

**Valentine National Wildlife Refuge**

**1993**

**Annual Narrative Report**

## Introduction

Valentine National Wildlife Refuge (NWR) was established August 4, 1935, pursuant to the Migratory Bird Conservation Act by Executive Order 7142 “as a breeding ground for migratory birds and other wildlife.” The refuge is part of a complex administered from Fort Niobrara NWR.

Valentine NWR lies in the heart of the Nebraska Sandhills; a unique region which contains the largest remaining stands of mid and tall native prairie in North America. Of the 71,516 acres in the refuge, approximately 49,000 acres are grassy, undulating sand dunes; 10,000 acres are shallow lakes and marshes; and 13,000 acres are sub-irrigated meadows. The total acreage provides habitat for migrating and nesting waterfowl, other migrating birds, and native/resident wildlife. The refuge headquarters is located on Hackberry Lake, 18 miles south of Valentine, Nebraska, on US Highway 83 and then 13 miles west and south on State Spur 16B.

Review and Approvals

Valentine National Wildlife Refuge

Valentine, Nebraska

Annual Narrative Report

Calendar Year 1993

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Refuge Manager  
Date

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Date

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Refuge Supervisor

#### A. HIGHLIGHTS

The National Ecology and Research Center completed a survey of mammals, birds, reptiles, and amphibians on the refuge.

Trumpeter swans nested on the refuge for the first time since the 1970's.

#### B. CLIMATIC CONDITIONS

A weather station has been maintained at Hackberry Headquarters in cooperation with the National Weather Service for the past 56 years. Monthly observations for 1993 are summarized in Table 1. Mid-April saw 14 inches of snowfall, and moisture conditions continued to be good throughout the growing season. Total precipitation at the end of July equaled the long term annual precipitation

total. By year end, net moisture (precipitation - evaporative loss) was 6.32 inches. Temperatures throughout the year were moderate, with no days exceeding 100 °F, and lows not dropping below -20 °F.

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Table 1. Weather records from weather station at Hackberry Headquarters, Valentine NWR for 1993.

Month	Precipitation	Snowfall	Evaporation	Temperature (° F)	
	(inches)	(inches)	(inches)	Minimum	Maximum
JAN	0.54	7.5	N/A	-12	52
FEB	0.95	13.9	N/A	-17	53
MAR	0.87	N/A	N/A	4	80
APR	5.01	14.4	0.5	22	74
MAY	2.49	----	4.47	30	80
JUN	4.86	----	4.77	39	85
JUL	6.01	----	4.65	47	91
AUG	3.15	----	4.39	40	91
SEP	2.91	----	3.38	26	89
OCT	1.55	----	1.22	15	88
NOV	1.05	----	N/A	-9	59
DEC	<u>0.31</u>	<u>4.5</u>	<u>N/A</u>	0	61
TOTAL	29.7	40.3	23.38		

\* Average annual precipitation recorded at the Valentine NWR weather station is 21.60 inches for 1945-1993. Evaporation is net open-pan evaporation.

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## C. LAND ACQUISITION

### 2. Easements

In FY 93 a total of \$8,000 in refuge 1261 funds was used on FmHA easements and fee title lands. There were no increases in funds so other refuge programs were reduced. Both fee title and easement lands were given minimum attention, i.e., keep the fence up and the weeds down. A great deal of time was spent on easements to be recorded next year. In FY 94 the shortfall is expected to be \$17,000 in 1261 funds as the new easements are recorded, posted, fenced and more properties reviewed. With no increase in staff or funds some of this work will not be completed. Most likely grazing plans will not be implemented. As in FY 93 areas will receive minimum attention.

Haskel Property, Brown County. Work was completed on the haying and grazing plan and easement boundaries on the Haskel property in Brown County. The area has an excellent wetland complex that, with upland and wetland, totals about 300 acres. The easement and plan should be very beneficial to wildlife. By years end the survey had not been completed and the easement was not yet recorded. The property was tied up in litigation and negotiating a lease back - buy back with FmHA.

Larsen Property, Knox County. A contaminant survey and certificate of inspection were completed. At years end no survey was completed or easement recorded. The local FmHA administrator lost our letter recommending an easement and was provided with a second copy. This property is also in a lease back -buy back with FmHA.

Wagner Property, Knox County. Work was started on a haying and grazing plan for the property. A problem arose when the local extension agent refused to sign the plan, which was acceptable to us and SCS, citing "too much government" and that we "didn't know the needs of future land owners." A meeting between FWS, SCS, FmHA, and Cooperative Extension was held in Knox county in an attempt to work something out. A grazing plan could not be agreed upon. The group did however support placing the area under an A easement where FWS controls grazing entirely. Go figure? The county agent would also like to make it a demonstration area for riparian area management with our and future landowners cooperation. This would hopefully extend the benefits to other areas. A contaminant survey and certificate of inspection were completed. By the end of the year the area has been surveyed but no easement recorded.

Johnson Property, Keya Paha County. FmHA offered us the Johnson easement lands in fee title. The 180 acre parcel is primarily a riparian area with Holt Creek running through it. A briefing paper outlining the pros and cons of acquisition was prepared and sent on the Regional Office and the decision made to accept the property. FmHA sent recommendation for transfer up to Washington, D.C. where it was still pending.

