

VALENTINE NATIONAL WILDLIFE REFUGE

Valentine, Nebraska

Annual Narrative Report

Calendar Year 2004

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 71,712-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 271 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. Valentine National Wildlife Refuge staff also manage the Yellowthroat Wildlife Management Area in Brown County.

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A. HIGHLIGHTS

A study to determine the effects of grassland management on birds was started (G-7)

Hackberry Lake was renovated by removing carp (G-11)

Volunteers built two new grouse observation blinds (I-1)

A new all wheel drive backhoe was received (I-4)

B. CLIMATIC CONDITIONS

No temperature records were set during 2004, and overall the year was marked by moderate temperatures (Table B1). Ice-out on the refuge lakes occurred in late February. There were no days recorded with a temperature topping 100 °F, although hot weather did persist through August. Rainfall occurred throughout the growing period, and vegetation on the refuge seemed to do well with the precipitation that was received. The total precipitation for the year was 18.4 inches, which is 2.76 inches below the average rainfall recorded at Hackberry Headquarters. Below average rainfall totals have occurred over the past six years, and moderate drought conditions persisted in the Valentine area this year.

Table B1. Monthly weather data summary from the weather station at Hackberry Headquarters, Valentine NWR, during 2004.

Month	Precip. (inches)	Snow (inches)	Temperature (° F)				Record Temperature (° F)				
			Min	Ave	Max	Ave	Min	Year	Max	Year	
Jan	0.16	3	-15	11.2	56	35.0	-38	1894	70	1974	
Feb	0.68	1.5	-8	15.3	61	38.3	-37	1899	76	1982	
Mar	1.62	5	15	27.6	80	51.6	-28	1948	87	1946	
Apr	1.42	0	14	33.5	82	63.3	-8	1936	97	1992	
May	3.24	0	25	43.9	92	71.2	17	1909	102	1934	
Jun	3.06	0	37	49.0	86	72.2	30	1973 ^a	107	1937	
Jul	2.91	0	48	56.4	98	82.4	38	1971	111	1990	
Aug	0.95	0	42	54.4	93	85.7	34	1935	108	1947 ^a	
Sept	2.71	0	34	48.3	93	75.0	12	1926	103	1952	
Oct	1.21	0	28	39.8	77	66.8	-6	1925	96	1922	
Nov	0.4	2	9	28.1	74	51.6	-36	1887	82	1965 ^a	
Dec	0.02	0	-5	23.2	63	47.0	-34	1907	76	1936	
Total	18.38	11.5	Average precipitation (1988-2004)								21.14

^a Indicates the most recent year record was observed.

C. LAND ACQUISITION

1. Fee Title

Marietta Gallino was approached concerning the possible sale of ranch lands she owns that are included in the land acquisition proposal for Valentine NWR. She stated that she has not decided what she will do with the land but will definitely not sell to the Fish and Wildlife Service. She also was not interested in selling an access easement. Later she called and stated that she will not allow “outsiders” to cross her land should we bid out grazing of refuge lands that were formerly part of her late husbands refuge grazing permit. See section H 17 for additional information about the access issue across this land.

The owner of the Time Line Ranch visited with Huber and Petersen about a proposed land exchange in the vicinity of Duck Lake. The amount of land to be exchanged would be small. The landowner was asked for additional information but has not yet replied.

Land acquisition at Valentine National Wildlife Refuge was put on hold until completion of the Fort Niobrara National Wildlife Refuge River Plan is completed. The thought was that one controversial issue should be settled before moving on with acquisition, which will also be controversial in the local community.

D. PLANNING

1. Master Plan

Refuge Manager Lindvall attended the Conservation Practitioners Workshop held in Kearney on October 28 and 29. The purpose of the workshop was to get input on conservation issues and conservation actions to address issues. The statewide comprehensive plan will stress practices that are acceptable to private landowners. Nebraska has limited public lands. The plan, being prepared by the Nebraska Game and Parks Commission, is a requirement for federal funding of non-game wildlife conservation efforts in the state.

4. Compliance with Environmental and Cultural Resource Mandates

A report, *Region 6: Historical and Architectural Assessment of Depression Era Work Projects*, by Lou Ann Speulda and Rhoda Lewis was received. Valentine National Wildlife Refuge was listed as having the best represented and preserved buildings from these depression era public works projects. Most of the buildings at Hackberry Lake Headquarters were built by the CCC or WPA and have only been slightly modified since. The report contained narratives and photos from the camps. We still have many original photos and documents from the camps.

These items are stored in fire proof cabinets in the old museum at Fort Niobrara National Wildlife Refuge.

Jim Behrmann and Shridar from the Regional Office conducted an environmental compliance review of Valentine National Wildlife Refuge on May 18 and 19. Recycling, alternate energy, and compliance issues were discussed. Items needing attention included paint disposal, trailer mounted fuel tanks, oil leaks, use of recycled paper and oil, and fire extinguishers. They provided funding for purchase of 2 double walled fuel tanks (\$1,700). The tanks were placed on existing trailers to replace single wall portable tanks. Also funded was paint cleanup (\$2,400). Environmental Compliance from Lincoln, Nebraska was up and removed about 175 gallons of old paint that has been in the tuber cellar for years. A report of actions for the environmental compliance review was sent in with most items remedied. We still have 5 gallons of an unknown substance to dispose of and need to start testing drinking water.

A recycling bin for plastic, paper, and aluminum was received and placed at Hackberry Headquarters. We had been using an old horse trailer for a recycle center. We will keep it for cardboard.

5. Research and Investigation

- a. The following research papers are based on studies conducted wholly or in part on Valentine NWR.

Flanders-Wanner, B. L., G. C. White, and L. L. McDaniel. 2004. Validity of prairie grouse harvest-age ratios as production indices. *Journal of Wildlife Management* 68:1088-1094

Flanders-Wanner, B. L., G. C. White, and L. L. McDaniel. 2004. Weather and prairie grouse: dealing with effects beyond our control. *Wildlife Society Bulletin* 32:22-34.

Lang, Jeff W. 2004. Blanding's turtles on Valentine NWR, Nebraska: population status, estimate of population size, and road mortality. Draft final report for 2002-2003. Nebraska Dept of Roads Project EACHN-STPB-83-4(111), C..N. 80620: CCS Agreement 60181-2-J169, DCN 64520-J-0001, C.S. 64520-C691. A draft report on the Blanding's turtle research conducted by Dr. Lang was received. The report states that Valentine NWR has the largest population of Blanding's turtles documented, and is another outstanding wildlife resource unique to the Sandhills. The report recommends fences to reduce turtle road mortality be placed at several additional locations. A more detailed summary of this report is provided in section G.10.e.

b. Ongoing research at Valentine NWR

Pam Pietz (USGS, Northern Prairie Wildlife Research Center) and Nenneman developed a study plan titled “Effects of grazing regimes on distribution and abundance of grassland birds at Valentine National Wildlife Refuge” for the Science Support Project funded for Valentine NWR. The objectives of this study are to provide estimates of non-game grassland bird densities and distribution in both upland and subirrigated meadows, to compare bird densities and species richness between recently grazed and rested habitat units in both upland and meadow habitat types, and to determine vegetation characteristics associated with each habitat type and within each grazing treatment among those habitat types. Additionally, this study will provide a comparison of species occurrence and richness for non-game grassland birds using refuge grasslands to those using private pastures. This information could provide insights for refuge management based on bird distributions across a wide range of grassland management practices.

Drs. Gary and Mary (Kathy) Packard visited Valentine NWR in June to collect painted turtle eggs for their studies of turtle physiology and freeze tolerance. Cool temperatures and rain slowed turtle nesting, and made collecting egg clutches more difficult. Most eggs were again collected from the boat landing and lawns at Hackberry Headquarters.

Dr. Robert Gibson and a crew of three technicians spent approximately 2 months on Valentine NWR collecting data to test some assumptions about earlier ecological interpretations that have been made regarding the formation of mixed-species leks in prairie grouse (greater prairie chicken and sharp-tailed grouse). A summary of his preliminary results follows. Lek site habitat was measured at sites used by each species and at mixed species leks. Patterns that emerged from this sampling indicated that in undisturbed or lightly grazed cover, prairie chicken leks occurred on wetland margins and sharptail leks occurred on low rises in the meadow/dune transitional area. Vegetation cover on leks for both species was lower than in the areas immediately surrounding the lek. Units that had been mowed or winter grazed provided low cover suitable for both species to display in subirrigated meadows. Mixed leks occurred exclusively in mowed subirrigated meadows. These results suggest that both species prefer to display in areas with little cover, and in the absence of disturbance (heavy grazing/mowing) some other factor segregates lek sites by topography. Heavy grazing or mowing makes subirrigated meadows attractive lek sites for both species, and creates a situation where the two grouse species may form mixed leks.

An attempt was made to collect data on nest site selection of prairie chickens and sharp-tailed grouse. Nine female prairie chickens and 4 female sharp-tails were captured and radio-tagged. Two prairie chickens dispersed from the refuge, and predators caught 2 prairie chickens and one sharp-tail, leaving 5 prairie chickens and 3 sharp-tails. Females of both species moved well away from the lek where

they were trapped (0.7-2.4 km for prairie chickens, 1.1-3.9 km for sharp-tails) and localized their activity in a small area. Only three nests were located, 2 prairie chicken and 1 sharp-tail. The nests found indicated that nesting is not topographically segregated as one prairie chicken nested in the hills near the Pony Lake fire tower, and one nested in the meadow north of Sweetwater. At least one sharp-tail nested in an ungrazed meadow. Three of five tracked prairie chicken hens disappeared rather abruptly after they were presumed to have begun nesting. It is possible that following a failed nesting attempt these birds disperse to non-breeding areas outside of the refuge.

6. **Other**

Jim Sinclair from Regional Office Realty was out to look at land prices for an update of revenue sharing.

E. **ADMINISTRATION**

1. **Personnel**

Valentine National Wildlife Refuge is part of the Fort Niobrara/Valentine National Wildlife Refuge Complex with three permanent staff assigned to the station. They are:

Mark Lindvall	Refuge Manager	GS-12
Mel Nenneman	Wildlife Biologist	GS-11
Dave Kime	Maintenance Worker	WG-8

No seasonal fire fighters have been hired for Valentine National Wildlife Refuge. Two selected declined at the last minute. The help with fire and refuge work was sorely missed.

Judd Brink worked on grassland transects at Valentine National Wildlife Refuge for three weeks in September. Judd was here on travel from Teawaukon National Wildlife Refuge and was paid using Chronic Wasting Disease funds.

Wendy Austin, Josh Jording, and Denise Johnson were hired under Student Service Contracts by Northern Prairie Wildlife Research Center and worked here for 2.5 months on the grassland bird study.

4. **Volunterrs**

Len McDaniel, former refuge biologist, volunteered 120 hours of work organizing and labeling slides of photo points taken on vegetation transects at Valentine National Wildlife Refuge. Len also volunteered for 8 hours on the Hackberry Lake renovation.

Boy Scout Troop 288 volunteered about 100 hours of time to construct a photo blind for sharp-tailed grouse. See section I-1.

Gordon Valley 4 H Club volunteered about 100 hours of time to construct a photo blind for prairie chickens. See section I-1.

5. Funding

Valentine National Wildlife Refuge receives funding as part of the Fort Niobrara/Valentine National Wildlife Refuge Complex. This year \$256,679 was received through grants and MMS to do the projects listed below.

A visitor services grant of \$3,000 was received to do the design of an updated Valentine NWR general leaflet. A draft, but not final leaflet design, was ready by the end of the year. The money was used for contracting layout and scanning of photos. Refuge staff provided text and photos. The map from the fishing brochure was used as a base for the new brochure.

Two thousand dollars was received from private lands funds for FY 2004. Our work in this area is mainly in support of the Wetland Reserve Program.

Sixteen thousand dollars was received to pay for the Valentine National Wildlife Refuge fisheries surveys to be done in 2004 and 2005. The money was from left over RO funds and transferred to the Pierre Fisheries Assistance Office for use on the surveys here.

Fifteen thousand dollars was received from left over RO funds to purchase GIS equipment. The equipment and training were purchased but not received. We have a great need for GIS but never seem to have the time to implement it.

RO funds of \$1,700 for double wall fuel tanks and \$2,400 for paint cleanup were received.

