty Mission

9/12	Radtke,Stone	Law enforcement meeting with State personnel of Nebraska and South Dakota at Winner, S. D.
9/21	Radtke,Stone	Attended Dove Seminar at Brookings, S. D.
9/25	Stone	Environmental Education Program on refuge for Lake Andes Science Class.
9/27	Stone	Attended Fort Randall Interagency meeting at Pickstown.
10/9	Stone,Konechne	Environmental Education program for Lake Andes Grade School Class.
10/13	Cosby,Konechne	Grassland tour on refuge for Yankton College Ecology Class.
10/16-20	Coler	(CSC) Secretarial Techniques at Bismarck, N. D.
10/18	Radtke,Stone	Refuge tour for Armour 7th grade class.
10/18	Radtke	Program for Wagner J.C.
10/30	Stone	Slide talk for Marty Mission School
11/15	Stone	Showed film to 6th grade at Wagner Grade School
11/20	Radtke	Gave program to Veteran's Agricultural Class at Wagner, S. D.
11/29	Radtke	Showed film at Wagner Grade School.

D. HUNTING

Waterfowl hunting pressure was above average on the districts WPAs. Hunting success was considered to be fair. The Linn WPA (Jerauld County), Schaefer WPA (Bon Homme County), Roth WPA (Bon Homme County), and Glanzer WPA (Beadle County) were among the better duck hunting areas.

South Dakota dove hunters enjoyed another successful season. Dove populations were excellent throughout the district. However, future dove seasons were probably lost due to a public referendum that indicated approximately 70% of South Dakota's voters were against the dove season.

Pheasant hunting remained excellent in the southwest and north central portions of the district and continued to improve in the eastern portions of the state this year. Douglas and Beadle County WPAs were the best areas for pheasants. Many of the wildlife developments completed in these counties have favored high pheasant populations.

Hunting pressure continues to increase as the public hunting areas become better known. Many of the people now return each year to the same WPAs. Local people also are using the areas more as hunting becomes poorer on private land.

Deer hunting success was excellent during the East River deer season. Success was approximately 90%.

E. VIOLATIONS

DATE	NAME	VIOLATION	FINE/COSTS
10/1/72	Steven Perk	Illegal bird (redhead)	50.00
10/1/72	Richard Ogstad	No plug (illegal devise)	50.00
10/1/72	Alan Peters	Underage-no res.person along	pending
10/1/72	Darrell Link	Underage-no res.person along	pending
10/1/72	Mark Rabenberg	Illegal bird (redhead)	pending
10/1/72	Charles Kocer	Without valid license (no mig.bird or small game)	pending
10/1/72	George Reining	Illegal bird (redhead)	50.00
10/1/72	Randall Larson	Illegal bird (redhead)	50.00
10/7/72	Mark Noteboom	Illegal bird (redhead)	pending
10/7/72	Steve Hassler	No SD small game stamp	pending
10/7/72	Gaylon Rabenberg	No valid stamp	50.00
10/21/72	William Hoffman	Illegal bird (redhead)	50.00
10/21/72	Roy Rissky	Illegal bird (canvasback)	50.00
10/21/72	Michael Duggan	Illegal bird (canvasback)	50.00
10/23/72	Bertus Meyerink	Late shooting	34.80
10/24/72	Larry Reining	Wanton waste	50.00
10/25/72	Wayne Brown	Illegal bird (canvasback)	50.00
10/28/72	Dennis McDowell	Illegal bird (canvasback)	50.00
10/28/72	Donald Hladky	Illegal bird (redhead)	50.00
10/29/72	Steven Fisher	Illegal bird (redhead)	50.00
10/29/72	Clarence Mettler	Illegal bird (redhead)	50.00
12/7/72	Dan Svatos	Illegal devise (rifle at geese)	50.00

F. SAFETY

The Lake Andes District has an accident-free year even though we had seven temporary employees. Monthly safety meetings were held in conjunction with the local SCS.

G. REVENUE SHARING

A total of $7,213.58 was paid to counties under the Refuge Revenue Sharing Act in 1972.

COUNTY	PAYMENT IN 1971	PAYMENT IN 1972
Aurora	984.84	1,121.63
Beadle	1,074.20	1,494.39
Bon Homme	193.13	302.29
Brule	554.98	686.17
Charles Mix	301.93	301.93
Clay	60.00	60.00
Davison	195.90	195.90
Douglas	740.57	881.87
Hand	411.47	411.46
Hanson	361.66	531.44
Hutchinson	223.72	223.72
Jerauld	266.11	267.23

Lincoln	18.31	300.31
Sanborn	45.64	45.65
Turner	207.86	207.86
Union	-0-	167.48
Yankton	14.25	14.25
Totals	$5,654.57	$7,213.58

News releases were issued to county newspapers where the amounts justified recognition.

