

VALENTINE NATIONAL WILDLIFE REFUGE

Valentine, Nebraska

Annual Narrative Report

Calendar Year 2005

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 71,772-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

Nebraska Department of Roads constructed new and improved existing fences to protect Blanding's turtles (see section G-10)

The refuge general leaflet was redone and printed in the new standard format (see section H-1)

Dick and Jerry Ballard were recognized as "Friends of the Refuge" at the annual meeting of our friends group (see section H-6)

A new 5 bay storage building was built at Pony Lake (see section I-1)

B. CLIMATIC CONDITIONS

D. PLANNING

1. Master Plan

The Refuge Annual Performance Plan was completed for Valentine NWR. It is a fairly ambitious plan for the staff and resources available to the refuge.

Over 80 projects at Valentine NWR were put into SAMMS as waiting approval. These will change into deferred maintenance projects after 1 year. Most were items that fell under the old \$5,000 cap in MMS. One large road project for the East End Access Road was added.

4. Compliance with Environmental and Cultural Resource Mandates

Radon tests were conducted on buildings at Valentine National Wildlife Refuge. Results were Quarters 2 –1.1; Hackberry Trailer – 0.5; Hackberry Office 0.7: Quarters 1 - 0.8 and Q 13 0.3. All tests were within the acceptable range. Pony Lake Quarters was tested last year and passed at 0.7. Tests were done using First Alert Kits. All quarters and the office have now been tested.

Quarterly water testing was resumed. Samples from wells at Quarters 13, Pony Lake Subheadquarters, and Hackberry Headquarters were submitted for coliform and nitrate testing. Water tests for nitrate, lead, and copper at Pony, Pelican, and Hackberry wells all passed. All also passed E. coli but the Hackberry well failed on total coliforms twice. This well was treated with chlorine and then re-tested.

The unknown liquid, most likely anti-freeze, found in the tuber cellar at Valentine NWR was sent to Environmental Compliance in Lincoln for disposal.

5. **Research and Investigation**

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
Tyler Hunter	Range Aid/Fire fighter	GS-3 (6 June-20 August)
Jason Myer	Range Tech/Fire fighter	GS 5 (16 May-14 Oct)

4. **Volunteers**

5. **Funding**

Valentine National Wildlife Refuge receives funding as part of the Fort Niobrara/Valentine National Wildlife Refuge Complex. In 2005, the following dedicated funds were received.

Four quarters projects for left over quarter's funds were submitted for Valentine NWR. Replacement of the furnace in Quarters 1 in the amount of \$6,000 was funded. Work will be done in 2006.

Two MMS equipment rental projects for Valentine NWR were submitted and both were funded. Funded were \$4,160 for weed spraying and \$2,400 for a tree shears. Work will be done in 2006.

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.

MMS funds of \$27,000 were received in FY 2005 to replace the pick-up truck used by our maintenance worker. The truck was delivered in 2005.

MMS funds in the amount of \$226,483 were received to build a storage building at Pony Lake (see maintenance section). Some of the money, \$15,000, was not paid to the contractor due to deficiencies in the concrete work. The building was completed in 2006.

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 March Safety Meeting with the topic of anti-lock brakes.

8. Other

Refuge Manger Lindvall completed B-3 Aviation training on-line and is now again certified for aerial surveys.

Maintenance Worker Kime attended the LE refresher held in Marrana, AZ during the last week of January.

Lindvall, Kime, and Nenneman all completed the IT Security training via the internet. There were problems in getting credit for completing the course for some.

Maintenance Worker Kime attended the Maintenance Worker's Workshop in Las Vegas, Nevada from March 14-18.

Kime, Lindvall, and Nenneman attended the 2005 one day fire refresher held in Valentine on March 21.

Mark Lindvall and Mel Nenneman attended GIS training held at Fort Niobrara National Wildlife Refuge on April 19-20. Andy Bishop taught the course and also provided images that will get us started in producing maps that will be valuable in better managing the refuge. He also set up a large plotter that will allow us to print maps on site. Plans for the future include a flight to get good aerial photos of the refuge and integrating our grazing records into the mapping program.

Mel Nenneman completed Basic Aviation Safety Training on April 5 and is now certified to do aerial surveys.

Mark Lindvall completed SAMMS training at NCTC the week of April 4.

Refuge Manger Lindvall and Maintenance Worker Kime completed On Site Inspector Training via the internet.

Maintnenance Worker Kime, Biologist Nenneman and Manager Lindvall completed "No Fear" training. Lindvall also completed the 4 hour requirement for EEO training by viewing alternate dispute resolution video tapes.