Tower Property, Brown County. A recommended easement was submitted for the FmHA Tower inventory property. FWS has fee title land (480) acres adjacent to the new easement. The new easement will have about 440 acres and will be managed with a grazing plan as recommended. The plan includes seeding former cropland to native grasses. The easement will add to the wildlife value of this very productive marsh. FmHA sold the irrigation pivots off our fee title property and their inventory lands which will be under easement. The buyer removed the pivots during the year. This is a good lick and will assure that the sandy soils will not be farmed again.

Perret Property, Cherry County. The Perret FmHA inventory property was visited for setting up an easement. The 160 acre tract is sub-irrigated meadow with small cordgrass wetlands scattered throughout. Some of the wetlands have been drained. There is a center pivot on the land. The former crop land is grassed over and the landowner plans on keeping it in pasture. If possible an A easement with no haying or grazing restrictions will be placed on the entire property. A contaminant survey was completed. The easement had not been recorded at years end.

Foxely Corporate Farms, Wheeler County. The Fish and Wildlife Service, through Ecological Services, declined the role of easement manager for the Foxley property. The corporate farm is required by EPA to set up an easement as part of a settlement for wetland law violations. Contaminants in the water is the reason FWS declined being easement manager. EPA remains interested in getting FWS to accept the easement.

#### D. PLANNING

##### 4. Compliance with Cultural and Resource Mandates

Nebraska Department of Environmental Quality contracted Terracon Environmental, Inc., to complete a Step 7 Assessment Report re: potential contamination due to a possible leaking underground fuel oil storage tank at Hackberry Headquarters, Valentine NWR that was removed in 1989. In June, 1993 six ground water wells were drilled at Hackberry Headquarters and soil and water samples tested. Analysis was for benzene, toluene, ethyl benzene, xylene and total recoverable petroleum hydrocarbons. All samples were below the detection limit of the analysis - 1 ug/L for all samples except total recoverable petroleum hydrocarbons which was 0.4 mg/L.

##### 5. Research and Investigations

A proposal for conducting carp control on the Marsh Lakes in cooperation with Jim Fajt from Auburn University was submitted to the Regional Office. The plan called for pre-baiting carp and administering chemical control via treated bait. An experimental use permit was issued to test this control method, and results of this activity are presented in section G. 11. f.

Personnel from the University of Nebraska-Lincoln participated in a study of baseline data of "gasses" contributing to the overall "green house effect" and are presently negotiating with this station to establish a monitoring system on Dewey Marsh. Monitoring is proposed for a couple of years. Initial air sampling by personnel from Colorado State University indicated that Dewey Marsh is emitting considerable methane. On June 3, personnel from the University of Nebraska-Lincoln participating in the study of baseline data of "gasses" contributing to the overall "green house effect", met on site with Project Leader Huber and Wildlife Biologist McDaniel. It was not possible for them to establish a monitoring base at the location they believed necessary to carry out sampling. Therefore, the research will be carried out on Ballard Marsh State Special Use Area adjacent to Valentine NWR.

Biologist McDaniel coordinated possible VOR vegetation documentation on CRP with Ron Reynolds, HAPET, Project Leader of the Wetland Habitat Office in Bismarck, ND and Arnie Kruse, Habitat Biologist, of the Northern Prairie Wildlife Research Center in Jamestown, ND. Vegetation documentation was not collected during CRP nest dragging activities during 1992. Baseline nesting cover or vegetation structure is important -- most nest densities documented in disturbed cover, throughout the Great Plains, are similar. However, there is considerable difference in nest density documentation of undisturbed nesting cover.

Coordination was accomplished with herptile researches from CSU and Memphis State University for the 1993 field season. This on-going research has been conducted on Valentine NWR since 1978.

Project proposals for water management/drought projects for Valentine NWR were prepared and submitted to Regional Office for possible USBR Funding.

Wildlife Biologist McDaniel was contacted by Jon Farrar, Nebraska Game & Parks re: the Dewey Marsh "fen". A historic record (1920's) of cottongrass from this site is at UN-L; however, the Dewey Lake dike has been raised on several occasions and the present water elevation may be too high for the species to exist.

Publication: Brogan, Michael A. (editor). 1993. A biological survey of Fort Niobrara and Valentine National Wildlife Refuges. U.S. Department of the Interior, Fish and Wildlife Service National Ecology Research Center, Fort Collins, CO. Draft Final Report 251 pages.

The National Ecology Research Center undertook a biological assessment of the vertebrate fauna of Ft. Niobrara and Valentine NWRs during 1991 and 1992. The objectives of this report were to summarize changes in the vegetation and the landscape occupied by the Refuges, to determine the historic vertebrate inhabitants in the area, to conduct surveys to confirm the current distributions of vertebrates on the Refuges, and to identify changes that may have brought about the extirpation or invasion of species, with appropriate management recommendations.

