

VALENTINE NATIONAL WILDLIFE REFUGE

Valentine, Nebraska

Annual Narrative Report

Calendar Year 1996

INTRODUCTION

Valentine National Wildlife Refuge (NWR) was established on August 4, 1935 under the Migratory Bird Conservation Act by Executive Order 7142. The purpose of the refuge as stated in the executive order is “as a refuge and breeding ground for migratory birds and other wildlife.”

Acquisition funding came from Duck Stamp sales and the Emergency Conservation Fund Of 1933.

The 71,272-acre Valentine NWR is located in the Sandhills of north-central Nebraska. The Sandhills contain the largest remaining stands of mid and tall grass native prairie left in North America. The refuge is a unique and ecologically important component of the National Wildlife Refuge System. The refuge has about 49,000 acres of grassy, undulating sand dunes, 13,000 acres of sub-irrigated meadows, and 10,000 acres of shallow lakes and marshes. The refuge is home to 270 species of birds, 59 species of mammals, and 22 species of reptiles and amphibians. The refuge is important to nesting and migrating waterfowl and is also one of the few places where good numbers of sharp-tailed grouse and prairie chickens can be found in the same area. Several threatened or endangered birds stop at the refuge during migration. Two listed plants and one listed insect are also found here. Most of the native flora and fauna found here historically are still present today.

The refuge is part of a complex administered from Fort Niobrara NWR. Valentine NWR is in Cherry County with a subheadquarters located on Hackberry Lake, 17 miles south of the town of Valentine on US 83 then 13 miles west on State Spur 16B.

B. CLIMATIC CONDITIONS

The staff of Valentine NWR have maintained a weather station at Hackberry Headquarters in cooperation with the National Weather Service since 1936. Total precipitation recorded in 1996 was near the long-term average for the station (Table B1). May and September appear to have been unusually wet months, with over half of the annual precipitation falling in these two months alone.

Table B1. Weather data recorded at Hackberry Headquarters, Valentine NWR during 1996. Information includes monthly precipitation (rain and melted snow), evaporation, and net moisture (precipitation - evaporation); the monthly minimum and average low, monthly maximum and average high temperature, and the monthly record temperature extremes.

<u>Month</u>	<u>Precip</u>	<u>Snow</u>	<u>Evap</u>	<u>Temperature (°F)</u>				<u>Record Temperatures (°F)</u>			
	<u>(in)</u>	<u>(in)</u>	<u>(in)</u>	<u>Mi</u>	<u>Ave</u>	<u>Max</u>	<u>Ave</u>	<u>Low</u>	<u>Year</u>	<u>High</u>	<u>Year</u>
Jan	0.84	14	--	-24	3.6	58	26.5	-38	1894	70	1974
Feb	0.16	3.25	--	-29	14.2	63	39.9	-37	1899	76	1982
Mar	0.47	6.75	--	-15	14.8	66	38.6	-28	1948	87	1946
Apr	1.4	1.5	2.25	15	30.4	80	58.6	-8	1936	97	1992
May	6.89	--	2.5	29	43.5	85	62.4	17	1909	102	1934
Jun	1.94	--	6.18	42	55.1	94	78	30	1973 ^a	107	1937
Jul	1.22	--	5.89	49	56.5	94	81.6	38	1971	111	1990
Aug	2.04	--	5.15	48	57	91	81	34	1935	108	1947 ^a
Sept	5.61	--	3.05	29	46.1	88	68.5	12	1926	103	1952
Oct	1.04	--	--	17	35.3	85	62.9	-6	1925	96	1922

Nov	0.81	12	--	-8	17.1	70	33.7	-36	1887	82	1965 ^a
Dec	0.23	5.25	--	-17	8.3	49	29.6	-34	1907	76	1936
Total	22.42 ^b	37.5	25.02								

^a Most recent year observed

^b Average annual precipitation for Valentine NWR weather station is 21.74" from 1945-2000.

C. LAND ACQUISITION

1. Fee Title

ROS Lindvall and Biologist McDaniel checked over the proposed land exchange between Dean Colburn and the refuge and prepared comments.

2. Easements

The transfer of the former Johnson FmHA easement to the Fish and Wildlife Service in fee title was completed. The property in Keya Paha County is about 180 acres in size with Holt Creek flowing down through the middle. The area will now be called the Holt Creek Wildlife Management Area.

E. ADMINISTRATION

2. Personnel

Larry Vaughn, Biological Technician, who retired January 3, 1995 passed away on January 27, after a long battle with cancer. Larry's career spanned over 30 years with a total commitment to grassland and wildlife management at Valentine NWR. A scholarship fund for perpetuation of grassland management to further agronomy education was set up as a memorial. The scholarship was one of Larry's last wishes.

7. Technical Assistance

Biologist McDaniel met with Forest Service Biologist Greg Schenbeck to discuss draft publications concerning prairie grouse nest site selection and the application of VOR sampling techniques for the

Nebraska Sandhills. USFW and FWS are working on using the same technique so information will be comparable.