A grant on \$50,000 was received for work on the endangered blowout penstemon. The funds will be used to produce seedlings over 3 years, plant them at Valentine and Crescent Lake NWRs, and monitor the success of the transplant effort. Biologist Mel Nenneman prepared the grant request.

A new Caterpillar 430D Backhoe Loader (\$80,499) and a new Bush-Whacker Model T-180 flex wing rotary mower (\$16,941) were received. MMS provided

funding for this machinery. The old Massey-Ferguson backhoe was offered to other refuges with no takers. It will be sold as surplus.

A grant of \$515 was received from the North American Nature Photographers Association for purchase of materials for a second photo blind for grouse leks. The local 4 H Club built the blind. A grant of \$1,429 was received in 2003 to build the first blind. Some materials and funds were left over from this grant and applied to the second blind.

A Cooperative Conservation Initiative grant for \$24,544 was received for the renovation of Hackberry Lake. Nebraska Game and Parks is our partner in this project. Nebraska Game and Parks contributed \$44,080 to the project, mostly the cost of fish for stocking the lake plus some labor.

6. Safety

Monthly safety meetings were held for the Complex. Their content is listed in the Fort Niobrara National Wildlife Refuge Annual Narrative. Refuge Manager Lindvall hosted the August Safety Meeting on the subject of hearing protection.

Biologist Nenneman rolled an ATV while doing grassland transects and injured his knee. He was traveling down a hill when the ATV upset on a cat step. He was able to step off the machine but injured his knee as he did so. He required surgery and missed most of the hunting season!

8. Other

Lindvall, Nenneman, and Kime attended an excellent retirement seminar held in Valentine on March 23 and 24.

Biologist Nenneman attended the Refuge Manager Basic Academy held at NCTC. Sure would be better if this course was not held in the spring. He gave the course good reviews. This three week course covers aspects of refuge management from personnel and budget to team building and working with the media.

Nenneman, Lindvall, and Kime all completed IT Security Training via the internet.

Manager Lindvall attended the Chronic Wasting Disease Workshop held in Valentine on April 26 and 27. CWD has not been documented in the area of Valentine NWR but has been found in western Nebraska. This year one case was also reported east of here near Grand Island.

Lindvall, Kime, and Nenneman received Hanta and West Nile virus safety training on June 16.

Lindvall took respirator training and fitting on June 16. Kime also had a fit test.

Lindvall completed ethics training with “Establishing Partnerships with Private Organizations.”

Lindvall completed diversity training on June 21 by viewing videos on diversity, accommodating hearing impaired, and providing access for all.

Lindvall, Kime, and Nenneman attended training on the use of our Racal portable radios. Hopefully this training will resolve some of the problems we have had with these radios.

Lindvall, Nenneman, and Kime completed the required credit card training.

Maintenance Worker Kime attended SAMMS training at NCTC from November 15-19.

Lindvall, Nenneman, and Kime completed the required annual fire fighter refresher held in Valentine on May 19.

Refuge Manager Lindvall attended an organizational meeting to set up the Prairie Grouse Technical Council Meeting to be held in Valentine in September of 2005.

Manager Lindvall and Biologist Nenneman attended the annual meeting of the Nebraska Chapter of the Wildlife Society on September 23-25. Several interesting papers were presented on using patch burning to increase diversity of both plants and wildlife in native grasslands.

Lindvall and Nenneman attended the Society for Range Management Meeting held in Ainsworth on October 19. The focus was on using prescribed fire on private lands for habitat improvement. Several private landowners in the area have conducted burns and described their experience. A discussion was held on how government agencies, non-profits, and landowners could work together in implementing prescribed fire on private lands.

Nenneman attended a biological workshop in Minot, ND. The workshop focused on the role of biology and biologists in refuge management, and on biological monitoring. Nenneman presented a paper on the techniques used in measuring bird nest sites. There was a good discussion at the end about standardized techniques for monitoring, both pros and cons. The major problem in using standard methods is that the objectives of monitoring are often different from station to station, thus making it difficult to apply standard methods across a wide

area. Additional discussion focused on the fact that even standardized techniques can and are applied differently, thus making direct comparisons more difficult.

Nenneman attended a meeting on the Conservation of the Western Prairie Fringed Orchid at Mahoney State Park on Nov 17-18th. Interested individuals from across the species range attended and provided information on the species status across its range (Manitoba, North Dakota, Minnesota, Iowa, Nebraska, Kansas, Missouri, and Oklahoma). Most of the plants are in Manitoba, North Dakota, and Minnesota. Of the more southern states in the species range, Nebraska has the best population, with between 1000 and 2000 plants. There is ongoing research in Minnesota and North Dakota to address the effects of management on the orchid. The Nature Conservancy in MN has a long term study to assess the effects of spring and fall burning, mowing, and rest on orchid survival, and studies in North Dakota are looking at the effects of grazing on orchids. The periodic nature of this plant makes it difficult to study.

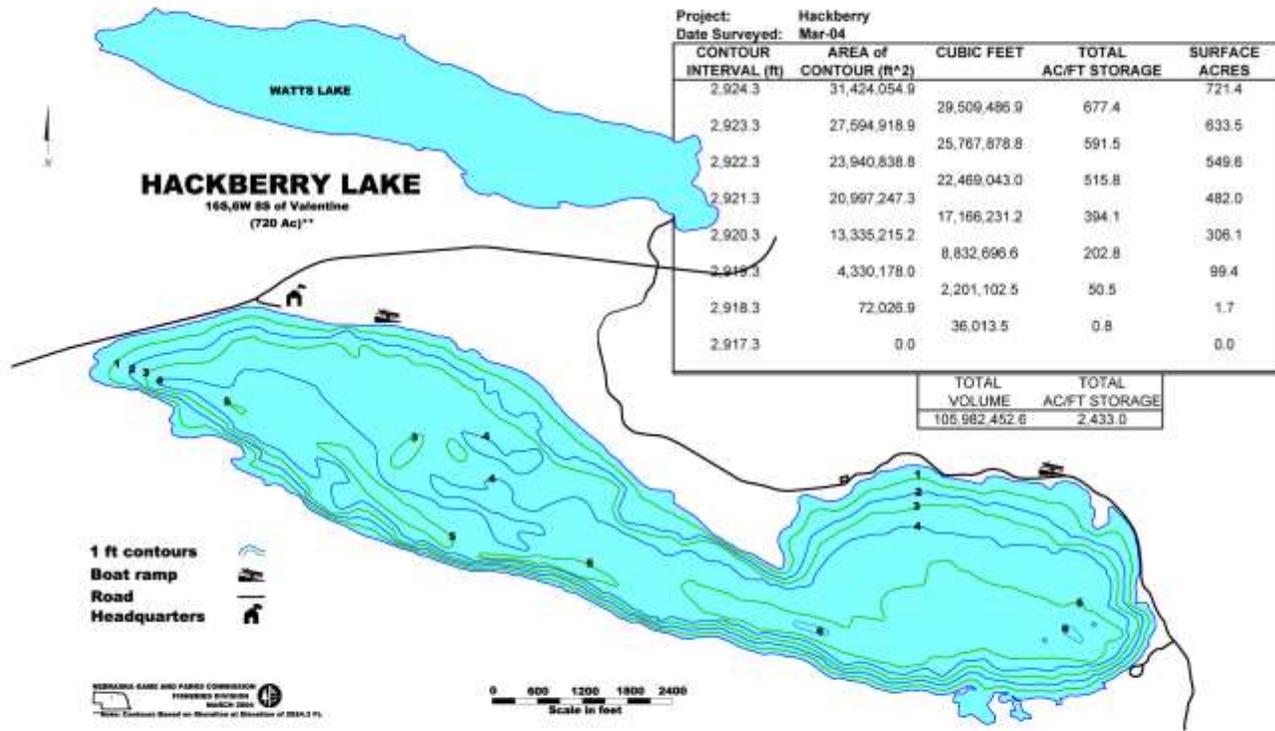
F. HABITAT MANAGEMENT

1. General

The 71,772 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 some 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. Low water in larger lakes and wetlands during the past few years has allowed Canada thistle to take off in the wetland margins. Grassland management is accomplished using permittee grazing and haying, prescribed fire, rest, and weed control.

2. Wetlands

There are 37 major wetland/lake areas on Valentine NWR that comprise about 13,000 acres. Lake elevations have been recorded at seven refuge lakes off and on since 1988. The water control structure at Willow Lake washed out in 1997. Low water conditions have made monitoring lake elevations more difficult, and in many cases the water does not come up to the gauge on the water control structure. Lake elevations were not recorded in 2004. Nebraska Game and Parks completed a topographic map of Hackberry Lake. The map is posted on their internet site. Hopefully, they will do other lakes in the future.



Regional DU Biologist Ryan Henniger was contacted for assistance in doing a wetland restoration. They are interested in the project to restore a wetland near to where Little Hay Road meets Highway 83. The wetland was partially restored by a beaver dam but unfortunately the beaver also decided to burrow under the highway.

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. Well readings in 2004 were almost universally lower than the long-term spring and fall averages. Three of the wells were dry on both the spring and fall check, which probably reflects the lower that average rainfall over the past six years.

Table F 2.2. Spring and fall USGS groundwater well readings, and the spring and fall averages as recorded from 1970-2004. Groundwater elevation is given for all wells for

which the elevation is known. For wells that the elevation is not known, an index value is given.

Well No.	Well Location	Spring	Spring Ave	Fall	Fall Ave
1	N. East Long	2873.5	2874.4	2872.3	2873.3
2	SE corner S. Marsh	Plugged	2894.6	Plugged	2893.3
3	SE corner Pony	2899.4	2899.6	2896.7	2897.9
4	SE corner Cow	2918.6	2919.3	2917.4	2918.5
5	Calf Camp & Hwy 83	2895.2	2896.4	2894.5	2895.2
6	Calf Camp West	2915.1	2915.5	2913.3	2913.8
7	Little Hay West	2915.4	2916.1	2915.5	2916.1
8	Little Hay & Hwy 83	2897.9	2899.4	2896.9	2898.3
10	W. Pony & Hwy 83	2921.6	2922.9	2921.0	2922.6
13	S. Willow	2916.0	2917.3	2916.0	2917.2
14	E. McKeel	2919.4	2920.1	2918.3	2919.1
15	S. East Sweetwater	2924.3	2925.1	2923.6	2924.7
16	SE Trout	2897.9	2899.0	2897.1	2898.8
17	E. Crowe Headquarters	94.7	95.3	95.2	95.1
20	S. Watts	2923.8	2924.8	2922.5	2924.2
21	E. Pony Pasture	2923.7	2925.0	2923.0	2924.5
22	Hackberry-Dewey Canal	2923.3	2923.7	2922.8	2923.2
23	Badger Bay	2923.3	2923.7	2922.7	2923.8
25	E. Pelican	2942.4 ^a	2943.8	2942.4 ^a	2943.4
26	E. West Long	2963.0	2965.3	2962.5	2965.3
27	W. Recreation Area, Dad's	2955.6	2957.7	2954.5	2956.5
29	NW Pelican	2948.7 ^a	2948.3	2948.7 ^a	2947.7
30	S. Dewey Marsh	2939.4	2940.6	2938.6	2939.5
31	W. Dewey Marsh	97.3	98.3	97.2	98.6
32	N. Pelican	2941.1	2941.6	2939.5	2941.0
33	NW West Long	2978.6	2980.6	2977.3	2979.8
34	Hwy 83 & W. King Flats	2923.3	2924.1	2922.3	2923.9
35	SE "21" Lake	95.0	96.2	93.7	95.5
36	W. Sweetwater & Hwy 83	2926.3	2927.2	2926.3	2926.4
38	SE West Twin	2920.2	2920.6	2918.8	2920.0
39	SW Hassle Place	93.0 ^a	94.5	93.1 ^a	94.1

^a These wells held no water, only damp sand at the bottom.

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 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.

7. Grazing

In 1985 the refuge habitat management program was changed and short-duration grazing started. Prior to 1985, much of the refuge grassland was grazed on a six week rotation. Authorized AUMs for each of the permittees have remained about the same when compared to 1997 levels. In 2004 there were five permittees in the program. All have had permits for many years. Several have reduced their herds in response to the drought. Grazing rates were reduced to compensate permittees for the added expense of moving cattle for short duration grazing. This year some grazing was also advertised under a bid system. Notices for the grazing and haying were put in the local papers. Existing and former permittees were also contacted. No bids were received for the grazing which was to be for 300 head for one month. Two bids were received for the haying.