## E. ADMINISTRATION

### 2. Personnel

1. Royce R. Huber GS13PFT Complex	Refuge Manger	(started Nov 30)	
2. Len McDaniel Valentine	Wildlife Biologist		GS11PFT
3. Jim Sellers GS11PFT Complex	Supv Refuge Op Specialist		
4. Mark Lindvall GS11PFT Complex	Refuge Op. Specialist		
5. Kathy McPeak Fort	Wildlife Biologist		GS09PPT
6. Larry Vaughn GS08PFT Valentine	Biological Technician		
7. Mark Purdy Complex	Engin. Equip Operator		WG10PFT
8. Dave Kime Valentine	Maintenance Worker		WG08PFT
9. Bill Turner Fort	Maintenance Worker		WG08PFT
10. Glen Beaman Fort	Maintenance Worker		WG08PFT
11. Casey McPeak Fort	Maintenance Worker		WG08PFT
12. Mary Ayers Complex	Refuge Assistant		GS07PFT
13. Bridgette Thornton GS04PFT Complex	Office Auto Clerk	(stated Nov)	
14. John Segar Complex	Fire Mgmt Officer (started Feb)		GS11PFT
15. Bill Waln	Range Tech		GS04TFT
16. Rich Sterry	Range Tech		GS06TFT
17.. Todd Borszich	Range Tech		GS03TFT
18. Frank Egelhoff	Range Tech		GS03TFT
19. Laura Eddy	Range Tech		GS02TFT
20. Roger Foster	Range Tech		GS06TFT
21. John Hughes	Range Tech		GS04TFT

Roger S. Foster of Valentine, Nebraska was rehired as a Range Technician, GS-6 effective April 4, 1993. Roger has worked for this complex as a seasonal Range Technician since March of 1986,

making this his seventh year with complex.

William (Bill) W. Waln of Kilgore, Nebraska was rehired as a Range Technician, GS-6 effective April 4, 1993. This will be Bill's sixth year as a seasonal employee with the complex.

John P. Hughes of Sturgis, South Dakota was hired as a Range Technician, GS-4 effective April 4, 1993. John previously worked for this complex in 1990 as a Range Aid, GS-3.

Richard (Rich) I. Sterry, of Presho, South Dakota was rehired as a Range Technician, GS-6 effective April 18, 1993. This will be Rich's third year with complex as a seasonal employee.

Todd J. Borszich of Valentine, Nebraska was rehired as a Range Aid, GS-0455-03, effective May 16, 1993. This is Todd's second year as a Range Aid on the complex.

Laura M. Eddy of Emporia, Kansas was rehired as a Range Technician, GS-0455-04, effective May 25, 1993. Laura worked for the complex last year as a seasonal Range Aid, GS-03. Laura has completed her course work for her BS degree in Biology from Emporia State University.

Frank L. Egelhoff of Valentine, Nebraska was also rehired as a Range Aid, GS-0455-03, effective May 30, 1993, though his actual first day of work began on June 1. This is Frank's second year as a Range Aid on the complex.

Range Technician John Hughes resigned during the month to enter a graduate program at Kansas State. John received an assistantship and will be involved with CRP.

Range Technician Frank L. Egelhoff resigned close of business on August 6 to return to college. Frank will be studying engineering.

Ranch Technician Laura Eddy resigned effective August 12 and she will be returning to college working in range science.

Range Aid Todd J. Borszich also resigned in August, effective August 20 to return to college and his studies.

Range Technicians (Fire Fighters) Rich Sterry, Bill Waln, and Roger Foster had their tour of duty changed from full-time to intermittent effective October 31.

The Excepted Appointments of Range Technicians Roger S. Foster and William W. Waln expired on December 11, 1993. The Excepted Appointment of Range Technician Richard I. Sterry expired on December 25, 1993.

Wildlife Biologist Kathy McPeak and Biological Technician Larry Vaughn received well deserved special achievement awards for their outstanding work last fiscal year. Kathy took on extra work with the annual sale and Larry with fencing at Valentine NWR. Congratulations!

Effective October 31, Refuge Assistant Mary Ayers was promoted to Administrative Support Assistant, GS-07.

## 2. Youth Programs

The YCC program started on June 7 with two enrolles. Their group leader was a temporary firefighter. YCC helped with 504 handicapped accessibility projects, mainly pouring concrete for wheelchair ramps, and posted boundary at Valentine NWR. They have put up 250 signs and all the boundary east of highway 83 is now posted with the new signs. They constructed wheelchair ramps at the Pony Lake office, Burr Oak Picnic Area, and Fort Niobrara Visitor Center. They also found time to band geese, visit LaCreek NWR, do a river cleanup, visit the main buffalo herd, and receive a fishery management demonstration. Their last day at work was July 30.

## 6. Safety

The January meeting was hosted by Maintenance Worker David Kime. His topic was "Fence and Windmill Safety". Discussions covered accidents that had happened when individuals were fencing and/or working on windmills. Emphasized was the need to always take and use proper tools/clothing, watch out for one another, and don't take unnecessary risks.

The February safety meeting was hosted by Wildlife Biologist McDaniel.. His topic was "Wildlife Disease". Bacterial, fungal, and viral diseases were discussed. It was pointed out that though there is little risk in humans with these diseases, individuals should use plenty of common sense and caution by wearing masks and plastic gloves when handling any wild animal or bird. These diseases are not contagious but are infectious.

The March meeting was hosted by Engineering Equipment Operator Purdy. His topic was "Horse Safety". He gave a practical demonstration as to how not to saddle a horse and maintain the tack used on a horse. He then demonstrated the proper method of saddling a horse and what to check for when ensuring that one's tack is in proper working order, prior to using it.