Refuge Biologist Nenneman and Refuge Manager Lindvall attended the Prairie Grouse Technical Council meeting held in Valentine the week of September 19. Lindvall also served as head of the field trip committee. There were some good papers presented on grouse management. Many prairie chicken and sharp-tail populations are low and declining. Attendees to the meeting were impressed by the Sandhills and its large expanses of native prairie. We also hosted the group at the refuge during the field trip and set up a National Wildlife Refuge display at the meeting site.

Lindvall and Nenneman attended the Nebraska Chapter of the Wildlife Society Annual Meeting in Grand Island on October 21 and 22. The theme for the meeting was big game management and invasive species.

Refuge Manger Lindvall attended Refuge Annual Performance Planning training at the RO on August 25.

Mark Lindvall attended the Project Leaders Meeting held in Rapid City, SD the week of April 25.

Refuge Manager Lindvall attended the Zone project leaders meeting at the RO on August 24.

Maintenance Worker Kime started entering information into the SAMMS program. The first three records took a whole day! He has it figured out now but it still consumes quite a bit of his time. At a station like Valentine National Wildlife Refuge, with only one maintenance worker, this is a real burden.

Business rules for SAMMS were completed and submitted. We are spending a lot of time gathering and entering data for SAMMS that would be better spent getting a back log of maintenance work done. In November, the SAMMS business rules were revised. The main change is that we will now start reporting operating expenses in addition to preventive and corrective maintenance activities. Operations includes items such as cleaning, utilities, snow plowing, and trash removal. Operations will be set up in its own hierarchy.

Wade Briggs, Regional Heavy Equipment Coordinator, visited Valentine NWR on June 23. Our situation is that we have a greatly reduced maintenance staff, a lot of old equipment, and a tremendous maintenance backlog.

RPI updates for Valentine NWR were completed. The new road and parking lots for the east end access were added and the four buildings removed by bid sale were removed. Two windmills that we have removed were also taken off RPI. The new requirement to add operations and maintenance costs to RPI was time consuming. Valentine has 251 items on real property and assigning costs to items was difficult. Instructions were poor and the data quality is the same.

F. HABITAT MANAGEMENT

1. General

2. Wetlands

Spring snow and rains have ended the drought and brought lake and wetland levels up. Many wetlands that have not had water in them for several years are now full. We are no longer in the USDA drought category. Water levels are now up to gauges and water is flowing out of many lakes. The following observations were recorded; June 7 – Pelican Lake 1.74 on gauge, water not flowing out; June 14 – Watts 3.88 on gauge and flowing out and West Long flowing out; June 15 Whitewater Lake 7.74 on gauge with water flowing out; June 17 Clear Lake 7.90 and flowing out, Dewey 4.06 and flowing out, Willow not flowing out, Hackberry filling, Dads flowing out.

5. Grasslands

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 2005, there were five permittees in the program. All have had permits for many years. Grazing rates were reduced to compensate permittees for the added expense of moving cattle for short duration grazing.

In April, grazing permittees for Valentine National Wildlife Refuge were in to sign up for the 2005-2006 habitat program. AUMs and timing of grazing is similar to last year. An advertisement for grazing under the bid system was also placed in the local paper and existing permittees were contacted. One bid was received and accepted for grazing a portion of Valentine National Wildlife

Refuge. The bid received was just above the minimum set and came from the neighbor adjacent to the unit bid out.

A GAO request for information on last years grazing, expenses, and receipts was forwarded to the Regional Office. The request was for FY 2004 information on authority, acres grazed, AUMs, fees, method on establishing fees, receipts, and amounts deposited in the refuge account. It was quite confusing as the grazing and the billing may not take place in the same fiscal year. Basically we reported that our authority came from the Refuge Manual 6 RM 5.6 A, that fees were based on fair market value and bid, the deductions we made for improvements, an estimate of our expenses for staff and equipment, and the amount remitted.

In June Refuge Manager Lindvall and Maintenance Worker Kime spent most of the month keeping permittee cattle in the right units and water at windmills. The new fence contractor was contacted repeatedly about poor work in repairing fence.

In July, the water gap at Devils Punch Bowl was broken down and the neighbors cattle were on Valentine NWR for a few days. The rancher took them out and we made repairs to the water gap. This is a continuing problem.

In October, the neighbors cattle broke down the electric fence water gap on the south side of East Long Lake and trespass grazed unit 36B for a good share of the summer. Water gaps on Valentine NWR are a constant source of problems especially when we don't have the staff to check them on a regular basis.