Trespass cattle were removed from the areas around East Long Lake and Devils Punch Bowl and the water gaps repaired. These areas and Coleman Lake are a constant source of problems with trespass cattle.

The contract fencer working on the west side of Valentine National Wildlife Refuge was fired. He was doing a poor job and billing for 2 people when only one person was working on the fence.

Grazing fees for 2004 were:

spring grazing treatment	\$17.07/AUM
short-duration grazing	
1 day in unit	\$9.84/AUM
2 days in unit	\$15.24AUM
3 days in unit	\$17.07/AUM
4 days in unit	\$17.80/AUM
5 days in unit	\$18.16/AUM
6 days in unit	\$19.53/AUM
7 days in unit	\$19.90/AUM
8 or more days	\$20.36/AUM
in unit	
fall	\$20.36/AUM
winter	\$20.36/AUM

The full rate of \$20.36 is an increase of \$1.00 per AUM (the maximum increase permitted per year by policy) from the 2003 fee and is based on a rate survey conducted by USDA and published in Nebraska Farm Real Estate Market Developments. The market rate as determined by USDA for this area in 2004 was \$21.60/AUM. The rates for different classes of animals were also changed in 2003 and we now use the US Department of Agriculture Statistics Board conversion factors. Mature cow stayed at 1.00; mature cow with nursing calf went from 1.25 to 1.32; yearling went from .75 to .70; bulls from 1.00 to 1.50; and horse from 1.00 to 1.20.

Permittees also had their grazing bills reduced for improvements and repairs to wells, fence, tanks and other facilities needed for the program. In 2004, about \$49,000 was spent on improvements and deducted from final billings. Several projects were not completed and may be done in 2005 using 2004 funds. 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 five permittees. They were paid \$30 per hour for a crew of two, and supplied their own gas, tools, vehicle, and equipment. Total fees for the 2004 grazing season will be about \$23,000. 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 Table F7a.

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 two weeks. Cattle eat or trample almost all of the residual cover. They also over graze 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, such as Kentucky bluegrass, are suppressed and native warm seasons, such 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 five years following treatment. In 2004, 15 habitat units totaling 3,058 acres received a spring grazing treatment and included some areas that were later hayed.

b. **Spring Short-duration Grazing**

Spring short-duration grazing (ES-SD) is grazing a unit for less than two weeks during May. Generally the cattle are in the unit for only three to five 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 2004, 4 habitat units totaling 1,261 acres had spring short-duration grazing. Where possible units grazed later in summer the previous years 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 two weeks. Most units are grazed only three to five 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 2004, 51 habitat units totaling 12,114 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 re-growth 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 two weeks or longer. In 2004, no acres were summer grazed. These are

usually 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. Fall grazing eliminates both winter cover and nesting cover in the following year. Some units were fall grazed in 2004 that will be given a spring grazing treatment in 2005. One unit was fall grazed after being hayed. This adds fertilizer to the soil and eventually quality and quantity to the hay harvested. In 2004, 2 habitat units totaling 382 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. 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. Winter feeding can also be used to stabilize roads. In 2004, 4 habitat units totaling 374 acres were winter grazed.

g. **Fire**

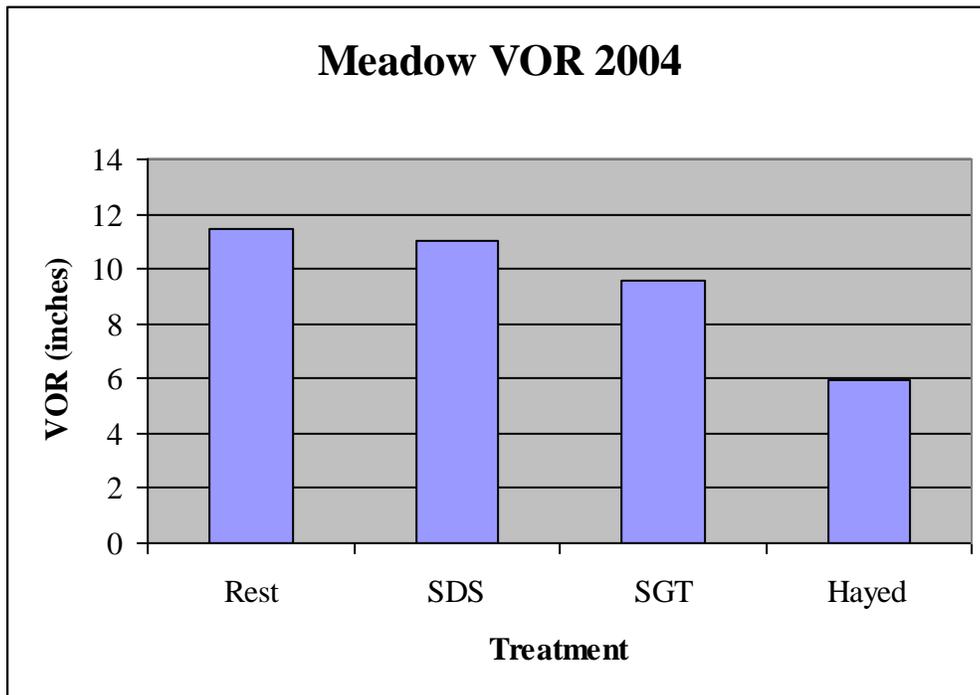
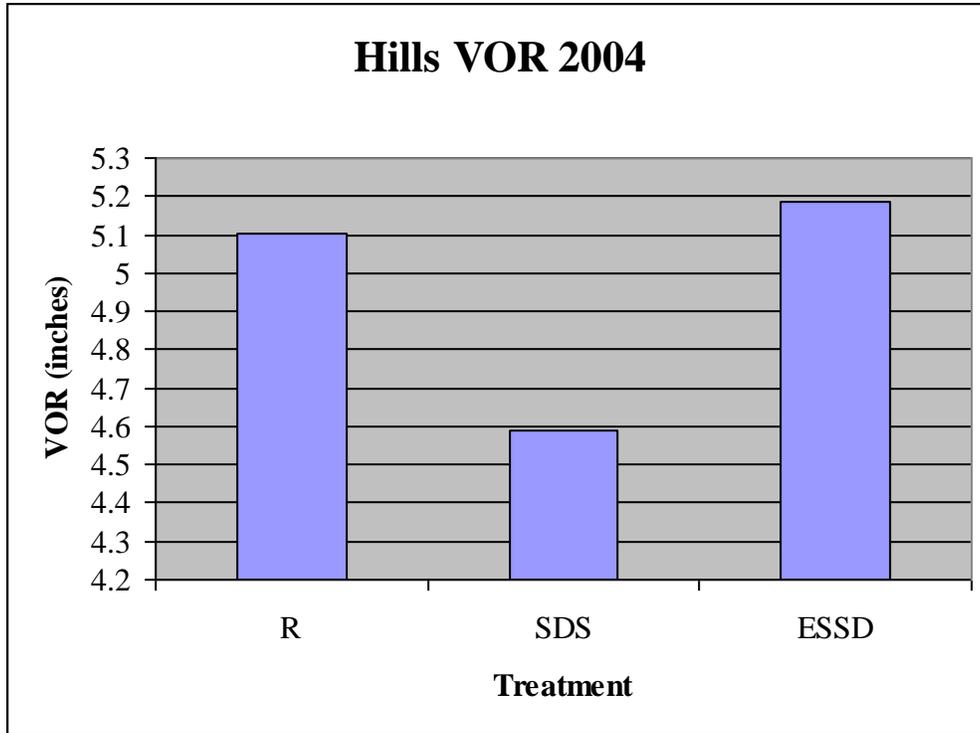
Prescribed fire (P) and natural or wildland fire (N) are discussed in the fire section. Only one prescribed fire was done in 2004 and it escaped (see section F-9).

Table F 7a. 2004 HABITAT MANAGEMENT SUMMARY				
Treatment		Units	Acres	AUMS
Rest	rest (R)	224	42,071	----
Spring	spring grazing treatment (SGT)	15	3,058	1,134
	early spring short duration (ES-SD)			
	ES-SD 1-6 days	3	745	179
	ES-SD 7-9 days	1	516	72
Summer	short duration summer (SD-S)			
	SD-S 1-3 days	27	3,557	671
	SD-S 4-7 days	23	8,263	1,210
	SD-S 8-14 days	1	294	29
	summer (S) 15-27 days	0	----	----
Fall	fall (F)	2	382	135

Winter	winter (W)	4	374	583
Hayed	hayed (H)	12	771	
Fire	prescribed fire (P)	4	484*	----
	natural fire (N)	2	86	----
*Includes acres burned after the prescribed fire escaped the intended burn unit.				
**Note: some habitat units received double treatment, primarily hayed units that were also spring grazed (SGT) or fall (F) grazed units, or rest (R) units that had N or P fires.				

Monitoring

In 2003, a set of random transects were established across Valentine NWR to monitor vegetation. These transects are designed to monitor long-term vegetation changes and to gauge how well refuge management objectives are being met. The refuge was divided into seven areas (Fishing Lakes, Wilderness, Hay Flats, Marsh Lakes, Pony Lake, King Flats, and East End), and a grid system was placed over each area. The grid system was used to locate random points for the start of each transect. In 2003, 202 transects were placed in the field, and vegetation data was collected. One hundred fifty-six of these transects were located in upland (sands and choppy sands) sandhills units, and 46 were located in subirrigated meadow units. In 2004, 70 upland transects were repeated, along with 22 meadow transects. For upland units, refuge objectives call for achieving mean visual obstruction readings (VOR) of 3 inches in disturbed cover, and greater than 6 inches in units that have been rested. In 2004, sampling indicates that these objectives are being met in the grazed units, and are close to achieving the minimum objective for rest (figure F7.1). It should be noted that the last six years have been drier than average, so it is not surprising that VORs in rest units are a bit low. May and June had the highest precipitation for the year, which may explain the good vegetation response in the ESSD units. In the meadow units, samples show that the VOR objectives are basically being met. Sampling in 2004 indicates that rest unit VORs are between the objective for 1 year rest and 2 year plus rest (10 and 12 inches, respectively), while all of the disturbed units (grazed or hayed) sampled were well above the goal of 3 inches (figure F7.2.). Again, timely rainfall probably helped units disturbed in 2004 to recover well. The May and June rainfall would encourage good growth following grazing treatments, and rain in September would have helped the hayed units recover.



8. Haying

About 771 acres of sandy, sub-irrigated, and wetland range sites were mowed and yielded 603 tons of hay. All or part of 12 habitat units were mowed and hayed. Hay production was fair this year even though we were in moderate drought status most of the year. The spring rains must have been enough to make the grass grow well in the meadows.

The method of charging for permittee hay was changed in 2001. Now hay is put up on a 50/50 split with the permittee taking half home and feeding the other half back on the refuge at the full rate of \$20.36/AUM in the winter treatment.

Some hay is still needed at Fort Niobrara NWR for the horses and exhibition herd. This year two hundred and forty four bales of hay were put up on bid in Habitat Units 31A and 32B2 at Valentine NWR. Sixty percent of the hay went to the bidder and forty percent was delivered to Fort Niobrara NWR for winter feed. This is the first time bidding has been used for obtaining hay for Fort Niobrara. We had to advertise two times to get an acceptable bidder. We had a bid on the first advertisement but it was below the minimum outlined in the invitation.

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 produced. In general we try to mow low sites with mostly reed and cord grasses.

Haying is used to provide fire protection for facilities, browse areas for Canada geese, sandhill cranes, prairie grouse, and deer and to provide hay to Fort Niobrara NWR. Mowing can also open up small wetlands for waterfowl pair habitat. Hay is also used in the winter treatment described under the grazing section of this report.

Areas to be hayed, in which we have found the endangered prairie white-fringed orchid in the past, were searched on foot. Searches were done when the plant was in bloom. Plants found were marked with lathe with orange tops and they area not mowed. Haying may be of some benefit to the orchid as most of the plants found on the refuge are in areas that are annually hayed.