The April safety meeting was hosted by Office Automation Clerk Thornton and the topic was Lightning and Tornado Safety. Two videos were shown: the first was entitled "When Lightning Strikes"; the second was entitled "It Sounded Like a Freight Train".

May's safety meeting was hosted Refuge Operations Specialist Lindvall and the topic was "Safe Boating". Brochures were passed out to those present and two videos were shown, one titled "Air

Boat Training" by Steve Knode and "Cold, Wet & Alive" by the Nebraska Game and Parks Commission.

June's safety meeting was hosted by Wildlife Biologist Kathy McPeak and the topic was "CPR Refresher". One film and one video were shown - the film was an old film on what to do if someone is choking, while the video was the latest video on CPR procedures.

July's safety meeting was hosted by Refuge Assistant Ayers and the topic was "Poisonous Plants and Insects". Through cooperation with various staff members on the Valentine NWR, Mary was able to pass around several species of poisonous plants and a male black widow spider as part of the presentation.

The August safety meeting was hosted by Refuge Manager Huber and the topic was "Safe Operation of Heavy Equipment. Two VCR tapes were shown: "It Always Happens to the Other Guy" and "Round Trip to Danger". Both films covered the importance of wearing proper clothing according to the environment in which you work; wearing of seat belts; being alert and aware of your surroundings; keeping all equipment in proper working condition; watch out for the other guy.

The September safety meeting was hosted by Supervisory ROS Sellers and his topic was "Big Game Handling". This was very appropriate because at this time of year the roundups begin in preparation for the Annual Surplus Animal Sale. The major concern is the SAFETY of personnel, visitors, and animals. Responsibility for assignment of duties is the refuge manager. Assignments are based on experience and training, etc. Basic rules are: Pay attention to your job and what is happening around you; do the job assigned; cry "uncle" if you are injured, tired, feel unsafe or uncomfortable about your job; and last of all "stay with your job" even if there is slack time - you are needed when you are needed - BE THERE! Another big plus is handling the animals as cool, quietly, and calmly as possible. BE ALERT!

The October safety meeting was hosted Maintenance Worker Casey McPeak and the topic was on "Fire Extinguishers". A video tape entitled "Portable Fire Extinguishers" was shown. The various classes of fire extinguishers were discussed. After the video, all personnel went outside where FMO Segar demonstrated how to operate the fire units and the equipment on the fire units.

The November safety meeting was hosted by Larry Vaughn and his topic was "Wellness". A video was shown pertaining to "Fatigue of the Fire Fighter". The main points covered did pertain to all personnel whether fire fighters or not. Some of the factors covered were 1) "Work/Rest" theory, 2) Heat Stress, 3) Smoke and Carbon Monoxide, 4) Food and Nutrition, and 5) Physical Fitness.

The December safety meeting was hosted by Bill Turner and his topic was Winter Safety Driving. The first film shown was entitled "Make Winter Driving Safer" and second short tape by the Nebraska State Patrol dealt with Vehicle Winter Gear. Main points covered by both the film and tape were: 1) Ensure that your vehicle is winterized; such as having the engine tuned, changing the oil to a

heavy weight oil, checking battery terminals and cables for loose connections and corrosion, checking all hoses and belts, checking and/or replacing your antifreeze, and checking the exhaust system for leaks to prevent carbon monoxide poisoning. 2) Maintain a basic survival kit for your car for the winter months: include extra warm clothing (footwear, caps, scarfs), a blanket or two, small tools, flares, small shovel, battery cables, cat litter in case you get stuck, large trash bags (use of windbreakers or raincoats), candles and matches, coffee can filled with paper and pencil, books/cards, nylon cord, flashlight and a simple first aid kit.

IHC semi truck-tractor and lowboy were dead lined due to intermittent trailer brake failure.

Nylon lineman's-type climbing belts with safety harnesses were obtained on surplus from the Air Force and issued to all personnel potentially involved in windmill maintenance or other climbing activities.

Asbestos inspection/testing in the complex was initiated. Field inspection and collection of samples was completed for all Ft. Niobrara NWR Headquarters facilities. Outlying Ft. Niobrara and Valentine NWR sites are tentatively scheduled for April. Work was conducted by Duane Huber, Rainwater Basin, assisted by Complex staff.

## 7. Technical Assistance

Sherri Niesar, Grad Student, SDSU, was on refuge January 11 to discuss "herptile" trapping techniques with Biologist McDaniel. Bio-diversity documentation will be carried out on some Minnesota WMD's this year under the direction of Dr. Dan Hubbard. Niesar consulted with McDaniel during the field season on techniques for improving the effectiveness of reptile sampling. The snake traps Niesar borrowed from Valentine NWR worked well for her, and were returned at the end of her field season.

Biologist McDaniel spent January 19 at LaCreek NWR discussing grassland monitoring-analysis techniques and computer assisted biological analysis-processing with Ann Timberman.

Biologist McDaniel sent the Valentine NWR historic deer harvest information to Karl Menzel, NG&P Big Game Biologist, upon request. It was more convenient than requesting the data from the Lincoln data base.