Grazing fees for 2005 were:

spring grazing treatment	\$18.07/AUM
short-duration grazing	
1 day in unit	\$10.84/AUM
2 days in unit	\$16.24AUM
3 days in unit	\$18.07/AUM
4 days in unit	\$18.80/AUM
5 days in unit	\$19.16/AUM
6 days in unit	\$20.53/AUM
7 days in unit	\$20.90/AUM
8 or more days	\$21.36/AUM
in unit	
fall	\$21.36/AUM
winter	\$21.36/AUM

The full rate of \$21.36 is an increase of \$1.00 per AUM (the maximum increase permitted per year by policy) from the 2004 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 2005 was \$23.00/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 2005 about \$56,000 was spent on improvements and deducted from final billings. Several projects were not completed and may be done in 2006 using 2005 funds. These are included in the previous total. 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 - 34 per hour for a crew of two, and supplied their own gas, tools, vehicle, and equipment. Total fees for the 2005 grazing season were be about \$31,000. 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 2005, 23 habitat units totaling 3,827 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 2005, 4 habitat units totaling 720 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 2005, 41 habitat units totaling 12,104 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 2005, one habitat unit of 1170 acres was 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 2005 that will be given a spring grazing treatment in 2006. One unit was fall grazed after being hayed. This adds fertilizer to the soil and eventually quality and quantity to the hay harvested. In 2005, 2 habitat units totaling 377 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 2005, 4 habitat units totaling 237 acres were winter grazed.

g. Fire

Prescribed fire (P) and natural or wildland fire (N) are discussed in the fire section. No prescribed fires were done in 2005..

Treatment		Units	Acres	AUMS
Rest	rest (R)	233	42,123	----
Spring	spring grazing treatment (SGT)	23	3,827	1,390
	early spring short duration (ES-SD)			
	ES-SD 1-6 days	4	720	132
	ES-SD 7-9 days	0		
Summer	short duration summer (SD-S)			
	SD-S 1-3 days	17	2,610	473
	SD-S 4-7 days	19	6,198	995
	SD-S 8-14 days	5	3,255	491
	summer (S) 15-27 days	1	1,170	135
Fall	fall (F)	2	377	136
Winter	winter (W)	4	237	727
Hayed	hayed (H)	11	700	----
Fire	prescribed fire (P)	0		----
	natural fire (N)	0		----
*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.				

8. Haying

About 700 acres of sandy, sub-irrigated, and wetland range sites were mowed and yielded 733 tons of hay. All or part of 11 habitat units were mowed and hayed.

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 \$21.36/AUM in the winter treatment.

An advertisement for hay to be put up on bid at Valentine National Wildlife Refuge was placed in the local newspaper. The hay is needed for stock at Fort Niobrara National Wildlife Refuge. One bid was received and accepted for haying a portion of Valentine National Wildlife Refuge. The bid was for the permittee to deliver 41 percent of 150 large bales to Fort Niobrara. The permittee will keep 59 percent of the hay. The permittee actually put up 279 bales which

were split as in the bid. Of the refuge share, 90 bales were hauled to Fort Niobrara by the permittee and 14 bales left at Valentine NWR for road hay.

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

Nine prescribed fires totaling 1,964 acres were planned for 2005. The largest was for Natural Area 1 at 922 acres. Most are for cedar control in prairie. None were however completed.

Piles of tree limbs and old lumber were burned at Pony Lake and Hackberry HQ at Valentine National Wildlife Refuge.

Refuge Manger Lindvall, as engine crew, and Maintenance Worker Kime, as tender driver, responded to and assisted in putting out the the Maintainer Fire in the Wilderness Area at Fort Niobrara NWR on September 17.

There were no wild fires on Valentine NWR in 2005.

Lindvall, Nennenman, and Kime were all red carded for fire fighting in 2005.

10. Pest Management

In July, Refuge Manager Lindvall spent 5 days spraying Canadian thistle on Valentine NWR with Rodeo. Most spraying was done on areas that we have treated previously. In all 156 spots in 28 different habitat units were sprayed and the location marked with GPS. About 5 gallons of Rode was used. Areas sprayed in previous years are showing improvement due to the spraying and the improved growth of native vegetation following good rainfall. One disturbing trend is that thistle is moving out of wetlands and into uplands.

Also noted during thistle spraying is that large numbers of cottonwood and willow trees are growing at wetland edges. We need to address this problem soon before the trees get to such a size that mechanical removal is needed. Cottonwood and willows coming up in the road ditch on Little Hay Road were sprayed with Rodeo. About 500 cedar trees were hand cut while doing other chores around the refuge.

A wick bar for applying Rodeo was purchased and installed on the 6 by 6 ATV. Maintenance Worker Kime adapted the winch so it could be used to raise and lower the bar. The bar uses a 50 percent solution of Rodeo and was used to treat Canada thistle growing in grassland. The wick rides above the grass and thus only kills the thistle. It was used in Habitat Unit 18A1 south of Willow Lake with good results.