8. Other

Range Tech Waln and ROS Lindvall completed Initial Attack Incident Commander training in Rapid City, SD from April 23-25.

Range Techs Sterry and Waln attended S-390 Fire Behavior in Grand Junction, CO April 2-3.

F. HABITAT MANAGEMENT

1. General

The 72,772 acre Valentine NWR lies at the heart of the Nebraska Sandhills. These grass-stabilized sand dunes provide some of the best native mixed- and tallgrass prairie remaining in the U. S. The refuge contains rolling, vegetated sand dunes and interdunal valleys that characterize the Sandhills region. Shallow lakes and wetlands are interspersed throughout the valleys, grading into subirrigated meadows. Sandhills and choppy sandhills range cover about 49,000 acres. Native grasses provide the dominant vegetation cover, although small areas have been invaded by Kentucky bluegrass and smooth brome. Other exotic plants of concern include small areas of leafy spurge, Canada thistle, and spotted knapweed. Grassland management is accomplished using permittee grazing and haying, prescribed fire, rest, and weed control.

2. Wetlands

During April the Marsh Lakes water levels rose enough that the water flowed out to the east. A fish barrier was installed in an attempt to keep carp out. A permanent outlet and dike need to be installed to keep carp out of these wetlands.

In April, water flowed out of East Twin Lake through the 800 foot culvert into Marsh Lakes. The culvert will keep the Twin Lakes from flooding over Highway 83.

The high water in the Sandhills has ranchers ditching to remove water from meadows. Three adjacent landowners, Lee, Lord, and G.C. Young Cattle Co. have been ditching some of their meadows.

Already high water levels in refuge lakes and wetlands increased in the last 10 days of May. Nearly all were up 5 inches. Problems associated with the high water include flooded nesting cover, potential access by carp to new areas, flooding of refuge roads, maintenance of water control

structures, and flooding of downstream neighbors.

The Willow Lake water control structure (state owned) nearly washed out in June

There are 37 major wetland/lake areas on Valentine NWR that comprise about 13,000 acres. Lake elevation has been recorded at seven refuge lakes since 1988, and readings from 1996 indicate that lake levels are at or above (average 0.40 ft higher) the yearly averages over the last 14 years (Table F 1).

Table F 1. Lake elevations on Valentine NWR in 1996.

<u>Lake</u>	<u>Average Elevation 1996</u>	<u>Average Lake Elevation 1988-2002</u>
Clear	2917.77	2917.29
Dewey	2924.49	2923.91
Hackberry	2924.99	2924.84
Pelican	2942.59	2942.76
Watts	2924.09	2923.92
Whitewater	2928.69	2928.24
Willow	2915.95	2914.84

There are 32 ground water monitoring wells located on and adjacent to Valentine NWR. These wells were established in the 1950's by the USDI-Geological Survey, and have been monitored twice annually by refuge staff since 1970. Spring and fall groundwater elevations for 1996 are presented below (Table F 2). Groundwater levels in 1996 were generally higher than the average levels measured from 1970-2002.

Table F 2. USGS groundwater monitoring well readings for 1996, and average values from 1970-2002. Data are groundwater elevation above sea level (ft), except for wells 17, 31, and 35; baseline elevations of these wells are unknown. For these wells, measured depth to groundwater was subtracted from 100 ft as an index of groundwater elevation.

<u>Well No.</u>	<u>Well Location</u>	<u>Spring 1996</u>	<u>Fall 1996</u>	<u>Spring Ave</u>	<u>Fall Ave</u>
1	N. East Long	2876.23	2873.83	2874.32	2873.37
2	SE Corner S. Marsh Lake	2897.43	2894.54	2894.60	2893.33
3	SE Corner Pony Lake	2900.07	2898.57	2899.47	2897.87

4	SE Cow Lake	2921.39	2919.29	2919.22	2918.61
5	Calf Camp & Hwy 83	2895.95	2895.35	2896.42	2895.23
6	Calf Camp West	2916.73	2914.13	2915.44	2913.77
7	Little Hay West	2918.54	2917.64	2916.07	2916.09
8	Little Hay & 83	2898.98	2898.18	2899.45	2898.38
10	W. Pony & 83	2925.61	2924.01	2922.86	2922.67
13	S. Willow Lake	2919.85	2918.65	2917.28	2917.26
14	E. McKeel Lake	2922.37	2920.37	2920.07	2919.16
15	S. East Sweetwater Lake	2926.97	2925.37	2925.12	2924.71
16	SE Trout Lake	2899.77	2898.07	2899.02	2898.83
17	E. Crowe Headquarters	96.3	96.0	95.27	95.11
18	NE old Harse place	NA	NA	2891.7	2890.61
20	S Watts Lake	2925.96	2923.76	2924.75	2924.23
21	E. Pony Pasture	2926.54	2924.84	2924.97	2924.56
22	Hackberry-Dewey Canal	2924.69	2923.79	2923.70	2923.33
23	Badger Bay	2925.29	2924.49	2923.69	2923.86
25	E. Pelican Lake	2942.82	2942.82	2943.78	2943.43
26	E. West Long Lake	2968.38	2965.78	2965.33	2965.34
27	W. Recreation area, Dad's Lake	2958.69	2956.39	2957.673	2956.61
29	NW Pelican Lake	2948.89	2948.69	2948.277	2947.42
30	S. Dewey Marsh	2941.34	2940.04	2940.577	2939.50
31	W. Dewey Marsh	98.9	99.5	98.34815	98.61
32	N. Pelican Lake	2942.85	2941.65	2941.567	2941.03
33	NW West Long	2981.1	2978.9	2980.57	2979.88
34	83 & W. King Flat	2926.89	2925.19	2924.04	2923.95
35	SE 21 Lake	97.9	96.6	96.17333	95.52