Assistance was provided Nebraska Game & Parks re: nest dragging that is being completed by Nebraska Game & Parks on Ballard Marsh SUA adjacent to Valentine NWR. Wm. Vodenhal, District Biologist, and Tim Williams, Nebraska Game & Parks, were present during the final day of the first round of nest dragging on Valentine NWR. The refuge cable-chain drag was loaned to Nebraska Game & Parks to enable them to complete dragging on the state area.

Biologist McDaniel provided technical assistance to Debbie Poelker, Ruby Lake NWR, on coyote control techniques/recommendations for increasing recruitment of sandhill cranes. Al Sargeant

advised Ms. Poelker to contact McDaniel.

Biologist McDaniel advised Rocky Plentner, NPD, on mink trapping techniques. Mink were responsible for decreasing survival of piping plover nesting activity during 1992.

Wildlife Biologist McDaniel was contacted by Lois Simonson, Mullen re: what to do with a badger in her chicken coop - the badger had killed 150 chicks. Also, a similar request was received from Pat Rakow re: red foxes, in downtown Lincoln, trying to kill her 18 year old cat. The latter case was referred to Scott Hyngstrom, Extension Specialist - Animal Damage Control, University Nebraska-Lincoln.

Wildlife Biologist McDaniel responded to three questionnaires: hooded merganser status from the Gaylord Memorial Laboratory, Puxico, MS; native plants availability to Aquatic and Wetland Nursery, Inc.; and lake characteristics and fish populations from Eric Wienchowski.

Wildlife Biologist McDaniel continued coordination with U.S. Forest Service and Nebraska Game & Parks that was initiated in 1990 re: vegetation documentation using VOR transects. The U.S. Forest Service Experimental Station in Rapid City, SD, has developed a regression analysis, from VOR and clippings, establishing standing crop (lbs./ac.) of dormant vegetation for Sandhill sand-choppy sand and sandy lowland range sites. McDaniel has been requested to provide orientation of computer analysis of transect data to Nebraska National Forest Service staff later this year. This technique has recently been very helpful to the Forest Service in litigation of grassland management on the Ft. Pierre National Grasslands near Pierre, SD.

Lang Elliott, sound recorder, was on Valentine NWR attempting to obtain waterfowl recordings -- weather did not cooperate. However, he did obtain recordings of turkey on the roost at Hackberry Headquarters. He plans on being back in June for cormorant recordings.

Elizabeth Zemke, wetland ecologist, and Lynn Wood, environmental scientist, with EA Engineering Science and Technology were on Valentine NWR to inspect the "bombing range" that the military used during WWII. The firm is under contract to the military to document hazards that may have been left at various impact areas in Nebraska. Biologist McDaniel was contacted by J.J. Yost, EA Engineering Science and Technology, for additional information on the Military Grand Island Precision Bombing Range #4 used on Valentine NWR during WWII. A copy of the final report is to be forwarded to this station by the U.S. Corps of Engineers, Omaha, NE.

ROS Lindvall assisted the National Forest Service with brood counts on their Lords Lake Ducks Unlimited Project on McKelvie National Forest.

Wildlife Biologist McDaniel assisted Carl Wolfe, Nebraska Game & Parks, with a Project Wild Workshop on June 25 for 12 elementary teachers from Nebraska and Colorado.

Wildlife Biologist McDaniel answered a "few" questions from Jim Polson, American Birds Magazine. Evidently, Valentine NWR is being included into an article in the magazine.

Wildlife Biologist McDaniel met with D. Stubbendiek, University of Lincoln, and Tom Thomas, Environmental Consultant - HWS Environmental Consulting, to discuss identification of Prairie Fringed Orchids at different stages of development. HWS is charged with the responsibility of inventorying a site location for proposed NOA weather monitoring facility in Thomas County.

Harold McQuire (local fisherman that has opposed Service fish management on Valentine NWR) will start to write articles in the local paper about projects going on within the Complex. Wildlife Biologist McDaniel provided a refuge tour for Mr. McQuire. Harold's initial reaction to the waterfowl and waterbird populations on the Marsh Lakes was very positive - now we'll see what he writes.

Five representatives from the Wisconsin Department of Natural Resources were given a weekend orientation of Valentine NWR by Wildlife Biologist McDaniel. They were on their way to attend the Joint Meeting - Sage Grouse Society and Prairie Grouse Technical Council in Ft. Collins, CO.

Wildlife Biologist McDaniel was contacted by Pat Shohon, Waldo Realty - O'Neill re: grazing and grazing rate charges on federal lands (refuge as well as U.S. Forest Service).

Wildlife Biologist McDaniel was contacted by Nebraska Game & Parks Commissioner Dr. Charles Blaha, Ord re: the time frame of Sandhills duck hunting season dates. The referral was made by Nebraska Game & Parks personnel.

Wildlife Biologist McDaniel reviewed a manuscript on grazing systems and relationship to ground nesting bird cover written by Dr. Clait Brown, CDW.

Wildlife Biologist McDaniel was contacted by Jean Nauss, Biologist -CE re: burying beetle records for Nebraska.

Wildlife Biologist McDaniel was contacted by Brian Sullivan, Waterfowl Biologist - Texas Parks & Wildlife, re: blue-winged teal production and migration.