A third location with 2 plants of purple loostrife was found on Valentine NWR in habitat unit 16E3 (42 31.510; 100 34.828) just 100 yards east of some that was sprayed last year. These plants were sprayed with Rodeo on August 30. This patch was also along a public use road and it is suspected that the seed came in on boat trailers of fishermen.

We received stickers for boats that give suggestions on how to avoid moving invasive aquatics between lakes. We will start passing them out to fishermen on the refuge.

Some patches of leafy spurge were sprayed in Sawyer Meadow on Valentine NWR during September. One tank of Plateau was used. It may have been too late as some of the spurge was dried out with no sap in the stems. Areas sprayed 2 falls ago with plateau showed good control.

12. Wilderness and Special Areas

In 2005, Valentine National Wildlife Refuge was designated a Nebraska Important Bird Area by the Audubon Society. The IBA program is an inventory of the key sites within a state that support significant numbers and high diversity of birds. The IBA program is a conservation and education effort of the National Audubon Society and has no regulatory authority. Our application was reviewed by a technical committee which commented on the high diversity of species and the large population of greater prairie chickens found on Valentine National Wildlife Refuge.

The refuge is also recognized as an Important Bird Area by the American Bird Conservancy (www.abcbirds.org). The refuge also became a Registered Natural Landmark in 1979.

The south west part of the refuge is also a proposed wilderness area. The area designated is about 15,937 acres in size.

13. Easement Monitoring

Three FmHA easements are managed out of Valentine National Wildlife Refuge.

The ownership of the 349 Wagner FmHA easement in Knox County changed hands. The land was split and sold to two different interests. One person now owns the ¼ section north of the road and another the 189 acres of easement lands south of the county road.

The new owner of ¼ section called and wanted to know if the easement could be removed. He stated that he was aware that the easement existed but was unfamiliar with the terms. He wants to build on the land and derive income from the property. He was informed that the easement was perpetual and that he could not build. The representative of the owner of the land north of the county road was contacted and provided information on getting in contact with us if questions arose.

The Tower easement in Brown County, 440 acres, was visited on several occasions during the year. It is adjacent to our fee title Yellowthroat Wildlife Management Area. Cedars are invading the grassland and the area will need to be burned or the cedars cut.

The Mead FmHA Easement in Keya Paha County, 221 acres was not visited during the year.

The Fish and Wildlife Service also has an easement on 1,324.25 acres of land that was formerly part of Valentine NWR. This land was traded away for other lands in what we refer to as the Colburn exchange. The easement was habitat units 24B1, 24B2, 12B3, 24D (N), 24D(S), 12B4, and 12B5 which were traded for habitat units 38A, 37B, and 37C which are now part of the refuge. The easement was placed on the land to protect the endangered American burying beetle. The easement restricts development on the site.

Refuge Manger Lindvall worked with NRCS and Nebraska Game and Parks on Wetland Reserve Program evaluations and compatible use plans. These easements are hard to manage as few are with the original owners and the new owners are often out of compliance with the compatible use plans.

G. WILDLIFE

1. Wildlife Diversity

2. Endangered and/or Threatened Species

The ATV pulled harrow was test run on a grassed in blowout just east of headquarters. It worked well and we will now use it to open up other blowouts for transplant of the endangered blowout penstemon.

10. Other Resident Wildlife

Manager Lindvall and Biologist Nenneman worked with Nebraska Department of Roads and the contractor on installation of turtle fences both on and off the Refuge. . The proposed plan included most of the recommendations we had made earlier to improve the fence. The only recommendation not undertaken was to increase the size of the culverts under the highway.

The fences are to reduce road kill of Blanding's turtles along Highway 83. On the Refuge, the existing fences at Sweetwater, Tom's, and Twin Lakes were extended to take in more of the wetland area. On the east side of the Twin Lakes, part of the existing fence was moved to better direct turtles to the culvert crossing. At Little Hay, 3,330 feet of new fence was placed along both sides of the Highway. A unique turtle crossing, consisting of an auto gate tied into the fence, was built to allow turtles to pass under a turnout for a refuge road. At the Nebraska Game and Parks Ballard's Marsh Wildlife Management Area, 4,490 feet of new fence was built. Existing culverts were also cleaned out so turtles could pass under the highway. The total cost of the contract is \$84,000 with funding provided by the Nebraska Department of Roads. By working with the contractor and Department of Roads we were able to get the fences aligned and placed so they will do the most good.