9. Fire Management

Complete information for the Fort Niobrara/Valentine National Wildlife Refuge Complex fire management program can be found in the Fort Niobrara Annual Narrative.F-9

On April 19, a prescribed fire at the Willow Lake Marsh on Valentine NWR jumped the control line and burned 240 acres of refuge land above that planned. It also burned 9.6 acres of private land on the Young Ranch. Mutual aid was called in to control the escape. The escape was investigated by the South Dakota Division of Wildland Fire Suppression. The investigation found that plans were adequate and followed, that a dust devil likely carried the fire across the line, and that problems were encountered in controlling the escape. Problems identified

included a faulty radio system and engines not suitable for operation in the Sandhills. Two of the heavy Type 52 engines quickly became stuck when they drove into the hills. Prescribed fire was discontinued until the recommendations found in the report can be implemented. At the request of the private landowner, an electric fence was placed around the burn area of the private land. This was to exclude cattle. There was some negative reaction from the public but not quite as bad as anticipated.

The plan was to burn all of Habitat Units 16A2 and 16A3 and a small part of 4. The large cattail marsh was fairly dry and we did burn off some of the duff layer. Grasses in the higher areas also responded well. Most of the cedar trees also burned. Some willows and cottonwoods were also killed. Some sprouting was noted from willow and cottonwood. The escape burned 240 acres in Habitat Units 17 and 3C2. The escape burned in some of the roughest hills on the refuge. Grass also grew well here following the fire.

On 10 September 2004 the Vinyard Wildfire burned 85 acres of grassland in Habitat Units 18B7, 18A6, and 18A6. The fire was started by a hot wheel bearing on a boat trailer along the public road near the old Vinyard in Habitat Unit 18B7. The fisherman thought they had put out the fire and left. The fire started up again and was quickly pushed north by a strong south wind. Refuge, Valentine, and Purdum fire crews were called in to put out the fire.

The cedar tree grove to the east and adjacent to Hackberry Headquarters was thinned and trimmed. The work was done to make the area more secure should a wildfire burn up to the headquarters area.

Contractors, who will be writing a Wildland Urban Interface Fire Plan, visited Valentine National Wildlife Refuge in December. The plan will cover protection measures for occupied structures on and adjacent to the refuge. The plan had not been received by year's end.

In February, refuge staff assisted LaCreek NWR with prescribed burns.

In February, the burn piles at Hackberry Lake and Pony Lake were burned while we had snow on the ground.

10. Pest Management

An integrated pest management plan for Valentine NWR and Yellowthroat WMA was drafted along with pesticide use proposals. Twenty pests including 18 plants and 2 animals were included in the plan. Present staffing is inadequate to carry out most of the actions outlined in the plan. The plan was approved at the Regional and Washington Offices.

Some of the Canada thistle on Valentine NWR was sprayed with Rodeo during the year. This noxious weed has really increased in the past 2 years. It has sprung up in many new locations and is increasing in others. It is pioneering into areas dried up by the 3 years of drought we have had. It is growing mainly in areas where cattail and bulrush were growing previously. It has not grown much in bare soils such as mud flats, at least not yet. We purchased a second weed sprayer and are looking for a contractor to do some of the work. We have noticed a reduction in thistle in areas that we have sprayed with Rodeo the last 2 years.

All known patches of leafy spurge were fall sprayed with Plateau herbicide. Some areas we have been spraying are down to a few plants which can be spot sprayed.

A tour of Valentine NWR was provided to members of the Nebraska Leafy Spurge Task Force. The group held their annual meeting in Valentine this year. Refuge Manger Lindvall attended their meeting the next day. The new hot weeds for Nebraska are non-native phragmites and salt cedar. Both are causing problems along the Platte River. Here we have no salt cedar present. In fact the only plant known in the county is in the weed superintendant's front yard! We have areas with phragmites but according to retired biologist McDaniel they have not been expanding.

Purple loostrife was found at both Valentine National Wildlife Refuge and Yellowthroat WMA. Previously it had been noted in only one location in one year (adjacent to the rock boat ramp on Dewey Lake) on Valentine National Wildlife Refuge and not at Yellowthroat. At Valentine National Wildlife Refuge, 6 plants were found in unit 16E2 (42 31.665; 100 36.287) and one in unit 16E4 (42 31.510; 100 34.828). Both spots were sprayed with Rodeo and a search made for additional plants in the area. Both spots are just off public use trails. The seed may have come in on boat trailers of fishermen.

At Yellowthroat one small plant was located along the south fence adjacent to the school section (42 21.671; 99 50.009). This plant was sprayed with Rodeo. A search of the rest of the WMA will need to be made. Purple loostrife has been common along the Niobrara River for years and now appears to be moving into wetlands away from the river. Two patches along state highways were noted and reported to Nebraska Department of Roads. They sprayed these. The impact of this plant on wetland communities on the refuge and in the Sandhills could be significant.

A tree shears was used to cut 121 cottonwood, willow, cedar, and Russian olive trees growing in the ditches of the western half of Little Hay Road. The trees were cut with a Bobcat mounted tree shears. The stumps were treated with Roundup. About 100 smaller trees, mostly cottonwood, were sprayed on the

eastern part of the road. Road construction and maintenance on Valentine National Wildlife Refuge has resulted in trees coming up in the ditches. Of greater concern is the large number of cottonwood and willow trees pioneering into wetlands and lake edges due to the drought. If allowed to grow they will literally ring wetlands and lakes. This can already be seen in some Wetland Reserve and Conservation Reserve Program lands located off of the refuge. It is hoped that cutting, grazing, fire, and herbicides can be used to control the trees.

13. Easement Monitoring

Manager Lindvall and reps from the Natural Resource Conservation Service and Nebraska Game and Parks visited Wetland Reserve Program easements to prepare long term plans of operation and to monitor compliance. The easements range from 59 to 1,600 acres in size, and all have potential of providing good wildlife habitat. Our task is to develop grazing, haying, and wetland restoration plans (compatible use plans) that will benefit grasslands and wildlife. Violations were observed on some easements so it will likely be an uphill battle. All easements have also changed hands at least once since the WRP contracts were signed and the money paid out. This causes problems as the new landowners now have the easement but didn't get the payment.

Refuge Manager Lindvall along with NRCS and Sandhills Task Force staff went on two Wetland Reserve Program evaluations for new Wetland Reserve Easements. Both involve work on streams that are down cutting thus lowering the water table and drying up wetlands. Rankings were completed for both projects. Both are cost share projects with no easements and have been accepted into the program.

On December 15 Refuge Manager Lindvall, along with NRCS and Game and Parks staff, visited five Wetland Reserve Program easements for compliance checks and updating compatible use plans. Three of the five were in compliance with the plans. The two out of compliance had grazed areas not in the use plans. We are encouraging NRCS and landowners on two of the easements to work at removing trees around wetlands.

The refuge is responsible for three FmHA conservation easements. All were visited this year.

A special use treatment was issued for a spring grazing treatment on the west section of the Mead FmHA easement. The graze was designed to reduce brome and increase natives. Invading cedar trees were also cut as a part of the permit.

The Wagner FmHA Easement in Knox County was visited. The part of the easement north of the county road where FWS controls grazing and haying looks good except for the large number of Siberian elm trees coming up. This section

also has a new owner. The owner inquired through his state Senator if he could build a house on the land. The section lying south of the county road where FWS does not control grazing or haying looks over grazed though not as bad as in some years. No violations were noted on either section.

The Yellowthroat FmHA easement lies adjacent to the Yellowthroat WMA in Brown County. This easement was visited frequently in conjunction with visits to the WMA. A few trespass cattle were noted on the area in the fall. The landowner now lives nearby and helps keep trespass cattle off.

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 is 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. A bison vertebra, with the long spine that extends into the buffalo hump, was found along the dry shoreline of the Marsh Lakes at Valentine NWR in 2002, and a partial buffalo skull was found during the renovation of Hackberry Lake in 2004.

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.

Refuge wetland management is primarily accomplished to maintain wetland quality. Size limits on northern pike, capture of adults, and chemical renovation of lakes have all been used to reduce carp populations. Carp have detrimental effects on water quality, and subsequent plant and invertebrate production which play an important role in waterfowl production. Removal of carp has not been accomplished on refuge lakes, although renovations in the 1970's and 1980's removed carp for a few years. Current management using northern pike seems to be working to limit carp population growth.

2. Endangered and/or Threatened Species

a. Bald Eagle

An eagle nest was reported as being located about 200 yards east of the Valentine NWR boundary, east of North Marsh Lake. The nest was reported to the state and was checked for activity in the spring (April). No Bald Eagles were in the area; however, a great horned owl was using one of the existing stick nests this year.

No large concentrations of eagles were observed during 2004, although small numbers have been seen. Bald eagles use Valentine NWR primarily during migrations, and are usually seen on the refuge in low numbers during spring, fall, and winter.

b. Peregrine Falcon

Migrating peregrine falcons are usually observed traveling through Valentine NWR in the spring (generally April) and in the fall (generally Sept-Nov).

c. Whooping Crane

No observations of whooping cranes were made on Valentine NWR during 2004. Whooping cranes are occasional visitors to the refuge, sometimes stopping briefly during migration to feed on hayed meadows or rest on mudflats.

d. Western Prairie Fringed Orchid

The Western Prairie Fringed Orchid had a much better year on Valentine NWR in 2004 than in 2003. Searches this year turned up 53 flowering orchids, while searches in 2003 produced only 5 orchids. Twelve of these orchids were found in locations where orchids had not been noted in the past. All locations where orchids have been located were checked for orchids in 2004. Only 3 of the 10 locations where orchids have been located had blooming orchids in 2004. However, several of these historic locations had only small numbers of orchids, and the plants have not been observed there over the past several years.

Marge From (Henry Doorly Zoo, Omaha) has requested a renewal of permits to continue work on western prairie fringed orchids at Valentine NWR. She had been experimenting with raising the plants in the lab and then transplanting them into the wild at Valentine NWR. She has also worked on artificial pollination. Ecological Services biologists have added many new requirements to her obtaining a permit which she may not be able to meet.

e. Blowout Penstemon

Blowout penstemon, *Penstemon haydenii*, was listed as an endangered species in September 1987. This species is endemic to the Nebraska Sandhills, and grows in open sand blowouts that are generally found in choppy sand range sites. Blowouts result from disturbance and are maintained primarily by wind erosion, and blowout penstemon grows in and adjacent to these open sand areas.

Naturally occurring blowout penstemon has been documented at 5 locations on Valentine NWR, and at locations on the Ballard Marsh State Special Use Area and the Crowe Ranch adjacent to the refuge. From 1996-2001, blowout penstemon seedlings were transplanted into blowouts at various locations on the refuge. These transplants were done by Dr. James Stubbendieck, University of Nebraska-Lincoln, with a grant from the Nebraska Environmental Trust. During this period, approximately 8000 seedlings were transplanted onto the refuge. An additional 1078 seedlings were transplanted in 2004. Counts of surviving transplants were initiated in 1999, and there has been a slow decrease in the number of plants counted since the counts began. Unusually dry weather during the last 6 years may partially explain the decrease currently observed, but there are many unanswered questions about blowout penstemon life history that may also play a role.

Blowout penstemon surveys were completed during June. Biological technicians Johnson, Austin, and Jordening assisted in counts of all known locations. The number of vegetative plants held steady in 2004, while the number of flowering plants decreased (Table G 2.1). This continues the trend of a slowly decreasing population of *P. haydenii* on Valentine NWR.

Table G 2.1. Blowout penstemon (*Penstemon haydenii*) counts on Valentine NWR from 1999-2003. Most of these plants were transplanted into blowouts from 1996-2001 by Dr. Jim Stubbendieck.

Plant growth	2000	2001	2002	2003	2004
Vegetative	555	398	630	290	289
Flowering	848	829	462	733	630
Flowering stems	2426	3346	1217	3294	2250
Total plants	1403	1227	1092	1023	919

f. Wolves

No wolves have been present of Valentine NWR since their extirpation from NE around the turn of the century (late 1800's). There has been recent documentation of wolves in Nebraska, but none near the refuge. Deer hunters reported a wolf on the refuge in 2003, but the report could not be confirmed.