36	W. Sweetwater & 83	2926.97	2927.27	2927.167	2926.51
38	SE West Twin	2921.44	2920.14	2920.61	2920.08
39	WS Hassle place	96.3	94.8	94.48696	94.10

5. Grasslands

The native prairie on Valentine NWR was recognized in 1979 with the designation of the refuge as a Registered National Landmark. Four range sites are recognized within the refuge boundaries, each contributing to the diversity of the grassland. Wetland range sites are characterized by prairie cordgrass, blue-joint reed grass, sedges, goldenrods, saw-toothed sunflowers, and willows. The threatened western prairie-fringed orchid also is also found in some of these wetland range sites.

Sub-irrigated range sites are located where the water table is near the soil surface. These areas support grasses more characteristic of the tallgrass prairie. Dominant species found in these areas include switchgrass, Indian grass, and big bluestem. Many of our problem plant species occur in these sub-irrigated range sites. Kentucky bluegrass, smooth brome, leafy spurge, and Canada thistle are all most prevalent here.

Sand range and low sand range sites are on lower and gently sloping hills, and are covered with native cool and warm season grasses characteristic of the mixed-grass prairie. Needle and thread, porcupine, June, western wheat, prairie sandreed, sand bluestem, sand lovegrass, little bluestem, and switch grass are prevalent on these sites. Many forbs are also found here at varying abundance and visibility depending on climatic conditions.

Choppy range sites are the high dunes that gave the Sandhills their name. These hills are generally vegetated, but may be subjected to wind erosion resulting in a blowout. These blowouts are habitat for blowout grass and the endangered blowout penstemon. Predominant grasses in the “choppies” are blue grama, sand bluestem, prairie sandreed, sand lovegrass, sandhills muhly, and little bluestem.

Grassland management goals are to preserve, restore, and enhance the ecological diversity of indigenous flora of the Sandhills prairie. Management to meet this goal is accomplished through disturbance with grazing, haying, and fire, and rest.

For the second year in a row conditions were ideal for Kentucky bluegrass. It increased even in dry sites on hills.

7. Grazing

One of the two fencing contractors working on Valentine NWR quit and a new contractor will need to be found and trained.

In 1985 the refuge habitat management program was changed and short-duration grazing started. Prior to 1985, much of the refuge grasslands were grazed on 6 week rotation. Refuge permittees initially resisted the change to short-duration grazing. We have however seen a gradual acceptance of it over the past years. Acceptance has come through reduced grazing fees for the extra work involved in moving cattle and the obvious improvement in refuge grasslands. Several ranchers are now using short-duration grazing on their own ranches. Authorized AUMs for each of the ten permittees have remained about the same or been slightly reduced from 1995 levels.

Grazing fees for 1996 were:

spring grazing treatment	\$10.41/AUM
short-duration grazing	
1 day in unit	\$3.08/aum
2 days in unit	\$8.58/AUM
3 days in unit	\$10.41/AUM
4 days in unit	\$11.14/Aum
5 days in unit	\$11.50/Aum
6 days in unit	\$11.87/AUM
7 days in unit	\$12.24/AUM
8 or more days in unit	\$13.70/AUM
feed hay and graze in unit	\$13.70/AUM
feed hay in feed lot	\$10.41/AUM
feed hay on road	\$10.41/AUM
winter	\$13.70/AUM
share hay (permittee feed on refuge)	no charge for up to 3 AUM/ton

The full rate of \$13.70 is an increase of \$1.00 from the 1995 fee and is based on a 1993 rate survey. During 1993 a grazing rate survey was conducted to adjust the grazing fees at Valentine NWR. A base rate of \$15.60 per AUM was recommended to the regional office based on eight interviews. Rates from interviews ranged from \$12.00 to \$21.00 per AUM. The new base grazing rate for the state of Nebraska was set at \$17.87 per AUM by the regional office. Our rate is allowed to go up only \$1.00 each year which it will do until the full rate is reached. Cattle prices have fallen at a greater rate than pasture rental rates in this area. This will cause our grazing rate to remain below the market rate as the FWS full rate is tied to fall cattle prices. Regional Biologist Wayne King was contacted concerning doing a grazing rate survey to bring our rate more in line with market rates. Since the last survey cattle prices have fallen but grass prices have remained up, at least in this area. His recommendation was to delay doing the survey until the new refuge manual chapter on grazing was completed.