VIII. OTHER ITEMS

A. ITEMS OF INTEREST

Refuge Manager Ralph F. Fries returned "home" to North Dakota via a transfer to Devils Lake WMD. Ralph's knowledge of habitat manipulation for wildlife production had greatly influenced the Lake Andes WMD and the employees who worked for him.

Al Ridgway transferred to Squaw Creek NWR during the summer. Al's primary responsibilities were connected with the WPAs. His efforts and special interest in the wetlands program are missed.

Al Radtke with the able assistance of Clerk Coler wrote report. Clerk Coler also typed the report.

B. PHOTOGRAPHS

Photo credit is given under each photo.

SIGNATURE PAGE

Prepared by:

Alfred L. Radtke
(Signature)
Alfred L. Radtke

(Title)
Assistant Refuge Manager

Submitted by:

Date: June 7, 1973

Stephen S. Berlinger
(Signature)
Stephen S. Berlinger

Approved, Regional Office

Date: _____

(Title)
Refuge Manager

(Signature)

Wetlands Regional Office Supervisor

OFFICIAL VISITORS LOG
1972

1/13/72	Ron Schara & John Croft	Minneapolis Sunday Tribune	Newspaper article
1/21/72	Milo Daily	Yankton Press & Dakotan	Newspaper article
1/30/72	Refuge Open House	212 cars with 770 people	best ever
2/4/72	John Schmidt	Extension Biologist	
2/18/72	Al Sargent and Arie Kruse	BSFW, NPWRC	Pick up ducks for research
2/29/72	Grady Mann and Bob Panzer	Aberdeen Wetlands	Visit
4/27/72	Dick Hohn	Regional Office	Audit
5/11/72	Rick Jones	Nature Conservancy	Eagle Roost at Ft.Randall
6/5/72	John Carlsen	Regional Office	Inspection of NWR and WMD
9/15/72	Milo Daily	Yankton Press & Dakotan	Newspaper article

3-1979 (N
(9/63)

-Bureau of Sport Fi s and Wildlife

Refuge

ANNUAL REPORT OF PESTICIDE APPLICATION

Proposal Number | Reporting Year

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

Date(s) of Application	List of Target Pest(s)	Location of Area Treated	Total Acres Treated	Chemical(s) Used	Total Amount of Chemical Applied	Application Rate	Carrier and Rate	Method of Application
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
6/72-8/72	Canada thistle, musk thistle, Russian knapweed leafy spurge	WPAs located in Bon Homme, Aurora, Clay, Charles Mix, Douglas, Hanson, Jerauld, Lincoln, Turner, Union & Yankton	22.0	2,4-D	22# of acid	1# acid/acre	water	boom sprayer
11/72	All weeds in tree row	New shelterbelts located in Brule, Beadle, Charles Mix, Douglas and Hutchinson Counties and two belts planted in 1971 on Star & Novotny WPAs	50.0	Simazine	100# of acid	2# acid/acre	water	boom sprayer

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

35500

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

NONAGRICULTURAL COLLECTIONS, RECEIPTS, AND PLANTINGS (1)

Refuge Lake Andes WMD Year 19 72

Species	Collections and Receipts (Seeds, rootstocks, trees, shrubs)						Plantings (Marsh - Aquatic - Upland)						
	Amount (Lbs., bus., etc.)	(2) C or R	Date	Method or Source	Cost	(3) Total Amount on Hand	Location of Area Planted	Rate of Seeding or Planting	Amount Planted (Acres or Yards of Shoreline)	Amount and Nature of Propagules	Date	Survival	Cause of Loss
Assorted tree species	14,750	R				None	WPAs in Brule, Beadle, Douglas, Charles Mix & Hutchinson	4'-8' spacing between trees, 20' between rows	41.5 acres	14,750	5/72		

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

Total acreage planted:
Marsh and aquatic _____
Hedgerows, cover patches _____
Food strips, food patches _____
Forest plantings 41.5 acres

Remarks: _____

3-1
Form NR-5

DISEASE

Refuge Lake Andes WMD Year 19 72

Botulism

Period of outbreak none noted

Period of heaviest losses _____

Losses:

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

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

Areas affected (location and approximate acreage) _____

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

Condition of vegetation and invertebrate life _____

Remarks _____

Lead Poisoning or other Disease

Kind of disease none noted

Species affected _____

Number Affected Species	Actual Count	Estimated

Number Recovered _____

Number lost _____

Source of infection _____

Water conditions _____

Food conditions _____

Remarks _____

INT.-DUP., D.C.- 53818-59

3-1570
NR-88
(1/51)

REFUGE GRAIN REPORT

Refuge Lake Andes WMD Months of January through December, 1972

(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
None							None				

(8) Indicate shipping or collection points

(9) Grain is stored at

(10) Remarks

*See instructions on back.