3. Waterfowl

a. Ducks

No specific data were collected on duck use or production at Valentine NWR in 2004. The spring waterfowl migration progressed normally, with a swell in duck numbers as birds headed for breeding grounds farther north. The fall migration

appeared to be reduced in this part of the Sandhills. Unusually warm weather in the Dakotas may have held the migrants farther north, with migrants overflying the Sandhills when the weather turned cold.

Two banded ducks were reported to the refuge in 2004. A band was recovered from a blue-winged teal after the duck hit a fence on private land north of the refuge. This bird was banded in Saskatchewan in 1999. A banded female gadwall was harvested on Duck Lake by Jim Matthews.

b. Geese

No specific records were kept on Canada geese in 2004. Many geese began using the refuge lakes as the ice went out in late February. Numbers built up until the lakes and small wetlands were ice-free, at which time the geese spread out and were not seen in big numbers. Several pairs were observed nesting, one of which was on a muskrat house in the restored wetland at the junction of Little Hay Road and Highway 83.

c. Trumpeter Swan

Trumpeter swans are observed periodically on the refuge throughout the year. In 2004, two pairs of nesting swans were confirmed on the refuge. The pairs were on a wetland southwest of Willow Lake in HU 16A3, and the other pair was on Center Lake. Incidental observations of these swans indicate that the pair in HU 16A3 produced 2 cygnets, while the pair on center initially had 3 cygnets, but only one survived.

Lindvall and Nenneman attended a meeting in North Platte to discuss trumpeter swan monitoring and population status in the central plains. Biologists from USFWS and Nebraska Game and Parks decided on survey procedures and the need for a new plan for the population in the Sandhills. LaCreek National Wildlife Refuge staff will prepare the plan and continue to monitor nesting and wintering swans. Shilo Comeau (LaCreek NWR) will be handling most of this effort for the FWS in our area. Staff at Ft. Niobrara and Valentine are encouraged to submit any observations of swans to either Mel Nenneman or to LaCreek NWR. If swans with neck bands are observed, an attempt to read the band would be useful.

4. Marsh and Water Birds

a. Sandhill Cranes

Some sandhill cranes stopped over at or near Valentine NWR on the fall migration. Several investigated the mudflats exposed by the drawdown of Hackberry Lake, but they apparently found the substrate too mucky for their

liking. Most cranes that stop make use of mowed meadows, and many were observed on Reece's hay meadow just north of the refuge.

5. Shorebirds, Gulls, Terns and Allied Species

The Hackberry Lake renovation was a big draw for fall migrating shorebirds. No attempts were made to identify the species or record numbers, but the west end of the lakebed was frequented by thousands of sandpipers as they made their way south.

7. Other Migratory Birds

The Breeding Bird Survey (BBS) route established during the biological inventory done by the National Ecology Research Center in 1991-92 was run again this year. The route was completed once on 27 Jun, which is later than the route is usually run. In the past, the BBS has been completed two times, once in late May or early June, and once in mid-June. Fifty-five species were recorded, with red-winged and yellow-headed blackbirds being the most abundant birds. No unusual birds were recorded on the route, and some waterfowl that are typically recorded were missed this year, perhaps because the route was done later in the year.

Information on and a nomination form for Valentine National Wildlife Refuge were provided to the Audubon Society for including the refuge as an Important Bird Area.

8. Game Mammals

Two pronghorn antelope were observed in HU 34A6 during July. Antelope are observed only very rarely on the refuge, so this observation is noteworthy.

a. Deer

The deer harvest on Valentine NWR was down considerably from the past 10 years. Deer registered at Nebraska Game and Parks Commission check stations indicated that 60 deer were harvested this year, compared to 90-100 deer per year for the past decade. The 2004 harvest on Valentine NWR included 45 white-tailed deer, 14 mule deer, and one unknown species. The breakdown for type of permit was 1 archery deer, 3 muzzleloader, 7 statewide youth, 4 statewide buck, 35 Sandhills, and 10 Calamus West. A breakdown of the age and sex of the deer harvest was not provided this year. It appears that hunter pressure was reduced this year, and deer numbers may have also been down due to EHD in 2003.

10. Other Resident Wildlife

a. Prairie Grouse

Greater prairie chickens and Sharp-tailed grouse occur in nearly equal numbers across Nebraska, with the prairie chicken being more abundant in the central and eastern grasslands. Sharp-tailed grouse are more abundant in the western part of the state, and throughout the Sandhills. Lek counts were conducted on the state study block area during the month of April. Counts on the refuge outside of the state study block were not completed. Lek numbers are similar to 2003, but total grouse numbers increased in 2004. Lek counts in the state study block yielded 15 prairie chicken leks with 171 booming cocks, and 9 sharp-tailed grouse leks with 141 dancing males. Counts in the state study block recorded 15 prairie chicken leks with 116 booming males and 8 sharp-tailed grouse leks with 70 displaying males.

Grouse hunting opened on 18 Sept. Opening weekend was hot and windy, but hunters were still able to bag some birds. About 45% of the reported grouse harvest occurred in Sept., as hunting pressure dropped off gradually through the rest of the hunting season (30%, 20%, and 5% of the harvest occurred in Oct, Nov, and Dec, respectively). Almost half (47%) of the grouse hunters on Valentine NWR were from out-of-state.

During the hunting season, hunters are asked to voluntarily place one wing from each prairie grouse they harvest into one of five collection boxes on Valentine NWR. This collection affords a way to assess hunting pressure, harvest, and productivity of prairie grouse. Similar collection boxes are placed at Crescent Lake NWR, S. R. McKelvie, and Halsey National Forests. During the 2004 hunting season, 214 hunters reported taking 306 prairie grouse on Valentine NWR. Two hundred seventy of these were sharp-tailed grouse, 35 were prairie chickens, and one wing was from an unknown grouse (species was unknown or no wing was submitted). The Juvenile:Adult harvest ratio for sharp-tails was 1.92, and for prairie chickens was 1.50. The total harvest and Juvenile:Adult ratios during 2004 indicate that prairie grouse numbers and productivity were continued to improve following a very poor year in 2002. The total harvest and the juveniles to adult ration both fell short of CCP objectives for the year (minimum target sample of 350 grouse wings with juvenile/adult harvest ration greater than or equal to 2.5 juveniles/adult). Although CCP objectives were not met, it is encouraging that the harvest (and apparently the prairie grouse population) has increased from 2002 levels.

b. Ring-necked Pheasant

No systematic surveys were conducted for pheasants during 2004. Observations by refuge staff and conversations with hunters indicate that pheasant numbers are good. Mild winter conditions and lack of hard winter storms has probably helped pheasant populations over the last two years. Dry conditions and lower lake levels may be improving conditions for pheasant production, as annual forbs germinate along the expanded lake edge, providing a ready food source. Lower

lake levels may also provide more nesting cover for hen pheasants in the now dry emergent vegetation along the lakeshore.

c. Merriam's Turkey

Turkeys typically occupy the area around Hackberry Headquarters, Pelican Lake subheadquarters, and Pony Lake subheadquarters year-round. Turkeys were not observed roosting in the pines at Hackberry HQ as often in 2004. The reason for this shift in behavior is not known, but the birds are still regular visitors at the headquarters.

d. Gray partridge and Bobwhite Quail

One bobwhite quail was spotted near the Quonset at Hackberry Headquarters during the winter. It was only observed once. A small covey was reported near Pony Lake by a hunter. Quail are uncommon in this area, and infrequently observed on the refuge.

e. Reptiles, amphibians, and others

Dr. Jeff Lang submitted a draft final report based on his 2002-2003 research at Valentine NWR. This work was funded by the Nebraska Department of Roads (NDOR) and a U.S. Fish and Wildlife Service Challenge Cost Share. The main goals of this research were to: 1.) Determine levels of road mortality along Highway 83, 2.) Investigate the effectiveness of turtle fences in conjunction with existing culverts in allowing turtle movements between wetlands and reducing turtle mortality, 3.) Assess short and long-term effects of road-related turtle mortality on the health of the Blanding's turtle population at Valentine NWR, and 4.) Develop a comprehensive management plan for the long-term viability of Blanding's turtles inhabiting wetlands adjacent to Highway 83 on Valentine NWR. Dr. Lang salvaged 175 road-killed Blanding's turtles along Highway 83 during the course of study. Fenced road crossings showed a reduction in numbers of turtles killed, and road killed turtles were found most often at the Little Hay and Ballard's Marsh road crossings (both unfenced). Some turtles were road-killed at the fenced locations and apparently went around the end of the fence or were able to crawl under opening in fence caused by erosion. The turtle mortality observed on Highway 83 is below what is believed to lead to declining turtle populations. However, the mortality observed was considered a minimum index of the actual road mortality, so reducing these road mortalities is recommended. Specifically, placing turtle fences in the Little Hay and Ballard's Marsh valleys is recommended, and NDOR has agreed to fund placing these fences. Overall, Dr. Lang found a very healthy population of Blanding's turtles on Valentine NWR. His population estimate for the refuge is >100,000 Blanding's turtles, making the refuge the largest known population for the species. The size and health of this population makes it a valuable biological resource. Recommendations for the refuge include continued monitoring of the species through general observations to augment information collected in 2002-03,

documentation of mortality (see below), recording additional Blanding's turtle occurrences, and encouragement of future Blanding's turtle studies.

On 16 Jan, Lindvall and Nenneman picked up 44 dead Blanding's turtles at Rodger's potholes. The turtles covered a broad size range, although most were larger individuals. The cause of death for these turtles is unknown. Two of the turtles were marked. Turtle die-offs have been noted in the past on the refuge, and by private ranchers.

A meeting was held on August 31 with personnel from Nebraska Game and Parks, Valentine NWR, Nebraska Department of Roads, and Dr. Lang to locate and design additional fences to keep Blanding's turtles from being hit on Highway 83. Department of Roads plans on constructing the fences on the refuge (Little Hay valley) and at the state's Ballard's Marsh WMA. It appears that these fences will not be installed until fall 2005.

11. Fisheries Resources

The annual coordination meeting for fish management on the refuge was held on March 25 at the Valentine Fish Hatchery. Refuge, Nebraska Game and Parks, and South Dakota State University personnel were present. Items covered were; results of the 2003 surveys, pike winter food habits and planned research, creel survey results, opening additional lakes to fishing, crappie stocking, pike removal from West Long Lake, Hackberry Lake renovation, and carp die offs. Planned pond repairs at Fort Niobrara National Wildlife Refuge and water management at Yellowthroat WMA was also on the agenda.

Jeff Jolley, graduate student from South Dakota State University, started a portion of his fishery research at Valentine NWR. He brought a crew down to sample pike food habits on Pelican Lake. We are interested in winter predation on carp by pike. He collected samples by pumping pike stomachs on fish his crew caught and collecting stomachs from pike that other fishermen caught and kept. Jeff also sampled fish on the Marsh Lakes. The study plan was to evaluate perch populations in a lake not open to fishing. The Marsh Lakes at one time had a strong perch population. Jeff found few perch, turbid water, and an abundance of many age classes of carp. He will do his perch work on a lake off the refuge.

"21" Lake on Valentine NWR had a winter kill of carp. The lake level is very low due to the drought. Coyotes and bald eagles were feasting on the carp. Marsh Lakes also had at least a partial winter kill of carp. This kill was noted in mid-month and probably happened later than the kill at "21" Lake. The carp in both lakes looked to be mostly large adults. The kill on the Marsh Lakes was unfortunately not complete.

At our request, the following stocking was done by the Nebraska Game and Parks Commission on the fishing lakes. Clear Lake received 8,000 crappie (863 fish/pound, 9.3 pounds) on August 3. On October 21 an additional stocking of

4,698 larger crappie (87 fish/pound) was made. These stockings are the first in series designed to establish a crappie fishery in this lake. The first stocking for the recently renovated Hackberry Lake was made on October 14 when 86,250 bluegill (3,450 fish/pound) were put in. Three thousand fingerling perch (4 inch) and 26,000 bluegill (1-1.5 inch) were stocked in Rice Lake at our request by the Valentine Fish Hatchery. The lake level is low so the stocking might not work but the state was looking for a home for the fish.

In addition to stocking, fish were moved between refuge lakes on two occasions. In March, Valentine Fish Hatchery staff used trap nets to capture northern pike and perch for egg collection. The 149 pike caught in West Long Lake were put in Dewey Lake in an attempt to take predation pressure off of perch and bluegill. There are no carp in West Long Lake so pike are not needed for carp control. Two hundred perch were taken to the fish hatchery for egg collection and then returned to West Long Lake. Fifty bluegill, 24 perch, and 7 bullheads were transferred to Schramm Aquarium. Salvage done as part of the Hackberry Lake renovation project is described under that project.