Wildlife Biologist McDaniel provided land ownership details of prairie fringed orchid site locations to M. Fritz, NG&P.

Wildlife Biologist McDaniel participated in the Station Inspection of Des Lacs NWR Complex during the period of October 18-22.

Wildlife Biologist McDaniel attended the Joint Meeting - Sage Grouse Society and Prairie Grouse Technical Council in Ft. Collins, Colorado while on leave. He also took the opportunity and

attended a very interesting presentation at NERC by a delegation of foreign exchange scientist from China.

8. Other

a. meetings

Wildlife Biologist McDaniel attended the MAPPE workshop in Watertown, SD and also took the opportunity to discuss vegetation monitoring of CRP with Ron Reynolds, HAPET. Monitoring procedures were also discussed with Arnie Kruse.

Refuge Manager Huber assisted with the coordination of and attended the Nebraska State Coordination Meeting held March 10, 1993 in Lincoln. Topics of interest were the fisheries program on Valentine NWR, private lands and scenic river designation on the Niobrara River.

Wildlife Biologist McDaniel and Range Technician Sterry attended the Central Mountains and Plains Section - TWS and the CRP Meetings in Manhattan, Kansas, August 4-7.

ROS Mark Lindvall, Wildlife Biologist McDaniel, and Range Technician Rich Sterry attended the Nebraska Chapter of the Wildlife Society Annual Meeting held in Halsey, Nebraska. Mark was re-elected to the Board of Directors. Papers on law enforcement, partnerships, general topics, and elk management in Nebraska were presented.

b. training

Refuge Operations Specialist Lindvall attended the compatibility training course held in Denver on February 22 and 23. It was an excellent course.

Fire Management Officer Segar participated as an instructor at the Fire Management for Line Officers course in Portland, OR.

FMO Segar attended the Facilitative Instructor training April 18-23 in Grand Junction, CO.

FMO Segar and Wildlife Biologist McPeak attended USFS "Managing Fire Effects" training in Chadron, NE. Excellent session with many good ideas and news ways of looking at old problems.

c. other

An Administrative, Facilities and Fire Inspection was conducted by personnel from the Regional Office during the week of July 12th. The Regional personnel consisted of Skip Ladd, Maury Wright, John Cornely, Max Peace, Phil Street, Debbie Carter, and Anna Marie LaRosa. Overall the inspection was felt to be very productive. One highlight of the inspection was the involvement/interaction of all staff members of the complex with the Regional personnel.

## F. HABITAT MANAGEMENT

### 2. Wetlands

General: Ice-out occurred during the last weekend of March on lakes and wetlands at Valentine NWR. Wetland conditions are excellent as a result of accumulative moisture carried over from last fall. All major lakes were at overflow elevations or flowing out by the end of March. Wetland elevations drastically increased during April, and considerable staff-time was required to maintain water flows between wetlands. Steps have also been taken to minimize the amount of water flowing off Valentine NWR onto private land while protecting refuge water control structures and minimizing carp infestations. By the end of the month water elevations were stabilized and no problems were anticipated unless excess moisture continues. Wetland conditions remained good throughout May due to mild weather conditions and precipitation. Clear and Dewey Lake elevations slightly increased toward the end of the month in spite of the negative moisture balance for May. The elevation increase is attributed to high ground water levels; however, as transpiration and evaporation increase lake levels should begin to decline. Minimal water is flowing off the refuge onto private land. Wetland conditions have remained high throughout June due to mild weather conditions and precipitation. Clear and Dewey Lake elevations slightly decreased toward the end of the month, but, Willow Lake increased. Water flow from Watts and Willow Lakes onto private land was terminated by the end of June to allow downstream landowners an opportunity to hay their meadows. Hopefully, transpiration and evaporation will decrease water levels throughout the remainder of the year. Lake elevations and USGS groundwater monitoring well water elevations are presented in Tables 2 and 3.

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Table 2. Lake elevations on Valentine NWR in 1993.

<u>Lake</u>	<u>Minimum (month)</u>	<u>Maximum (month)</u>	<u>Average</u>
Clear	2917.06 (March)	2917.84 (April)	2917.41
Dewey	2924.00 (Sept)	2924.71 (April)	2924.34
Hackberry	2925.03 (June)	2925.21 (July)	2925.10
Pelican	2942.44 (March)	2942.94 (Oct)	2942.77
Watts	2924.6 (Oct)	2924.9 (April)	2924.68
Whitewater	2927.96 (July)	2928.92 (April)	2928.44
Willow	2913.69 (May)	2915.35 (July)	2914.5
N. Marsh	2896.58 (Apr, Jun)	2896.82 (July)	2896.69

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Table 3. USGS groundwater monitoring well readings for 1993, and average values from 1970-2002. No data were available for spring 1993. Data are groundwater elevation above sea level (ft), except for wells 17, 31, and 35; baseline elevations of these wells are unknown. For these wells, measured depth to groundwater was subtracted from 100 ft as an index of groundwater elevation.