Permittees also had their grazing bills reduced for improvements and repairs to wells, fence, tanks and other facilities needed for the program. In 1996, \$34,712 was spent on improvements and deducted from final billings. This year as in 1995, permittees were required to hire a contractor to repair fences in the units they used. Basically two fence contractors were hired and they split the fence repair for the ten permittees. They were paid \$25 per hour for a crew of 2, and supplied their own gas, tools, vehicle, and equipment. This year part of the hay for the Texas longhorns at Fort Niobrara NWR was also put up and hauled by a contractor and the cost deducted from permittees grazing bills. This is included in the above improvements cost. Total collections for the 1996 grazing season were \$45,767. This total does not include the value of the refuge share of hay.

The methods and expected results for the different grazing strategies are explained below. The acreage of grassland treated with each type of grazing is listed in the habitat management by unit summary.

a. Spring Grazing Treatment

Spring grazing treatment (SGT) is done before the end of May on sub-irrigated meadow sites. The cattle are in the unit for greater than 2 weeks. Cattle eat or trample almost all of the residual cover. They also overgraze and thus reduce undesirable cool season exotic grasses (Kentucky bluegrass and brome). Cattle can be placed in a unit to remove residual and then brought back in later to hit the cool season exotics. In some instances, cattle are brought back in at several later dates for the same purpose. Because much of the feed is in the form of old mat, this treatment is best done by fall calving cows and not by lactating spring calving cows. Meadows that are hayed are also sometimes given this treatment to add fertilizer.

Dramatic results occur with this treatment. Exotic cool seasons, as Kentucky bluegrass, are suppressed and native warm seasons, as switch grass, increase in vigor and density. The disadvantage is the loss of the unit for nesting in the year of treatment and a lower waterfowl nesting density in the following year. Often the unit can however be rested for up to 5 years following treatment.

In 1996, 15 habitat units totaling 4,344 acres received a spring grazing treatment and included some areas that were latter hayed.

b. Spring Short-duration Grazing

Spring short-duration grazing (ES-SD) is grazing a unit for less than 2 weeks during May. Generally the cattle are in the unit for only 3 to 5 days. This type of grazing is generally done in hill units to stimulate growth of grasses, especially cool seasons. The short exposure times eliminate overgrazing. In 1996, 13 habitat units totaling 3,439 acres had spring short-duration grazing. Where possible units grazed later in summer the previous year are grazed using this treatment.

This both varies treatment and reduces disturbance to nesting cover. Most units grazed with ES-SD show excellent growth by fall.

c. Short-duration Summer Grazing

Short-duration summer grazing (SD-S) is done from June 1 through September 1. Cattle are in a unit for less than 2 weeks. Most units are grazed only 3 to 5 days and the cattle moved on to the next unit. Electric fences are used to break up larger units and increase stock density. Most short-duration summer grazing was completed by mid-July. In 1996 91 habitat units totaling 21,693 acres were short-duration summer grazed. Units grazed in this method show good growth by fall if there is adequate moisture. If little or no late summer rainfall is received regrowth is less, especially in those units grazed in late July or August.

d. Summer Grazing

Summer grazing (S) is done from June 1 through September 1 and cattle are in the unit for 2 weeks or longer. In 1996, 1 unit totaling 929 acres was summer grazed. These are larger units which have not been cross fenced.

e. Fall Grazing

Fall grazing (F) is done from September through November. Fall grazing can reduce mulch accumulations, add fertilization, and maintain grouse leks. If done at the proper time cattle will also graze out small wetlands and leave the surrounding upland vegetation alone. Generally the wetlands have green in them while the uplands have only cured grasses. Grazing in the wetlands recycles nutrients and provides pair habitat for ducks in the spring. Generally we have moved away from fall grazing except for pothole grazing. Fall grazing eliminates both winter cover and nesting cover in the following year. Some units were fall grazed in 1996 that will be given a spring grazing treatment in 1997. Some units are fall grazed after being hayed. This adds fertilizer to the soil and eventually quality and quantity to the hay harvested. In 1996, 7 habitat units totaling 1,116 acres were fall grazed.

f. Winter Grazing

Winter grazing (W) is done during the November through April period. In winter grazing, cattle are fed hay on a feed ground in a unit. The hay comes off the refuge. When the weather is harsh the cattle feed on hay but when it is nice they graze away from the hay ground. Winter feeding creates dense weed patches for several years following the treatment. These weed patches provide winter food for deer, pheasants, and other resident wildlife. Units with a history of winter grazing combined with feeding also have excellent growth of grasses away from the feedlot. This is due to the import of energy in the form of fertilizer. Hay is cut in the meadows. Resident wildlife also

utilize waste grain from the feeding operation. In the past, two feeding areas were maintained in Calf Camp and Little Hay Valleys. The permittee who had done this in the past declined to do it this year. The winter feeding was offered to the other permittees but declined by all. It is hard to get someone to feed cattle away from their ranch headquarters these days. Winter feeding can also be used to stabilize blowouts and roads. In 1996, 4 habitat units totaling 1,126 acres were winter grazed.