Nebraska Game and Parks biologists did a lake survey of Hackberry Lake using their survey boat. They produced a lake map showing depths for the basin. They provided us with a digital copy and it is also posted on their web site. The map is in the wetlands section of this report.

A Cooperative Conservation Initiative Grant was received to renovate Hackberry Lake in 2004. The refuge received \$24,544 which was used for diesel fuel for the pumping, rotenone, and repairs to equipment. No funds were available to cover labor costs to the refuge. Our partner in the project was the Nebraska Game and Parks Commission which contributed \$44,080. Their contribution came mostly as the cost of sport fish for re-stocking which was \$42,160. They also supplied labor and equipment for sport fish salvage and rotenone application.

Game and Parks staff used electro-shocking and trap nets to capture sport fish in Hackberry Lake prior to the renovation. They used 20 nets between August 9-13 and electro-fished for 2 days. They caught and transferred 207 northern pike, 49 bass, 190 perch, and 10 bluegill. Most of the fish were put in Dewey Lake. Some were taken to the State Fair for display. They used 20 frame nets set for the week of August 9 to 13 and 3 days of electro-fishing to collect the fish. Biologically the effort was not that important but it seemed to appease the public concern over loss of sport fish. News release on the salvage and renovation efforts appeared in local media.

A letter from the Corps of Engineers was received stating that the project was covered under the Nationwide Permit for Temporary Dewatering. A water quality certification permit was also received from the Nebraska Department of Environmental Quality. There was considerable delay in getting the DEQ permit as the paper lost the public notice. We didn't start the pumping operation until the

first part of August. It would have been better to start in July. An earlier start would have helped dry out the extensive mud flats and consolidate sediments. Also August was unusually cool which slowed drying.

The Crissifuli pump and drive motor were set up on the south west part of Hackberry Lake. The pump intake was at 42' 33.444"; 100' 39.229" and the discharge at 42' 33.409"; 100' 39.190". A ditch about 100 yards long a 4 feet deep was dug out into the lake to bring water to the pump. This ditch also provided boat access for the rotenone application. The culvert west of the pump was blocked to prevent water from coming back into the lake.

Pumping was started on August 3 with the Hackberry Lake level at 2,921.575 feet above sea level. At this level the lake contained about 430 acre feet of water. The lake volume was from a lake survey map compiled by Nebraska Game and Parks. . This level was lower than the normal for Hackberry due to several years of drought. Several problems were encountered during the pumping operation. The pump often shut down for no apparent reason. This was fixed by changing the automatic shut off from running off the discharge water to running off the top of the discharge hose. Once we got the pump going good, water backed up and started flowing back into the lake. The ditch could not carry it away fast enough. This was fixed by lowering the level of Dewey Lake and raising the Hackberry Lake dike. If this lake is renovated again it would be good to clean out of the Hackberry to Dewey ditch as well as raise the Hackberry dike. The drive shaft on the pump also broke once and the motor required one repair. We borrowed LaCreek NWR's pump while ours was being repaired. It was about a full time job for one person to keep the pump serviced and running. About mid way through the pumping operation a mesh fence was put up at the intake to prevent turtles from entering into the pump and being killed.

We ran the pump full time until September 13. At this time there was not enough water coming to the pump to run it continuously. We then ran the pump intermittently through September 18 at which time we discontinued pumping. All together we ran the pump an estimated 704 hours. For the first week the hours meter on the motor was not working so we estimated pumping time from a log.

In September many large carp were noted dead and dying even before the treatment with rotenone. Large numbers of pelicans, cormorants, and gull were also feeding as the lake was drawn down. Many small carp, bluegill, perch, and bass also went through the pump unharmed and went down into Dewey Lake. Great numbers of shorebirds also took advantage of the extensive mud flats to feed. Three old buffalo skulls were found in the mud on the lake bottom.

On September 20 the lake level was 2,918.055 above sea level. We had pumped 3.5 feet of depth off the lake. A GPS unit was used to measure 24 surface acres in the five pools of water remaining. The water depth was measured in the pools and varied from 10 to 16 inches at the deepest points found. The water was very

turbid and there were still many large live carp present. There were no springs flowing from the shoreline into the lake.

On September 20 it rained .71 inches overnight. On September 21 it rained .31 inches. We treated the lake with rotenone on September 21. Two airboats with spray rigs and a 6X6 ATV with a sprayer were used to apply the chemical. We started off using some old rotenone obtained from LaCreek NWR. This chemical had little effect and we switched to the new rotenone. This worked better but there were still live carp present at the end of the day. The low water temperature and large amount of suspended solids in the water most likely slowed response and lowered the effectiveness of the rotenone. We ended up using 150 gallons of the new 5% rotenone. The overnight rain also started several springs flowing. Drip stations were placed on these. Great numbers of large carp were seen dead following the treatment. Only two dead small carp were seen and no game fish. It is believed that the gulls, cormorants, and Pelicans consumed all fish in the smaller size classes.

On September 22 we checked and found and removed two large carp, barely alive, in the lake. We also placed small carp, bluegill, perch, and bass in a minnow bucket and put them in the lake. The game fish died quickly and the carp were dead the next day. We repeated this again and the sentry carp again died overnight from September 23 through 24. We saw no live carp after September 22. The water temperature measured 12.2 degrees Centigrade on September 23. We feel that we got a complete kill. In hind sight it may have been better to postpone the rotenone application and run the pump for a day or two until the springs stopped flowing. More carp in the remaining water may also have died due to stress. This may have cleared up the water and made treatment possible using less rotenone.

The ditch leading to the pump was filled in using the spoil from the excavation. Quite a bit of silt built up below the discharge end of the pump. This dirt was dug from the wetland and piled on the upland. When it dries, it will be used to build up the dike.

Water began slowly filling up the lake as soon as pumping ceased. The water was at 2,919.12 feet above sea level on October 6, 2004. On October 14, 2004 Nebraska Game and Parks stocked 86,250 bluegill (3,450 fish per pound). The fish came from the Valentine Fish Hatchery and were ones they had no place to hold them. More stockings of bass and perch will follow.

Wayne Stancill and crew from the Fisheries Assistance Office in Pierre came down and sampled some of the fishing lakes using electro-shocking and nets for the annual fisheries survey. Clear, Dewey, and Pelican lakes were sampled this year, and summary information from this effort is provided here. On Clear Lake, sampling was done with trap nets and gill nets during the first week of Sept. Electrofishing was not done as it is ineffective in shallow water. Sampling of

largemouth bass has been hampered in recent years due to the low water. Bluegills in Clear Lake were not sampled in trapnets in 2004, and only 23 substock fish were netted in 2003. Strong year classes in the mid 1990's and those in 1999 and 2001 have failed to recruit to larger sizes. Yellow perch catch has fluctuated greatly, and the catch per unit effort was low in 2004 (<3 fish per gillnet night and <16 fish per trapnet night). It did appear that some of the 2003 perch recruited to larger size classes in 2004. It is thought that poor recruitment in bluegill and perch is related to large predator populations and poor escape cover. Northern pike catch per unit effort has been low, but relative weights of the fish sampled were good. Catch per unit effort for pike decreased following the regulation change allowing harvest of pike <28 inches, but the catch of preferred and larger fish increased. However, the total abundance of larger fish is now declining. Low water conditions are believed to be reducing spawning habitat for game fish as less shoreline vegetation is available. Angler harvest may be having an additive effect on pike populations, rather than a compensatory effect. Common carp apparently had a good spawning year as the catch per unit effort jumped in 2004. However, it does appear that northern pike are controlling carp recruitment as no carp collected was >160 mm, and apparently no carp from a strong 2002 year class recruited in 2003.

Dewey Lake was sampled with both electrofishing and nets during the first week of Sept. Bluegill relative weights were above average in 2004, and it appears that fish sampled in 2003 recruited to 2004 as fish of quality size made up a greater percentage of the 2004 catch. No bluegills of memorable or trophy size were caught. Common carp catch increased dramatically over the past 4 years, reaching abundance similar to sampling in 1994 and 1999. This increase in carp is a result of a strong 2004 year class, so pike predation may prevent these fish from recruiting in 2005. Yellow perch numbers have fluctuated, but were higher in 2004. The number of quality and preferred perch was similar to 2003, but there was an increase in sub-stock and stock-sized perch. Relative weights of perch have been at or above average, so lack of food is unlikely to influence recruitment. Perch are vulnerable to predation throughout their life because of their body shape. Based on relative weights, largemouth bass appear to be doing well in Dewey Lake. In 2004, all bass sampled had relative weights that were higher than average, although the total sample was relatively small. The substrate for much of Dewey Lake is a poor base for nest building fish like bass, so recruitment is likely to be low. Northern pike seemed to be doing well in 2004, as the catch per unit effort was the highest recorded in the 1009-2004 data. Many of the pike sampled were of quality size or better, with roughly one third being preferred to memorable.

Hackberry Lake was not sampled in 2004 as it was undergoing drawdown and chemical renovation.

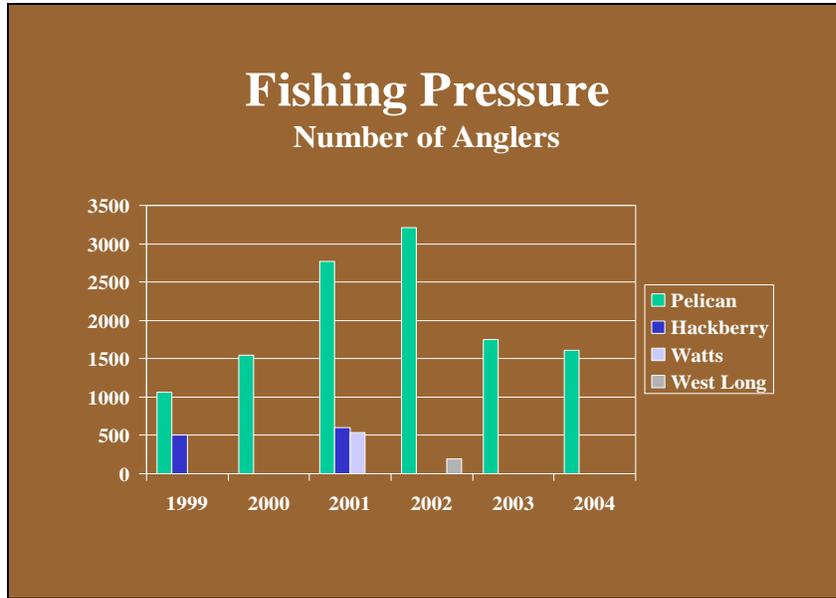
The fisheries survey of Pelican Lake was able to incorporate both electrofishing and netting. Bluegill catch per unit effort rebounded to 119 fish/hr in 2004 after

falling to 46 fish/hr in 2003. Relative weights of bluegills were good in both years, indicating good growth. The 2004 sample was dominated by fish of stock length or less, with very few quality or better sized fish sampled. Similarly, most largemouth bass sampled were of substock size. Yellow perch were sampled only in small numbers, and most fish were of substock size. Common carp catch per unit effort went from 12 fish/gillnet night in 2003 to 1.8 fish/gillnet night in 2004. The young carp that dominated the 2003 catch did not appear to recruit into 2004. Northern pike in 2003 and 2004 was equivalent to or higher than most years sampled (1992-2004), and contained a larger proportion of larger fish. There was a decrease in catch per unit effort from 2003 to 2004, and the decline appeared to be concentrated in the larger size classes. The relative weight of most size classes of northern pike were at or near 100, but tended to decrease as fish size increased. The summary for Pelican Lake suggests that the fishery for bluegill, largemouth bass, and yellow perch is limited. The number of bluegills increased from 2003 to 2004, but the number of larger fish decreased. Young of the year bass and perch are captured each year, but recruitment to larger size classes is poor. Sampling indicates that carp are spawning, but also failing to recruit to larger sizes. The preferred size class of northern pike appears to present excellent angling opportunities.