<u>Well No.</u>	<u>Well Location</u>	<u>Fall 1993</u>	<u>Spring Average</u>	<u>Fall Average</u>
1	N. East Long	2875.73	2874.32	2873.37
2	SE Corner S. Marsh Lake	2894.43	2894.60	2893.33
3	SE Corner Pony Lake	2898.17	2899.47	2897.87
4	SE Cow Lake	2919.49	2919.22	2918.61
5	Calf Camp & Hwy 83	2896.35	2896.42	2895.23
6	Calf Camp West	2914.53	2915.44	2913.77
7	Little Hay West	2917.04	2916.07	2916.09
8	Little Hay & 83	2898.78	2899.45	2898.38
10	W. Pony & 83	2923.91	2922.86	2922.67
13	S. Willow Lake	2918.15	2917.28	2917.26
14	E. McKeel Lake	2920.67	2920.07	2919.16
15	S. East Sweetwater Lake	2925.67	2925.12	2924.71
16	SE Trout Lake	2898.27	2899.02	2898.83
17	E. Crowe Headquarters	95.11	95.27	95.11
18	NE old Harse place	2892.10	2891.7	2890.61
20	S Watts Lake	2925.66	2924.75	2924.23
21	E. Pony Pasture	2925.94	2924.97	2924.56
22	Hackberry-Dewey Canal	N.A.	2923.70	2925.21
23	Badger Bay	2924.49	2923.69	2923.86

25	E. Pelican Lake	2942.72	2943.78	2943.43
26	E. West Long Lake	2967.38	2965.33	2965.34
27	W. Recreation area, Dad' s Lake	2962.09	2957.673	2956.61
29	NW Pelican Lake	2948.49	2948.277	2947.42
30	S. Dewey Marsh	2939.94	2940.577	2939.50
31	W. Dewey Marsh	98.70	98.34815	98.61
32	N. Pelican Lake	2941.85	2941.567	2941.03
33	NW West Long	2979.80	2980.57	2979.88
34	83 & W. King Flat	2925.09	2924.04	2923.95
35	SE 21 Lake	97.40	96.17333	95.52
36	W. Sweetwater & 83	2926.67	2927.167	2926.51
38	SE West Twin	2920.14	2920.61	2920.08
39	WS Hassle place	N.A.	94.48696	94.10

## 7. Grazing

In 1985 the refuge habitat management program was changed and short-duration grazing started. Prior to 1985, much of the refuge grasslands were grazed on 6 week rotation. Refuge permittees initially resisted the change to short-duration grazing. We have however seen a gradual acceptance of it over the past years. Acceptance has come through reduced grazing fees for the extra work involved in moving cattle and the obvious improvement in refuge grasslands. Several ranchers are now using short-duration grazing on their own ranches. Authorized AUM for each permittee have remained about the same as in 1992.

Grazing fees for 1993 were:

spring grazing treatment	\$5.58/AUM
short-duration grazing	
1 day in unit	no charge
2 days in unit	\$5.58/AUM
3 days in unit	\$7.40/AUM
4 days in unit	\$8.14/Aum
5 days in unit	\$8.50/Aum

6 days in unit	\$8.87/AUM
7 days in unit	\$9.24/AUM
8 or more days in unit	\$10.70/AUM

feed hay and graze in unit	\$10.70/AUM
feed hay in feed lot	\$7.40/AUM
feed hay on road	\$7.40/AUM
winter	\$10.70/AUM

The full rate of \$10.70 is an decrease of \$.05 from the 1992 fee and is set by the Regional Office and reflects an decrease in cattle prices. Permittees also had their grazing bills reduced for improvements such as wells, fence, and tanks installed. In 1993, \$49,748.54 was spent on improvements and deducted from final billings. This year refuge permittees were required to either repair or hire a contractor to repair fences in the units they used. This is a change from the past when refuge crews repaired the fences and was implemented due to staff shortages. This year hay for the Texas longhorns at Fort Niobrara NWR was also put up and hauled by a contractor and the cost deducted from permittees grazing bills. Total collections for the 1993 grazing season were \$22,101.25. This total does not include the value of the refuge share of hay.

During 1993 a grazing rate survey was conducted to adjust the grazing fees at Valentine NWR. A base rate of \$15.60 per AUM was recommended based on eight interviews. Rates from interviews ranged from \$12.00 to \$21.00 per AUM. Our present rate is \$10.70 per AUM. The new base grazing rate for the state of Nebraska was set at \$17.87 per AUM. This is above the \$10.70 being charged in 1993 and more in line with rates being charged on private land.

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 ?? and shown in figure ??.

#### a. Spring Grazing Treatment

Spring grazing treatment (SGT) is done before the end of May on sub-irrigated meadow sites. The cattle are in the unit for greater than 2 weeks. Cattle eat or trample almost all of the residual cover. They also overgraze and thus reduce undesirable cool season exotic grasses. 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.

Dramatic results occur with this treatment. Exotic cool seasons, as Kentucky bluegrass, are suppressed and native warm seasons, as switchgrass, increase in vigor and density. The disadvantage is the loss of the unit for nesting in the year of treatment and a lower waterfowl nesting

density in the following year. Often the unit can however be rested for up to 5 years following treatment.

In 1993, 24 habitat units totaling 4,381 acres received a spring grazing treatment and included some areas that were latter hayed. This year in some units, spring grazing treatments were done before the growing season. This was done in areas without Kentucky bluegrass problems and on some areas to be hayed later.