1996 HABITAT MANAGEMENT BY UNIT SUMMARY

<u>treatment</u>		<u>units</u>	<u>acres</u>	<u>AUMs</u>
<u>rest</u>				
rest		187	28,002	
	-			
<u>spring</u>				
spring grazing treatment SGT			15	
4,344	1,580			
early spring short duration				
ES-SD 1-5 DAYS				11
	2,390	371		
ES-SD 6-9 days		2	1,049	
191				
subtotal		13		7,783
2,142				
<u>summer</u>				
short duration summer				
SD-S 1-3 days		48		7,890
1,288				
SD-S 4-7 days		39		11,134
1,891				
SD-S 8-15 days		3		2,669
	312			
summer S 15-27 days		1		
929	184			
subtotal				
<u>fall</u>				
fall F, FPH		7		

1,116	505		
<u>winter</u>			
	winter W and Feed lot FD-L	4	
1,126	820		
<u>hayed</u>			
	portion or all hayed H	21	
705			
<u>misc.</u>			
	govt. horse	1	20
	12		

**note that acres when totaled exceeds the approximately 61,661 acres of upland on the refuge due to double treatment of some units

Grazing permittees were in to sign up for the 95-96 season. Grassland treatments planned include spring grazing treatment, short duration grazing, fall grazing, and winter grazing. The bulk of the grazing is in short duration. AUM's were either kept the same as last year or slightly reduced in a few cases. Improvements to be done and deducted from the final billing were planned and include fence maintenance and replacement, windmill reconditioning, haying, and purchase of insects for weed control.

With the RETIREMENT OF Larry Vaughn and no sign of a replacement it has been difficult to keep on top of this program.

8. Haying

Seven hundred and five acres of sandy, sub-irrigated, and wetland range sites were mowed and yielded 1,754 tons of hay. All or part of 21 habitat units were mowed and hayed. Units hayed (H) are listed in the habitat summary.. The hay was obtained and distributed as follows: refuge share under farming agreement (40 percent split) 674 tons delivered to Ft. Niobrara NWR and 213 tons fed by permittee in W treatment; permittee share (60 percent) 575 tons and contractor 81 tons delivered to Ft. Niobrara NWR, cost deducted off permittee grazing bill. Twenty two tons of road hay was retained at Valentine NWR this year.

Most of the meadows hayed are also grazed either in the fall or spring. This adds fertilization to the meadows and improves the quality and quantity of hay produce.

Haying is used to provide browse areas for Canada geese, sandhill cranes, prairie grouse, and deer. Mowing can also open up small wetlands for waterfowl pair habitat. Most of the refuge share under farming agreements and all the hay put up by the contractor is used at Ft. Niobrara NWR for winter feed for longhorns.

Areas to be hayed that we have found the endangered prairie white-fringed orchid orchids in the past were searched on foot. Searches were done when the plant was in bloom. Plants found were marked with fiberglass stakes and the area not mowed.

10. Pest Control

The weed inventory survey was completed and sent in. Our most serious "weeds" are cedar trees, Kentucky bluegrass, smooth brome, and purple loostrike as they cover the most acreage. We also have small amounts of the noxious weeds Canada thistle, musk thistle, and leafy spurge.

A report on aquatic nuisance species was sent to the Enhancement Office in Pierre, SD. Purple loostrike, phragmites, and carp are the species present on the refuges.

Asst. Manager Lindvall presented a short talk at the Nebraska Weed Supervisors Meeting in Omaha on December 5. The talk was on control of noxious and other weeds at the Ft. Niobrara and Valentine NWRs.

A draft Weed Control Plan was completed.

Leafy spurge in units 2B1 and 15A were clipped. This prevents seed formation and reduced stem density. Other sites were not clipped so insect releases could be given a chance to work.

12. Wilderness and Special Areas

A wilderness questionnaire was completed for the Complex. Our two issues are the large number of canoers and tubers travelling down the Niobrara River through the wilderness and the status of the proposed wilderness at Valentine NWR.

13. WPA Easement Monitoring

Refuge Manger Huber met with the Brown County Commissioners to resolve a public access road

into the Tower FmHA property (later named Yellowthroat WMA). We will purchase an easement from the highway to the property from the private landowner.