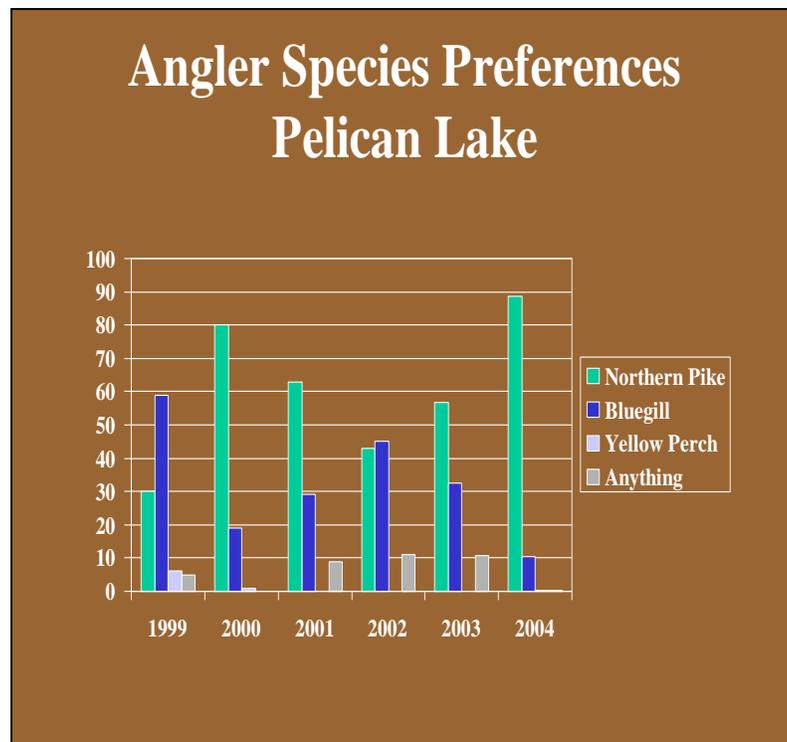
Dissolved oxygen levels were measured on Rice, Duck, Watts, and Hackberry lakes on 23 Feb. Rice Lake may have frozen solid earlier this winter, and the maximum water depth appeared to be about 3 feet. Dissolved oxygen was measured at 52% and 57% saturation (roughly 6.8 to 7.5 mg/L). Percent saturation below 60% and above 125% are considered poor, although the approximate mg/L have not crossed the critical threshold for fish survival (2 mg/L). Dissolved oxygen readings on Duck Lake were at 141%, into the poor range, and on Hackberry were mixed (one low at 52% saturation and one high at 194% saturation). Watts Lake had two readings in the excellent range for fish survival, at 108 and 115% saturation. None of these one-time measures is indicative of a fish kill; however, conditions on Rice Lake looked pretty poor for fish survival.

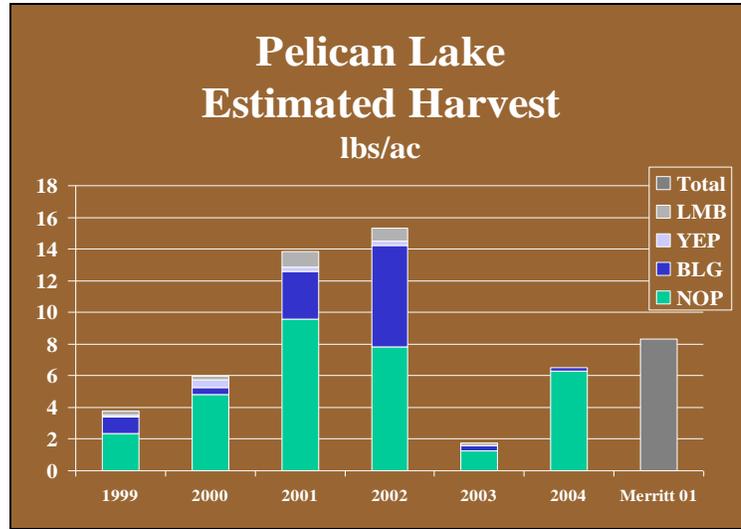
Nebraska Game and Parks conducted creel surveys during the winters of 1999-2004. Pelican Lake was the focus of the creel surveys. The work was done out of their Bassett Office. The following graphs were provided by Joel Klammer, a fisheries biologist for Nebraska Game and Parks. The data show a shift in the fishery from bluegill to pike at Pelican Lake. Pelican had been noted for its trophy class bluegill. The world record bluegill for ice fishing was caught here. As the bluegill fishing declined, fishing for pike improved. A new set of anglers took advantage of the increase in pike. Surveys also showed that anglers were following the size restrictions for northern pike. Complete records for this work are available from Nebraska Game and Parks.

Slide 1



Slide 5





17. Disease Prevention and Control

Chronic Wasting Disease (CWD) was found in a deer shot during the hunting season in the Grand Island area, and in the area south of Crookston. Further sampling is being conducted by the Nebraska Game and Parks Commission. CWD has now been detected to the west and southeast of the refuge, with a couple of big leaps in the know distribution of this disease. Nebraska Game and Parks did additional sampling this year on deer shot on Valentine NWR during the rifle season. None of these deer tested positive for CWD. CWD planning for the refuge includes conducting aerial counts of deer to determine their density on the refuge, targeted sampling of deer exhibiting symptoms, and cooperating with the state to continue sampling deer harvested on the refuge.

The Nebraska Game and Parks Commission made an effort to collect samples from deer harvested on Valentine NWR. The U. S. Fish and Wildlife Service provided \$4,000 to NG&PC to fund additional technicians for this effort. Hunters are asked if CWD tissue samples can be collected, and hunters with large bucks are reluctant to submit deer for testing. Of the 56 deer taken on Valentine NWR during the rifle season, 25 were tested for CWD, and all of which tested negative. The closest positive CWD deer was taken 11 miles south of Crookston, NE. This makes the closest know CWD positive deer only 22 miles northwest of the refuge. A total of 29 new CWD positive deer were recorded in Nebraska during the 2004 hunting season, and additional culling by the state showed 2 more positive deer.

Hunter perceptions about deer and CWD could have a large effect on deer harvest in the future.

H. PUBLIC USE

1. General

An effort was made to send at least one news release each month to local news outlets. The following were sent out and appeared at least in the local paper and on the radio station.

Project Bluestem Presented to Local Schools
Scouts Build Photo Blind for Valentine NWR
Prescribed Fire Escapes at Valentine NWR
Investigative Report Released for Escaped Prescribed Burn on Valentine National Wildlife Refuge
Trumpeter Swans Nesting on Valentine National Wildlife Refuge
Hackberry Lake Renovation
Crappie Stocked in Clear Lake.
Hackberry Lake Renovated by Removing Carp
4 H Club Builds Photo Blind for Refuge
Fort Niobrara Natural History Association Ski Trip

Nebraskaland Magazine put out their annual book for 2004 which is *Birding Nebraska*. The book has very nice write ups and photos of both Valentine and Ft. Niobrara National Wildlife Refuges.

An article, *Sandhills Ice Party*, featuring fishing opportunities on Valentine National Wildlife Refuge appeared in the January 2005 issue of Great Plains Hunting and Fishing Magazine.

The November issue of Nebraskaland Magazine had a very nice feature article on grouse hunting in the Dads Lake area of Valentine National Wildlife Refuge.

Refuge Manager Lindvall was on the KVSH Radio “Sportsman’s Show” taking about the Hackberry Lake Renovation.

Valentine National Wildlife Refuge participated in the latest visitor satisfaction survey. We did not have the time to contact the requested number of visitors to fill out the forms but we did the best we could in getting some done (33). Materials for the visitor satisfaction survey were also received late. Results of the survey were not received by years end.

Refuge employees Lindvall and Melvin helped with Cleanup Day held on April 30. The refuge crew and a crew from Valentine High School cleaned up trash at

the town operated shooting range. The cleanup is part of the My Town program for the city of Valentine.

Refuge Manger Lindvall and 10 Scouts from Troop 288 assisted with the Niobrara River Cleanup Day held on May 22.

2. Environmental Education

Project Bluestem environmental education CDs and plant wheels were purchased by the Ft. Niobrara Natural History Association and presented to Valentine Middle School, Ballards Marsh School, Simeon School, and Evergreen School. Simeon School sent us a nice report on the activities they did based on the information provided.

4. Interpretive Foot Trails

The Civilian Conservation Corps Nature Trail goes from a parking area on the west end of Hackberry Lake to the old fire tower constructed by the CCC. An observation deck is located inside the legs of the tower and interpretive panels teach about the geology, habitats, and wildlife of the Sandhills. The local 4 H club has adopted the trail and helps maintain benches, the trail, and plant id markers. They added to and replaced many plant id markers this year.

8. Hunting

Waterfowl hunting is permitted on Watts, Rice, and Duck Lakes. Seasons and bag limits are the same as those set by the state. The 2004 season was October 4-December 12 and December 18 – January 10. Only two hunters came out for opening weekend. This is the lowest number that anyone can remember. Ducks and hunters were scarce for the entire season. A rough estimate of the number of visits by duck hunters is 75.

Grouse season opened on September 18 and will run through December 31 with a limit of three. Most of the refuge is open to grouse hunting except the natural areas and around building sites. Turn out for the opener was moderate. We have noticed a decline in the number of hunters for grouse. Nebraska Game and Parks estimated that grouse hunter numbers declined from 20,000 in 1987 to 6,200 in 2002. The hunters that were out had good success. Hunter harvest is reported through voluntary wing collection boxes placed at five locations on the refuge. In 2004, the 214 hunters that turned in wing envelopes reported harvest of 306 prairie chickens and sharp-tailed grouse. Harvest is up from the past 2 years which were record lows. In some areas of the refuge, especially habitat units with abundant rose hips, the birds were plentiful. More complete information on grouse harvest can be found in section G10a.

Pheasant season opened on November 6 with 15 groups of hunters out. The season ran through January 31, 2004 with a limit of three roosters. Pheasant numbers were up this year and actually provided some good hunting for those with good dogs and strong legs to root the birds out of the cattail marshes. It appears that the drought has helped increase pheasant populations on the refuge. Many annual plants, preferred by pheasants, have grown up along the edges of lakes and in dried up wetlands. No counts were made of the number of hunters and we do not use the wing boxes for monitoring as we do with grouse. An estimate of 200 visits by pheasant hunters is made. Some people combine a pheasant hunt with a grouse, duck, or deer hunt.

Rifle deer season on Valentine National Wildlife Refuge ran from November 13-21. Hunter numbers appear to be lower than the past several years. Hunter success also appears down. It was also noted that most hunters only purchased one permit this year. In the past many hunters had 2 permits when checked. At the start of the season permits were still available for both the Calamus West and Sandhills units. Most of the deer hunting takes place on opening weekend. A total of 54 deer was recorded as harvested during the rifle season. More complete information on deer harvest can be found in section G8. Numbers come from records obtained at Nebraska Game and Parks check stations.

All of the refuge west of Highway 83 is in the Sandhills Deer Hunting Management Unit. This year a portion of the permits were buck only tags. For the past few years they have been 100 percent either sex. In 1995 Nebraska Game and Parks removed Valentine NWR and McKelvie National Forest from the area where antlerless only deer permits for the Sandhills Unit are valid. Starting in 1997, a statewide bucks only permit was also available. Some of these permits were seen being used on the refuge in 2004. This year there were also youth statewide permits available. We checked some of these of the refuge. The portion of the refuge east of Highway 83 is in the Calamus West Unit. The refuge probably receives about the heaviest hunting pressure of any location within the units but a quality hunt is possible especially if opening day is avoided.

The refuge is also open for muzzle loader deer hunting. The season runs from December 1-31. Hunting pressure for this deer season was light. We had been seeing an increase in the numbers of hunters for this season with the exception of this and last year. Only 3 deer were known harvested.

The refuge is also open to archery deer hunting which runs from mid-September through the end of December. Archery deer hunting is not permitted during rifle deer season. Only a few hunters were known to have visited the refuge for archery hunting. One deer was checked in and recorded as taken during archery season on the refuge.

Coyotes can be hunted on the refuge from December 1 through March 15. A free permit is required. The permit is a postcard that the hunter returns at the end of

the season. There is no charge for the permit. Running coyotes with dogs is not permitted. For the 2003-2004 season, 66 permits were issued and 30 returned (45 percent return rate). Eight successful hunters took 30 coyotes.