11. Fisheries Resources

In the fall of 2004 Hackberry Lake was treated with rotenone to remove carp. Some stocking was done in 2004 and the following was done in 2005. Water depth measurements were taken in the deeper sections of Hackberry Lake on January 11. There was 7 inches of ice and 21, 23, 25, and 31 inches of water. Depths should be sufficient to support bluegill stocked last fall. Lake levels were good in spring and early summer. The water levels were low again by fall due to lack of rain.

In February, The Valentine Fish Hatchery stocked 19,068 perch (3.5 inches long, 60 fish per pound) in Hackberry Lake on February 23. On February 25 they stocked 12,780 bluegill (2 inches long, 200 per pound). On March 3, 128,000

(32 pounds) of bluegill were stocked. On April 22 Hatchery staff placed 10 quarts (1,400,000) perch eggs in Hackberry Lake. The Valentine Fish Hatchery stocked 28.5 pounds of bass (298 fish/pound, 3 inch length) into Hackberry Lake on May 19. The following fish were stocked in Hackberry Lake by Nebraska Game and Parks as part of the lake renovation project; perch – 136,000 at 994 fish per pound about 1.25 – 1.5 inches long on June 8; large mouth bass – 60,400 about 1.5 inches long at 560 fish per pound between June 28 and 30. On July 6 Valentine Hatchery stocked 5 thousand large mouthed bass (5.5 pounds at 900 per pound) in Hackberry Lake. This brings the total bass stocked to 68,200 (141.4 pounds). This completes the bass stocking undertaken as part of the lake renovation.

The water between the Hackberry Lake dike and water control structure was treated with rotenone on August 18. Nebraska Game and Parks assisted with the application. We saw bullhead but no carp in the ditch. This was undertaken to assure that no carp were present that could go up through the culvert and into Hackberry Lake.

The annual fishery coordination meeting was held at the Valentine Fish Hatchery on February 17. Staff from refuges, Nebraska Game and Parks, and South Dakota State University were present. Items on the agenda were results of the 2004 fish surveys, report on SDSU research and plans for this year, Hackberry Lake renovation, stocking requests, Yellowthroat WMA fishery, and pond repairs at Fort Niobrara National Wildlife Refuge.

Valentine Fish Hatchery collected pike from Dewey Lake at Valentine National Wildlife Refuge. After eggs were removed from the pike they were returned to the lake.

On March 8, a total of 514, 5-6 inch black crappie were stocked in Clear Lake. In March a total of 50 northern pike were removed from West Long Lake and placed in Clear Lake by Valentine Hatchery biologists. They removed the pike while collecting perch and bluegill brood stock. They also took 30 bluegill, 40 perch, and 20 bass for aquarium purposes. The following stockings of crappie were made in Clear Lake as part of an effort to establish a crappie fishery; July 12, 45 pounds at 2,500/pound, 112,440 fish; July 18, 40 pounds @ 1,800/pound, 72,000 fish; and July 5 28.5 pounds at 990/pound, 28,215 fish.

Nebraska Game and Parks stocked 19,216 yellow perch in Watts Lake on August 5. The fish were 105.5 fish per pound, 2.5-3 inches long, and weighed a total of 182.5 pounds.

On September 15 a total of 1,295 largemouth bass from 4 to 5 inches long were stocked in Watts Lake. On September 28 an additional 14,230 bass from 3 to 6 inches were stocked.

Wayne Stancil and staff from the Great Plains Fish and Wildlife Management Assistance Office conducted fisheries surveys on some of the refuge fishing lakes during the years. They prepared a written report, *Results from the 2005 Fishery Assessment Surveys Conducted on the Valentine National Wildlife Refuge*. The following is a summary of their findings as stated in the report. Night electrofishing was conducted in June and netting with gill and trap nets was done in August. In the past both electrofishing and netting had been done in late summer or fall. Electrofishing was changed to spring to take advantage of higher water levels and make the surveys more comparable to the Nebraska Game and Parks surveys.

One substock carp was captured in Watts Lake during the fishery surveys. This is the first carp that has been found since this lake was renovated in the early 1980's. Water quality and vegetation are still good in the lake so the population may not be high. Several northern pike were also captured. Only a few all male pike were stocked in this lake years ago. The source of both the pike and carp is unknown. Bass, bluegill, and perch numbers were low. In fact, no bluegill were found. Several memorable size saugeye were sampled. No muskies were found either. Low water levels caused by the drought may have resulted in some fish kills.

Clear Lake surveys showed that carp recruitment occurred in 2004. Pike did not recruit well during the drought and the population is now dominated by older individuals. Few perch or bluegill in preferred sizes are present. Largemouth bass were sampled but few are in the larger sizes. Substock crappie were collected. These are the result of recent stockings.