ROS Lindvall met with Mark Nielsen, the landowner of the Wagner easement. Plans were made to repair a small dam and the use of grazing to improve grasslands on the easement were discussed. A special use permit was prepared and a spring grazing treatment was completed on the north 160 acres of the easement. Brome and bluegrass were reduced by the graze and natives encouraged. Stream banks were not trampled. The dam on the south part of the easement was repaired using private lands moneys. State WHIP money was used to seed 18 acres of former cropland on the north 1/4 of the easement.

Access to the Mead land and easement is being disputed by the landowners and their neighbor. Both want USFWS to join their side. We have tried to remain neutral.

Fencing of the Haskel Easement was cancelled due to the fact that the landowner is attempting to do a lease-back buy back and our easement would not be recorded until 1998 if at all. We did not want to go to the expense of the fence until an easement is recorded. In an April visit the landowner was extremely angry and verbally abusive.

The final billing was completed for seeding of 66 acres on the Tower easement. The work was done using private lands funds. The landowner was given permission to mow the volunteer rye in the grass seeding to prevent seed formation. Later in the year a WEA was written to plant another 60 acres of native grass.

G. WILDLIFE

1. Wildlife Diversity

Wildlife diversity, with the exception of large ungulates and their predators, is relatively unchanged in the Nebraska Sandhills as compared to most areas of the United States. Native grasslands dominate the local flora, and indigenous wildlife are well represented. Threats to this largely intact grassland system are changes in the disturbances that led to the evolution of the grassland system and invading exotic species. While much is not known about historic disturbance, fires and large bison herds undoubtedly played a role in shaping this grassland system.

Maintenance and enhancement of the Sandhills prairie is necessary to ensure the ecological integrity of the flora and fauna found on Valentine NWR. Grassland management on the refuge incorporates grazing, mowing, rest and prescribed burning to accomplish refuge objectives. Nesting information collected at the refuge indicates that management for greater quantities of tall, vigorous native vegetation provides the best nesting cover for migratory waterfowl and resident prairie grouse. This type of cover is often lacking on private land, thus the refuge has sought to use grassland disturbance to maintain grassland vigor without compromising nesting cover.

^b Plants were not counted in this year

e. Blowout Penstemon

In cooperation with Dr. James Stubbendieck (Univ. of Nebraska-Lincoln), approximately 2600 blowout penstemon plants were transplanted into three blowouts on Valentine NWR this summer. The blowouts are all located along the north side of Pelican Lake, in Habitat Units 6 and 15A. Global Positioning System (GPS) coordinates for these locations are as follows: HU 6 - N 42° 31' 46.22", W 100° 39' 23.89"; HU 15A (W) - N 42° 31' 36.23", W 100° 39' 03.27"; and HU 15A (E) - N 42° 31' 19.56", W 100° 37' 56.54". These transplants will be monitored in the coming years to assess plant health and sustainability in these blowout locations.

Dr. Butterfield from UN-L inspected blowout penstemon transplants and found about 40 percent survival. Considerable kangaroo rat damage to plants was noted.

Seven naturally occurring blowout penstemon were observed in habitat unit 3D and three in habitat unit 16C. No other naturally occurring plants were found on the refuge. At the Crowe Ranch adjacent on the refuge, a total of 13 plants were counted. At the Crowe Ranch this is the fewest plants seen since 1978.

Two adult bald and 1 adult golden eagle were observed during the midwinter eagle survey conducted in early January. The survey is done in cooperation with Nebraska Game and Parks.

Biologist McDaniel collected a soil sample from the Highway 83 ROW in Sweetwater Valley for seed germination tests for prairie white-fringed orchids. Margaret From at the Henry Dorley Zoo is conducting research on growing orchids in the nursery.

An American burying beetle was found dead in a water tank at Pony Lake.

A report of 3 whooping cranes on Skull Lake on April 11, just off the refuge, was received from the local conservation officer. A snow storm on April 13 probably pushed the birds out of the area.

3. Waterfowl

During the mid-winter waterfowl survey conducted in January the following were observed: 300 Canada Geese, 20 common goldeneye, and 10 common merganser.

Refuge lakes were ice free on March 16 but froze up again on March 25. In April about 125 dead ducks and coots were picked up on Watts and Marsh Lakes. The ducks were mostly scaup and redheads. They were emaciated and probably died during the freeze up. Neighboring ranchers also reported some diver mortality during this period.

A pair of trumpeter swans was observed in March. In April 3 pairs were noted on Watts, Center, and Crooked Lakes. The pair on Center fledged 2 cygnets in 1995.

A survey of nesting Canada geese pairs was conducted in cooperation with Nebraska Game and Parks. Ninety one nesting or potential nesting pairs were counted on and adjacent to Valentine NWR.

A total of 215 waterfowl nests were located on the Island (18C2) with mallards and gadwalls comprising the bulk of the nests. Several nests were destroyed by hail. Predation has been light.

10. Other Resident Wildlife

Prairie grouse counts were completed in April but weather prevented them from being done within the desired time frame. A total of 289 male prairie chickens on 35 booming grounds and 221 male sharp-tailed grouse on 25 dancing grounds were observed on and adjacent to Valentine NWR. Within the Nebraska Game and Parks Sample Area, 125 male prairie chickens on 15 grounds and 89 sharp-tails on 11 grounds were observed.