9. Fishing

Nine refuge lakes (Watts, Rice, Duck, West Long, Pelican, Hackberry, Dewey, Clear, and Willow) are open to fishing year round. Fishing, especially ice fishing, accounts for most visits to Valentine NWR. Willow Lake had a complete winter kill in the winter of 2002 – 2003 and there was a partial summer kill on Rice Lake in 2003. These lakes were open to fishing but received no fishing visits. Hackberry Lake received no visits after the renovation of the lake was started.

There was sufficient ice for ice fishing for 93 days from November 26, 2003 through February 27, 2004. Pike fishing was good just before the ice went out, especially on Dewey and Clear Lakes. Ice fishing for large bluegill has been popular on Pelican Lake. Fishermen had very poor success in 2004.

Refuge size limits remained the same as last year with a 15-inch minimum on bass and northern pike with a 28-inch maximum size limit (pike greater than 28-inches must be released). The state has a 15-inch minimum on bass for most public waters including the refuge. Minnows are prohibited on refuge lakes to prevent introduction of exotic fish. Gas powered boats are not allowed. Catch and release for bass and muskie remained in effect on Watts Lake. Saugeye were stocked in Watts and Duck Lakes in previous years. The state 15-inch minimum for this fish for lakes in western Nebraska applies to refuge lakes.

Numbers of ice fishermen visiting Valentine NWR has increased in January. On most weekends, 100 to 200 fishermen have been out. Fishing for northern pike has been good on several lakes. Fishing for panfish, especially bluegill on Pelican Lake, has been very slow. Fishing pressure dropped in June at Valentine National Wildlife Refuge. Pike and bass fishing on Pelican Lake was very good during May and early June.

11. Wildlife Observation

Blinds were placed for observation of both sharp-tailed grouse and prairie chickens this year. The blinds were put on leks in Habitat Units 32C and 30A2. People come from all over the country and even a few from foreign countries to watch the grouse display. In 2003 and 2004 grants for construction of two new blinds was received from the North American Photographers Association. Eagle Scout candidate Danny Lindvall and Troup 288 1 built one blind and the 4 H Club built a second (see section E.5).

People come to the refuge to bird watch and enjoy the prairie. No counts are made for this type of visit which seems to be on the increase.

12. Trapping

The refuge has a trapping plan and is open to trapping. No recreational trapping took place on the refuge in 2004.

17. Law Enforcement

Refuge officers started keeping logs of time spent doing LE work to document if we are spending the required minimum of 25 percent of our time on LE duties. In the fall during hunting season we easily meet this requirement. Lindvall and Kime both met the requirement. This year Lindvall assisted at LaCreek National Wildlife Refuge and with a detail at Boyer Chute National Wildlife Refuge which added hours. Meeting the requirement is difficult as we are short on staff and sometimes can not spend the needed time on LE.

Refuge Officer Lindvall worked on a law enforcement detail for the Lewis and Clark Exploration events held at Boyer Chute NWR from July 30 through August 4.

A motorist went off the road and wiped out the north kiosk on Highway 83. His insurance company paid for materials and for a local carpenter to replace the kiosk. No one was injured in the accident.

In August, Refuge Manager Lindvall assisted the ambulance and fire crew with a one car roll over accident on US Highway 83 on Valentine National Wildlife Refuge.

Refuge Officers Mark Lindvall and Kime attended LE Refreshers held in Marrana, AZ during the year.

Manager Lindvall and Maintenance Worker Kime attended the fall LE re-qualification held at Fort Niobrara National Wildlife Refuge on September 1 and 2.

Refuge Officers Kime and Lindvall completed the required law enforcement physicals.

Refuge Officer Lindvall was interviewed by an OPM investigator for the required security clearance.

A gun safe was purchased for storage of LE firearms.

In June, Marietta Gallino and her ranch hand Tyrel Yeager denied use of the road that leaves the refuge, crosses Gallino's property, and then re-enters the refuge. Mrs. Gallino contends that the road crossing her land is a private road and can only be used with her permission. Several refuge visitors and one group doing research on the refuge have been denied access. Arguments between people trying to use the road and Mr. Yeager have occurred. Mrs. Gallino has allowed refuge staff, a refuge grazing permittee, and a fence repairman to use the road. One June 18 the road was blocked with machinery and no one was around to move the machines so refuge staff could use the road. Mrs. Gallino was contacted and said that we could get Mr. Yeager to move the machinery each time we use the road. She stated that the machinery was put there because an RV had tried to use the road. She also suggested we remove a refuge sign at the refuge boundary that reads "Road Crosses Private Land."

The Pony Lake Road starts at US Highway 83 and goes east through the refuge for about 4 miles across Gallino's land, back onto the refuge, across Gallino's land again, back on to the refuge, then through a school section that Gallinos have leased. The road ends at a mowed parking lot just inside the refuge boundary.

The entire road has been regularly used by refuge staff, researchers, refuge grazing permittees, refuge visitors, the Gallino family and their employees, and fencing contractors. The use has taken place for perhaps 30 plus years. Refuge Manager Lindvall can attest to use by all parties since 1985 to 2004. The road was the only access route available to reach eastern sections of the refuge. The road is also the only access to the school section. The road has been shown on refuge leaflets as a road open to the public for many years.

Refuge staff, equipment, and materials have been used to maintain the road. Cattle guards and culverts have been placed along the road, including sections located on Gallino's land and the school section.

About two years ago, Regional Office Division of Realty provided the refuge with copies of easements for roads on Valentine National Wildlife Refuge. In the materials provided there is no record of an easement to Cherry County for any section of this road. Presently the County maintains only the section from Highway 83 to Pony Lake Subheadquarters (about 1 mile). In their maintenance schedule this section is classified as a Level 2 Road, County Collector. The next section, until it first leaves the refuge is classified as a Level 4 Individual Use Road. These are maintenance classifications only. The road was a one time listed as a mail route and may actually pre-date the refuge. Project Leader Huber contacted the county attorney for an opinion on the status of this road. He declined to take a position. The County Commission was contacted with the same result.

The on going dispute flared up on the opening day of grouse season. The land owner was contacted prior to grouse hunting and indicated that she would allow hunters to use the road that goes through her land and back on to the refuge. On opening day of the grouse season a group of hunters was stopped by Tyrel Yaeger and turned back. The hired man was in his underwear and had a pistol in hand. We have signed the road as closed to the public by landowner.

As a result of this incident a new public access route was put in to the east end of Valentine National Wildlife Refuge. It was felt that we could not expose our visitors and staff to this kind of danger. The new route is 5.7 miles long, rougher than rough, and basically just a mowed path. It does however provide needed access for the public, especially hunters.

A followup letter was sent to the landowner stating that we would no longer maintain the road east of the Gallino Place on the refuge. The landowner has now started using an access road entirely on their property to get to the school section that they lease.

Violation/Warning Total "2004"
(Jan 1, 2004 - Dec 31, 2004)

Violations	Valentine NWR	Ft. Niobrara NWR
Possession of Alcoholic Beverage	10	16
Possession of Narcotics	9	1
Fishing Violation	3	
Hunting Violation	3	
Boating Violation	2	
Littering		
Traffic Violation	2	
TOTAL	29	17
Total Violations for Year "2003"		46

Warnings	Valentine/Ft. Niobrara NWR
Possession of Alcoholic Beverage	52
Boating violation	13
Camping violation	
Trespass	5

Fishing Violation	6
Hunting Violation	4
Littering	3
Drug Violation	1
Traffic Violation	3
Weapons Violation	1
Permit Violation	14
	102
1,145 Law Enforcement contacts made by Officer Melvin in the Year 2004	

I. EQUIPMENT AND FACILITIES

1. New Construction

Two new observation blinds were constructed during the year. They replace old inadequate blinds that we had been using for years. In the spring, Eagle Scout Danny Lindvall and Boy Scout Troop 288 completed construction of a new photo blind for use at the sharp-tailed grouse lek. In the fall, the Gordon Valley 4 H Club built a new grouse observation blind for use on a prairie chicken lek. The North American Nature Photographers Association supplied funds to purchase materials for both blinds. The new blinds are made with pressure treated lumber, sided with plastic lumber, mounted on skids for portability and are a vast improvement over the blinds we had been using. They should also be relatively maintenance free.

Due to the circumstances described in section H-17, a new road was put in for access to the east end of the refuge. This was done in September. The road starts at the Pony Lake County Road, goes across the Pony Lake dike, along the north side of Center and 21 Lakes, across a corner of Unit 37 C, through the hills in Unit 33, across 34A6 and 34A4, and ends at the north end of 34E1. Basically we laid out a path using existing trail roads and gates where possible. We then mowed this route and signed it. The road is 5.6 miles long. The road is very rough in places, goes through some sandy hills, and will flood when wet. It will need considerable work, including grading, culverts, and raising of the road bed, to make it into a good trail road. It does however provide temporary access for refuge staff, researchers, permittees, and the public.

2. Rehabilitation

Repairs were made to the boat ramp near the Hackberry Headquarters. The grates were pulled , ramp leveled, and launch area dug out.

Rock from a stockpile at Hackberry Headquarters was spread on the west third of the Little Hay Road. The rock was placed in the wheel tracks with a special spreader placed on the dump truck. This makes the rock go quite a bit further. The rock was needed to smooth the road and cover exposed base rock.

The Pony Lake barn, Pony Lake wooden machine shop, and Hackberry fur shed were advertised for sale as surplus. These buildings are to be removed and replaced with a pole shed under MMS. We got no takers and will try again.

A new furnace with central air conditioning was installed in the office at Hackberry Lake. This is the first a/c ever in a Valentine National Wildlife Refuge office. We must be getting soft!

Six new 30 foot windmill tanks were installed by a contractor and paid for through deductions off permittees grazing bills.

The “paved” part (.9 miles) of the Calf Camp Road from the county road to the Pelican Lake Quarters was ground and graded. The road was rough enough that most people drove with one wheel on the road and one in the sand. The grinding and grading has much improved this road.

Maintenance Worker Kime completed fall windmill checks on Valentine National Wildlife Refuge. Now the task of entering the data for about 100 mills in SAMMS lies ahead!

Repairs were made to the Crissifuli pump in anticipation of using it for the Hackberry Lake renovation.

Dirt was added to the Hackberry Dike during the lake renovation work. Once we had the pump running good the dike was not high enough to keep water from coming back into the lake. Dirt from the immediate area was used. When the project was done we also piled up silt that collected at the pump outlet. When this dries it will be placed on the dike.

4. Equipment Utilization and Replacement

The truck used by the Valentine National Wildlife Refuge maintenance worker was in need of extensive repairs and has 106,000 miles on the odometer so is being surplused. A 1989 Dodge with 46,000 miles on it was brought down from Fort Niobrara for a replacement.

A gun safe and flammables cabinet were purchased for Valentine National Wildlife Refuge.

The north kiosk and displays on Highway 83 were replaced. A motorist hit and destroyed the whole works. The motorist's insurance company paid for replacement of the kiosk.

A new Caterpillar Model 430 D backhoe was received under the MMS program. The purchase price through GSA was \$80,499. It replaced an old backhoe that was in very bad shape. The new unit is the first new piece of heavy machinery at the refuge in many years. It came with 2 buckets, loading forks, all wheel drive, and a loading attachment. It was immediately put to use.

A Bush-wacker Model T-180 flex wing mower was purchased for \$16,941. The mower was used for mowing refuge trails and lines for prescribed fires.

A steel recycling bin was purchased. It has four storage slots for plastic, paper, and aluminum.

6. Computer Systems

Valentine NWR entered the computer age with the installation of satellite internet which is networked to four computers in the office. This is a much needed upgrade. All employees can now access the internet and e-mail from their desks. Some had been doing this from home. The old connection was by phone, on one computer only, and was very slow. It was also on the only phone line so many people got the busy signal when calling the refuge. Thanks to Marge McPeak for getting us all set up.

J. OTHER ITEMS

4. Credits

Refuge Manager Lindvall wrote sections A; C-1; E-1,4,5,6,8; F-7,8,9,10,13; G-11; H –all; I-all. Biologist Nenneman wrote sections B; D-5; F-1,2,5, 7 (monitoring); G-1,2,3,4,5,6,7,8,10,17. Photo credits; Mark Lindvall - MLL; Mel Nenneman – MN; Annie Kime –AK