In Dewey Lake carp were found to be spawning but few are recruiting to stock or larger lengths. Northern pike appear to be controlling carp but their numbers are falling due to poor recruitment possibly as a result of poor spawning due to drought. Both bluegill and perch show poor recruitment. There are excellent angler opportunities for bass in the preferred size class.

In Pelican Lake bluegill catch per unit effort declined compared to recent years. Low water levels and large predators may be responsible for the lower recruitment. Perch remained at similar low numbers this year. Bass catch per unit effort showed a substantial decline from 2004. Pike numbers were similar to 2004 but lower than 2005. The catch per unit effort was one of the lowest since surveys were started in 1992. Carp are being controlled by pike as indicated by low recruitment of carp in 2005.

Pumpkinseed sunfish were found in Duck Lake for the first time. All fish caught were stock to quality length. Both bluegill and perch were not caught in as great a numbers as in 2001 surveys. Bluegill were mostly stock to quality length or smaller fish and there is little sign of recruitment. Bass in the preferred to memorable size are present in good numbers.

Nebraska Game and Parks Fisheries Biologist Joel Klammer and Refuge Manger Lindvall visited Willow Lake and discussed the future of this lake as a fishing lake. Game and Parks will do some water quality work this spring and refuge staff will survey the old structure to see if repairing it would raise the lake level. The lake is listed as open to fishing but has a history of winter kill, carp infestation, and occasionally good pike and crappie fishing.

Rice Lake was surveyed by Nebraska Game and Parks biologists for fish on June 15. The 15 minutes of electro fishing found no fish present. Maximum water depth was 4 feet and water clarity was excellent with submergent vegetation abundant. Low water levels may have resulted in summer and winter kill in this fishing lake. Bluegill stocked two years ago do not appear to have survived.

Biologist Nenneman took the Valentine NWR air boat and spray rig to Crescent Lake NWR and helped them with applying rotenone on Island Lake.

H. PUBLIC USE

1. General

The Valentine National Wildlife Refuge general brochure was redone in the new national format. It was quite a bit of work getting the maps, photos, and text in order and reviewing many drafts. When completed, an order was placed and 9,000 copies printed at \$.33 each. The final product looks nice and has useful information and a much better map than the old leaflet.

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

Grouse Hunters Have Good Year at Valentine National Wildlife Refuge
Grouse Observation Blinds Available at Valentine National Wildlife Refuge.
Open House at Valentine National Wildlife Refuge.
Sharp-tailed grouse from Valentine Refuge Head to Colorado
Amber Schroeder Volunteers at Valentine and Fort Niobrara Refuges
Dick and Jerri Ballard Recognized as Friends of Valentine NWR

Refuge Manager Lindvall served as a judge for the Valentine High School Science Fair held at the High School on February 23. The students had some interesting projects, some of which involved the natural environment.

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.

6. Interpretive Exhibits/Demonstrations

An open house sponsored by the Sandhills Prairie Refuge Association and Simeon District 5 East School was held on Valentine National Wildlife Refuge on April 23. The students acted as guides for visitors and prepared displays on grasses and the Civilian Conservation Corps history. Annie Kime helped by visiting the school and teaching about the CCC days at the refuge. The Association provided refuge shirts for the students and helped with costs. Visitors for the open house were guided along the CCC Tower Trail by the students and were rewarded with a great view of the Sandhill along with drinks and cookies at the observation deck. Janet Grabher, Association Board Member and teacher, put the whole event together. About 40 people attended.

Dick and Jerri Ballard were recognized as Friends of Valentine NWR at the annual meeting of the Sandhills Prairie Refuge Association held at Jordan's Restaurant on October 18. Dick and Jerri were grazing permittees on Valentine NWR for many years and were good cooperators in managing grasslands for wildlife. They also opened their ranch up to researchers working on the Refuge. They also run the Alkali Fish Camp where many Refuge hunters and fishermen stay. Over the years they have been good ambassadors for the refuge answering many questions and explaining refuge programs. They have also become friends with many past and present refuge employees.

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 2005 season was October 1 - December 11 and December 17 - January 9. A total of 6 hunters were out for the duck opener at Valentine NWR on October 1. The few hunters out did well. Not many hunters were out during the month October and the hunting was been slow. A rough estimate of the number of visits by duck hunters is 150. We get several groups of out of state hunters that come every year and stay for several days to a week.

Grouse season opened on September 17 and ran 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 2005 the 256 hunters that turned in wing envelopes reported harvest of 356 prairie grouse including chickens, sharptails, and 1 hybrid. Harvest is up again from the past few years. More complete information on grouse harvest can be found in section G10a.