Dr. Clausen, University of Miami - Ohio, captured 33 Ornate box turtles in habitat unit 1A. Several turtles were equipped with tracking strings and daily movements were monitored to study thermo regulation.

11. Fisheries Resources

Valentine Fish Hatchery staff assisted by refuge staff completed perch egg collection on Watts Lake in April. Some fish were also taken for display at Gavins Point Fish Hatchery and Aksarben Aquarium. In June good numbers of perch and some large bass and muskie were noted.

H. PUBLIC USE

1. General

Public Use Reports for 1996 were submitted. We have good data on canoeing, fair to poor data on hunting and fishing, and only guesses for general visitation. The biggest change so far from last year was the growth of tubing at Fort Niobrara NWR. Staff time is not available to get better estimates.

A wilderness questionnaire was completed for the Complex. Our two issues are the large number of canoers and tubers travelling down the Niobrara River through the wilderness and the status of the proposed wilderness at Valentine NWR.

Sections for Ft. Niobrara and Valentine NWRs Watchable Wildlife were prepared and submitted for the Nebraska Watchable Wildlife book.

Sheri Fetherman and Doug Staller conducted a public use minimum requirements review of Fort Niobrara NWR. They also visited Valentine NWR.

The public use reports for Ft. Niobrara and Valentine NWRs were completed. Few surveys of use were done so the figures reported are best guesses only.

News releases were written and sent out to area television, radio, and newspaper outlets. Most were sent to about 42 outlets. Junior Duck Stamp releases were sent statewide. It is not known how many outlets used the releases. The local paper and radio carried them all. The following were sent out in 1996.

[Bird Watching on Bird Day](#)

[Fish the Refuge Lakes During National Fishing Week](#)

[Blinds Available for Grouse and Turkey Spring Displays](#)

[Nebraska Youth Wins Third Place in National Contest](#)

[Fort Niobrara and Valentine Refuge Buffalo and Longhorn Sales Coming UP](#)

[Nebraska Junior Duck Stamp Art on Display](#)

[Fort Niobrara Refuge Buffalo Auction](#)

[Texas Longhorn Sale Held](#)

[Junior Duck Stamp Art Contest](#)

[Insects for Purple Loostrike Control Released](#)

[Reward Offered for Information on Vandalism](#)

[Author of Bison Book to Appear on CNN](#)

[Refuge Firefighters Dispatched to Western Fires](#)

2. Environmental Education - Students

Rather lengthy replies were sent to students doing research on both refuges. These kinds of requests provide a valuable chance to educate but are increasing and taking quite a bit of time.

The refuge hosted the Nebraska Federal Junior Duck Stamp Contest again this year. The judging was held on April 9 in Valentine. Tim Bougger's painting of two Canada geese standing on the edge of a wetland was selected as best of show from the approximately 300 entries. Nebraska Ducks Unlimited and the Fort Niobrara Natural History Association provided funding and prizes for the contest. The judges represented the History Association, Ducks Unlimited, Nebraska Game and Parks, the U.S. Post Office, and Fish and Wildlife Service. The quality of entries was up from past years. The contest is a lot of work which was rewarded this year by one mother telling me that her kindergarten son slept with his ribbon for one week.

Following the judging, the top 36 entries were made into a display which toured around the state. The art was displayed at Falls City High School, Nebraska Game and Parks District Offices in Omaha and Norfolk, Basset Library, Wildcat Hills Nature Center in Scottsbluff, Cabellas in Sydney, Valentine Post Office, Lincoln Main Post Office, and at the refuge visitor center.

Nebraska's entry at the national level for the Junior Duck Stamp Contest placed third. Tim, his art teacher, and one parent received an expense paid trip to Washington, DC in the fall to view the judging on the adult Duck Stamp competition.

4. Interpretive Foot Trails

Valentine NWR received \$3,000 from the ecosystem team to build an observation tower and interpret the Sandhills ecosystem. The Fort Niobrara Natural History Association and Nebraska Telephone Pioneers are partners in the project. The plans call for building an observation platform part way up the fire tower located at Hackberry Lake. Safety, historical, engineering, and the Pioneers were contacted to start the project rolling.

8. Hunting

Refuge staff met with Nebraska Game and Parks Biologist Bill Vodonal about the 1996 deer season regulations. They plan on continuing management of the Sandhills Unit as a trophy unit and continue to not allow special antlerless only permits to be used on Valentine NWR. Calamus West will also remain about the same.

Twenty coyote hunting permits were issued for the 1995-96 coyote hunting season at Valentine NWR. So far 14 hunters have returned the permits and reported taking 8 coyotes. Several hunters reported mange in the coyotes they shot.

Work was done on the Valentine Refuge roads so that all but one could be opened for the grouse season. High water had covered many of the roads this spring.