REFUGE GRAIN REPORT

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

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

(1) List each type of grain separately and specifically, as flint corn, yellow dent corn, square deal hybrid corn, garnet wheat, red May wheat, durum wheat, spring wheat, proso millet, combine milo, new era cowpeas, mikado soy beans, etc. Mere listing as corn, wheat, and soybeans will not suffice, as specific details are necessary in considering transfer of seed supplies to other refuges. Include only domestic grains; aquatic and other seeds will be listed on NR–9.

(3) Report all grain received during period from all sources, such as transfer, share cropping, or harvest from food patches.

(4) A total of columns 2 and 3.

(6) Column 4 less column 5.

(7) This is a proposed break-down by varieties of grain listed in column 6. Indicate if grain is suitable for seeding new crops.

(8) Nearest railroad station for shipping and receiving.

(9) Where stored on refuge: "Headquarters granary," etc.

(10) Indicate here the source of grain shipped in, destination of grain transferred, data on condition of grain, unusual uses proposed.

INT.-DUP. SEC., WASH., D.C. 17065

3-17
Form NR-O
(Rev. Jan. 1956)

Fish and Wildlife Service — ich of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge **Lake Andes WMD** County **11 Counties in District** State **South Dakota**

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return Harvested		Government's Share or Return Unharvested		Total Acreage Planted	Green Manure, Cover and Waterfowl Browsing Crops Type and Kind	Total Acreage
	Acres	Bu./Tons	Acres	Bu./ Tons	Acres	Bu. /Tons			
Oats	440.0						440.0		
Millet	8.0				4.0		12.0		
Milo	71.0				107.3		178.3		
Corn	24.0				36.5		60.5		
								Fallow Ag. Land.	0

No. of Permittees: Agricultural Operations 23 Haying Operations 3 Grazing Operations 3

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	Grazing	Number Animals	AUM'S	Cash Revenue	ACREAGE
				1. Cattle	59	66	$202.04	83
				2. Other				
				1. Total Refuge Acreage Under Cultivation				690.8
Hay - Wild		115.0	$115.00	2. Acreage Cultivated as Service Operation				0

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

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

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

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

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

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

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

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

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

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

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service Regional Information

Lake Andes National Wildlife Refuge
Lake Andes, South Dakota 57356
September 15, 1972

Radtke - 487-7603

BUREAU OF SPORT FISHERIES AND WILDLIFE

FOR IMMEDIATE RELEASE

FREE HUNTING GUIDES AVAILABLE

Do you need a good place to hunt this fall? The U. S. Bureau of Sport Fisheries and Wildlife announced that the new 1972 Hunting Guide Maps are now ready for distribution to South Dakota sportsmen.

These hunting maps identify approximate locations of 425 wetland areas that have been purchased with Federal Duck Stamp funds. The waterfowl production lands are important for our migratory waterfowl as nesting, feeding, and breeding areas. All of these wetland areas are located east of the Missouri River. Through development for waterfowl, other upland game such as pheasant and deer have benefited, offering excellent hunting opportunities.

Schools also can make good use of the Waterfowl Production Area Maps. The geology of the prairie pothole country is told as well as man's attempt to manipulate the land for economic reasons. Land abuse has led to the present efforts for prairie restoration and preservation.

Sportsmen will find the map particularly useful in the field, since colored illustrations of both diving and puddle ducks are provided to aid in identification. Free guides are available by writing or visiting Lake Andes Refuge, Box 396, Lake Andes, South Dakota.

- 30 -

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service Regional Information

Lake Andes National Wildlife Refuge
Lake Andes, South Dakota 57356

Radtke 487-7603

BUREAU OF SPORT FISHERIES AND WILDLIFE

For Immediate Release

COUNTY RECEIVES CHECK FROM BUREAU OF SPORT FISHERIES & WILDLIFE

Acting Refuge Manager Alfred L. Radtke of Lake Andes National Wildlife Refuge, Bureau of Sport Fisheries & Wildlife, presented County Treasurer_____ _____of _____County a check in the amount of $_____. The check represents an annual payment made to the county. The payment is for wildlife lands in the county known as waterfowl production areas. The money is to be used for the benefit of public schools and roads.

Federal waterfowl production areas are not subject to tax. However, the Bureau of Sport Fisheries & Wildlife pays its way by making annual payments to the county.

According to Radtke, these waterfowl production areas are managed for maximum wildlife production. They are open to public hunting and generally provide some of the best wildlife habitat in the area.

The Lake Andes Refuge Office manages these waterfowl production areas in 20 counties in southeastern South Dakota as well as the wildlife refuge located at Lake Andes, South Dakota.

-30-