Numbers of pheasants as well as pheasant hunters were up this year. Some hunters took limits opening weekend. An estimated 75 hunters were out opening weekend which started on October 29. The season ran through January 31, 2006 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 ran from November 12 through 20. This year Valentine NWR paid Game and Parks to run a check station on the Refuge at the intersection of Highway 83 and Little Hay Road. The station was open from 8:00 AM to 8:00 PM on both the opening and last weekend of the season. Most of the deer checked were on the opening weekend. Refuge LE Officers used a leaflet and contacts to encourage hunters to use the station. About 40 refuge deer were checked. Almost all had the lymph nodes removed for CWD testing. Some Refuge deer were also checked in town and had samples for disease testing taken.

Most of the deer hunting takes place on the opening weekend of the season. Special Agent Mark Webb from Lincoln flew over the Refuge on opening day to check for illegal activity. At the same time a count of 54 vehicles of hunters was made on the Refuge.

A total of 69 deer was recorded as harvested during the rifle season. Many hunters from out of state as well as Nebraska come to the Refuge in search of the big buck. Of the sample of 42 buck deer aged, only 3 whitetails and no mule deer were 3.5 years or more in age. It appears that hunters are harvesting most bucks before they reach the age where they get trophy antlers. 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 and all east of the highway is in the Calamus West Unit. In 1995 Nebraska Game and Parks removed Valentine NWR from the area where only Sandhills permits were valid. Starting in 1997, a statewide bucks only permit was also available. Six bucks were reported as harvested on the refuge

with state wide buck permits this year. This year there were also youth statewide permits available and 2 deer were reported as harvested under these permits. 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. Only 3 deer were known harvested by muzzle loaders..

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. Two deer were 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 2004-2005 season, 59 permits were issued and 27 returned (46 percent return rate). Seven successful hunters took 26 coyotes. One hunter accounted for 16 of the 26.

The refuge is also open for dove hunting but few hunters come here specifically to hunt doves. A few are shot by grouse and pheasant hunters.

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 this year as it was renovated in 2004 and the fish are still too small for harvest. Most of the visitation for the refuge is for fishing. Not enough counts were made to provide a good estimate for fishing visits.

There was sufficient ice for ice fishing for 74 days from December 1, 2003 through February 12, 2004. Fishing pressure was light for most of the ice fishing season. In May, about 50 groups of fishermen have been out at Valentine NWR on weekends trying for pike, mostly in Dewey and Clear Lakes. Lake levels are up due to recent spring rains. Access to Pelican lake has been a problem with people getting stuck at boat ramps. The School Lake cut across road was also closed due to flooding.

Refuge size limits remained the same 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.

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 16A2 and 30A2. People come from all over the country and even a few from foreign countries to watch the grouse display. We have a reservation system for the blinds.

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

The bond schedule has been revised and the charges for liquidated damages increased. With the increases some of our wildlife violations are resulting in fines in the \$200 to \$650 range.

In February, Refuge Manger Lindvall attended the annual law enforcement refresher held in Marrana, AZ from February 1 –6. Refuge Office Kime also completed the required training.

In July, Zone LE Officer Ray Portwood visited Valentine NWR on July 14. We talked about ways he could assist the field.

Refuge Officers Kime and Lindvall attended the fall LE Refresher and Qualifications held at Fort Niobrara NWR on September 6 and 7. New bullet proof vests for both officers were also received at the end of the month.

In September, Refuge Officer Kime rescued two elderly fishermen whose boat had capsized on Clear Lake. Their boat swamped in high winds at about 10 in the morning. When they did not return to where they were staying, the resort owner alerted the refuge. They were found on shore at about 11 that night. They were not injured but were happy to see Dave!

Special Agent Mark Webb also flew over the Refuge on opening day of rifle deer season to check for illegal activity. At the same time a count of 54 vehicles of hunters was noted on the Refuge. Refuge Officers wrote warnings and tickets for off road driving, no habitat stamp, failure to cancel permit, and duplicating a permit.

Refuge Officers Lindvall and Kime completed annual law enforcement physicals in preparation for the upcoming LE refreshers.

A total of 38 violation notices were issued this year and included 9 for alcohol, 3 for drugs, 6 for fishing violations, 14 for hunting violations, 1 for littering, and 9 for traffic violations. Numerous verbal and written warnings were also given.

I. EQUIPMENT AND FACILITIES

1. New Construction

In February, RO engineering completed the bid package for the new storage that was constructed during the year at Pony Lake. The building is all steel, 40' by 100' with 5 overhead doors, 2 personnel doors, and a cement floor.