Valentine NWR was open for the special youth waterfowl hunting day but it is not known if anyone came out. The day was not well publicized in Nebraska. We did have a steel shot shooting clinic on September 21 which was attended by 7 youth and 3 adults.

Grouse season opened on September 14. On opening day 52 hunters were contacted and they had taken only 18 grouse. Thirty three vehicles were counted on the refuge which gives a minimum estimate of 80 hunters out for the opener. Retired regional directors Walt Steiglitz, Jim Pullium, and Galen Buterbaugh hunted grouse on the refuge at the end of the month.

Duck season opened on October 5, one of the earliest openers in recent times. Hunting pressure on

Valentine NWR was light with only 5 groups out.

Pheasant season opened on November 2 with few hunters out this year. Pheasant numbers are and have been very low on Valentine NWR in recent years. Three hunters were ticketed for shooting turkeys near Hackberry headquarters.

Rifle deer season opened on November 9 with an estimated 292 hunters out for the opener which was cold and windy. The estimate was made by multiplying the number of vehicle license numbers recorded (117) by the average number of hunters/vehicle of 2.5. Few hunters were out during the week or on the second weekend due to cold weather. Hunters were ticketed for driving on a closed trail, trespass in a closed area, and taking of a deer in a closed area. Eighty two deer reported as shot on the refuge were checked in at state deer check stations.

9. Fishing

Ice fishermen were lined up on January 6 when Valentine NWR opened following the furlough. Fishing pressure has remained heavy since. Most are fishing for large bluegill on Pelican Lake.

Lakes froze up and ice fishermen started fishing on November 20, a rather late start for this area.

Signs were placed on Watts and Duck Lake to notify fishermen of the 15 inch minimum size limit on saugeye. Ice fishermen have started to catch a few of these and had questions on the size limit which was put in effect in 1994 by Nebraska Game and Parks.

Copies of the 1996 Nebraska Lake Guide were received and include master angler awards from the Valentine NWR fishing lakes. Hackberry Lake was second in the state for pike and third for bass. Pelican Lake was first for bluegill with 57 master anglers.

A news release was sent out to area news outlets for use during National Fishing Week. The release used fall fishery surveys to give anglers an idea of what they might expect to find in the refuge lakes. It also invited anglers to visit the refuge on free fishing day, June 1. On this date a state license will not be required for fishing in Nebraska.

On June 3 Refuge Officer Kime contacted fifteen fishermen on Dewey and Hackberry Lakes. All were catch and release fishermen after bass and northern pike. Over the years we have seen a definite increase in this type of fishing.

11. Wildlife Observation

The grouse and turkey observation blinds were taken down. Use was down from previous years, especially for the grouse blinds. The wet, cool weather may be the reason.

17. Law Enforcement

The number of officers and the amount of time spent enforcing refuge regulations has decreased over the years at the complex. Other demands always seem more pressing and our LE program has suffered. 1996 was no exception with most effort spent on season openers, parking cars at the canoe launch, and training.

Refuge officers Kime, Lindvall, Sellers, and Huber completed LE Refresher training at Marana, AZ. Sellers and Lindvall also completed the rifle training session.

All complex refuge officers requalified in the fall at the annual refresher.

Thirteen violation notices were written in 1996 and are listed below. The bond schedule was revised in November and the last three citations processed under the new schedule. The old schedule was formulated in 1986 and had low fines. The new schedule puts some bite into the fines and includes liquidated damages. Our fines are now more in line with those of the state in cases where liquidated damages are assessed.

Violation notices issued by refuge officers in 1996.

<u>Violation</u>	<u>Date</u>	<u>Fine</u>
night trespass	1/25/96	\$50
no fishing license	3/17/96	\$125
2 driving on closed trail	6/1/96	\$50 each
driving on closed trail	6/1/96	\$50
non-resident with resident fishing permit	7/15/96	\$125
3 shot turkey on refuge	11/2/96	\$125 each
driving on closed trail	11/9/96	\$50
shot deer in closed area	11/11/96	\$750
2 hunting in closed area	11/11/96	\$100 each

Asst. Manager Lindvall loaded 6 steel/lead mixed load shotgun shells which were tested with the "Hot Shot" shot shell tester by Special Agent Bob Germany. Five of the shells indicated steel loads and 1 bismuth.

Asst. Manager Lindvall and FMO Kelton assisted in a search for an individual who fell beneath inner tubes on the Niobrara River and nearly drown. The individual was in an area that is difficult to access by vehicle. Fortunately other people were able to transport him to Berry Bridge where he was transported by ambulance to the Cherry County hospital. The individual had been drinking.

J. OTHER ITEMS

3. Credits

Refuge Manager Lindvall wrote all but the weather and parts of the wildlife section in 2003 from January - August Monthly Activity reports and personal notes. No August - December reports were located. Biologist Nenneman wrote the weather and parts of the wildlife sections in 2003 from files and notes.