An 8A contract for construction of the building was let to Midwest Paving for \$226,483. Use of an 8A no bid contractor probably made this building cost much more than if it had been bid. In fact we rejected the original proposal from the contractor and he came down \$54,000 in one day. This is an MMS project for Valentine NWR. The contractor was up to view the site. Soil samples for testing were collected. In August, the contractor started dirt work. Midwest also provided plans for various phases of the construction as this was a design and build contract. RO Engineer Frank Waynick did an excellent job looking over the submittals and pointing out problems with the designs.

After fixing some design submittals, the contractor started work. The contractor laid the slab but all other work on the site was done by subs with very little on site supervision by the prime. Construction continued and the contractor was granted a 14 day extension and has requested a second extension.

In November, the contractor and subs continued working on the new storage building. The completion of the building was late and the contractor was paying a \$150/day penalty. They have requested that the building be considered substantially completed even though there is quite a bit of work remaining. Due to a technicality the penalty was later cancelled.

On November 18, Refuge Manager Lindvall met with the contractor and noted nineteen items not completed and 14 items that were done wrong. Some of the concrete work was not done to plan and USFWS will probably require an extended warranty and deduct part of the payment to the contractor. Gerry Sylliaasen and Frank Waynick, from RO contracting and engineering, have done a great job in holding the contractor to the terms and conditions of the plans and contracts.

Work on the new storage shed came to a stop while a dispute with the contractor was settled. The concrete work was not done according to plan and the contractor's suggested remedy was inadequate. In the end \$15,000 was not paid to the contractor due to the defective work. The storage building is usable but the durability of the slab is questionable as the contractor did not key the 2 slabs together as called for in the plan. What should have been a simple steel building on a slab turned into countless hours of work for refuge staff as inspectors and for RO engineering and contracting. The building was not accepted until the winter of 2006.

An existing MMS project for interpretive facilities along US Highway 83 was split into 2 projects and submitted for possible Washington Office funding. The project is as described in the Valentine NWR Site Plan and includes a nature trail, kiosk, parking, and access road at the north entrance to the refuge. The project was funded but the funds were rescinded and used for hurricane Katrina relief efforts.

2. Rehabilitation

The Calf Camp water control structure at Valentine NWR was plugged and water rose to a level where the dike started to wash. The Crissifuli pump was used to lower the water to prevent further damage to the dike. High water eroded the dike in several places. Dirt, fabric, and rip rap rock were placed to repair the damage. The screen that was plugged and caused the problem was removed. The screen mesh trapped vegetation and plugged the structure intake.

The Watts Lake access dock was repaired. The walkway to the dock was jacked up and supported. Dirt covering the walkway was removed. One leaking float still requires repair.

Rock was added to Little Hay Road. The rock was being hauled from a stockpile and spread in the wheel tracks to make it go further. The base rock was starting to be disturbed and was also ruining tires of staff and visitors.

4. Equipment Utilization and Replacement

The maintenance worker's pickup truck was replaced using MMS funds. The new truck is a 2005, 4 wheel drive, diesel, extended cab with a flat bed trailer.

Four surplus buildings at Valentine National Wildlife Refuge were sold by sealed bid. The buildings sold and amount received were: Pony Lake Barn SAMMS 10030544 sold for \$362.02; Pony Lake Wood Machine Shop SAMMS 10030545 sold for \$562.02; Hackberry Fur Shed Old RPI 9 sold for \$202.00 ; and Pony Lake 1,000 bushel grain bin SAMMS 100030559 sold for \$257.00. Buyers removed the buildings and saved us the cost of demolition and land fill fees. The buildings will be replaced by the new storage shed to be built at Pony Lake.

6. Computer Systems

Refuge Manger Lindvall received a new Dell computer courtesy of the RO. The computer was received as a reward for completing computer tracking and for having one of the oldest computers still in use.

A new Dell computer was received and will be used by Maintenance Worker Kime, primarily to do SAMMS. The funds were part of the \$10,000 received from SAMMS for completing the training and undertaking the program.

8. Other

A contractor for Federal Highways was out to do an update of the road inventory for Valentine NWR and Yellowthroat WMA. Hopefully, they can fix the errors made during the last inventory. They GPSed all the roads and lots and will provide this information to us. We had not received the report by the end of the year.

J. OTHER ITEMS

4. Credits

Refuge Manager Lindvall wrote sections A; D-1 and 4; E-1,5,6,8; F-2 (part), 7,8,9,10,12,13; G-10, 11 (part), H- all; I- all; Greg Wanner wrote the fisheries report summarized in G-11; 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; Dave Kime – DK; Janet Grabher –JG; Rober Gibson – RG; Marge McPeak – MM.