#### b. Spring Short-duration Grazing

Spring short-duration grazing (ES-SD) is grazing a unit for less than 2 weeks during May. Generally the cattle are in the unit for only 3 to 5 days. This type of grazing is generally done in hill units to stimulate growth of grasses, especially cool seasons. The short exposure times eliminate overgrazing. In 1993, 42 habitat units totaling 9,263 acres had spring short-duration grazing. Note that these totals include some units ES-SD followed by SD-S or H.

#### c. Short-duration Summer Grazing

Short-duration summer grazing (SD-S) is done from June 1 through September 1. Cattle are in a unit for less than 2 weeks. Most units are grazed only 3 to 5 days and the cattle moved on to the next unit. Electric fences are used to break up larger units and increase stock density. Most short-duration summer grazing was completed by the first week in August. In 1993 70 habitat units totaling 18,077 acres were short-duration summer grazed. Time in each unit was increased to allow more units to be in rest. Rainfall coupled with cool weather made for a good growing season for grasses.

#### d. Summer Grazing

Summer grazing is done from June 1 through September 1 and cattle are in the unit for 2 weeks or longer. The purpose of summer grazing is to reduce grasses and encourage blowout for the endangered blowout penstemon. In 1993 2 units totaling 1,121 acres were summer grazed.

#### e. Fall Grazing

Fall grazing is done from September through November. Fall grazing can reduce mulch accumulations, add fertilization, and maintain grouse leks. If done at the proper time cattle will also graze out small wetlands and leave the surrounding upland vegetation alone. Generally the wetlands have green in them while the uplands have only cured grasses. Grazing in the wetlands recycles nutrients and provides pair habitat for ducks in the spring. Generally we have moved away from fall grazing except for pothole grazing. Fall grazing eliminates both winter cover and nesting cover in the following year. Some units were fall grazed in 1993 that will be given a spring grazing treatment in 1994. In 1993, 7 habitat units totaling 1,971 acres were fall grazed.

## f. Winter Grazing

Winter grazing (W) is done during the November through April period. In winter grazing, cattle are fed hay on a feed ground in a unit. The hay comes off the refuge. When the weather is harsh the cattle feed on hay but when it is nice they graze away from the hay ground. Winter feeding creates dense weed patches for several years following the treatment. These weed patches provide winter food for deer, pheasants, and other resident wildlife. Units with a history of winter grazing combined with feeding also have excellent growth of grasses away from the feedlot. This is due to the import of energy in the form of fertilizer. Hay is cut in the meadows. One Unit 19C was targeted as a new winter feed area. Our plan is to reduce yucca and increase grasses in this unit using winter grazing and feeding. Resident wildlife also utilize waste grain from the feeding operation. Presently two feeding areas are maintained in Calf Camp and Little Hay Valleys. Each feeding area has three habitat units in it of which only one is used each year. Winter feeding can also be used to stabilize blowouts and road. Permittees share of hay is also fed on mowed meadows to increase the volume and quantity of hay. In 1993, 6 habitat units totalling 1,176 acres were winter grazed.

## 8. Haying

The cool wet summer weather and high water table resulted in a poor hay crop. Some higher areas were mowed late to make up a part of the shortage. Seven hundred and forty two acres of sub-irrigated meadow, wetlands, or sand sites were mowed and hayed by four permittees and the contractor. The haying was done in 22 different habitat units and yielded 11,781 tons of hay. Units hayed are listed in Table ?? and shown in figure ?. A program was continued to improve the quality and quantity of hay produced. Meadows to be hayed are spring grazed prior to the growing season and have hay fed on them in the winter. Cattle will provide fertilization and remove old growth from the hay.

Haying is used to provide browse areas for Canada geese, sandhill cranes, prairie grouse, and deer. Mowing also provides lek sites for grouse and opens up small wetlands for pair habitat. The haying is done under cooperative farming agreements with a 40/60 (refuge/permittee split) and on a feed back on the refuge program. The permittee delivers the refuge share to Fort Niobrara NWR for winter feed for Texas longhorns or to areas on Valentine NWR for road hay. Road hay is used to stabilize sand trails used by the public. This year 637 tons were delivered to Fort Niobrara NWR and 104 held for the roads at Valentine NWR. Two hundred tons were fed in winter grazing to create weed patches and reduce yucca as described in section F7e. Permittees share was 840 tons of hay. Of this they fed 141 tons on refuge meadows to improve hay quality and quantity.

Again this year areas to be hayed were searched for the endangered prairie white-fringed orchid. When plants were found, the areas were marked and not mowed.

## 9. Fire Management

FMO Segar completed the draft of the Annual Fire Report for the Regional Office. Also completed were the computer entry of regional fire reports and the review of prescribed burn plans from refuges throughout the region.

FMO Segar assisted the Branch of Fire Management staff with correction of Region 6 fire report database. He also completed reviews of prescribed burn plans from Quivira, Flint Hills, Kirwin, and Waubay NWR's.

FMO Segar Coordinated details for the ordering and installation of a remote automated weather station with radio telemetry. The station is to be installed around April 1.

The draft of the Fire Management Plan revisions was completed.

Reviews of prescribed burn plans from Rainwater, Quivera, Devils Lake, Lostwood, Medicine Lake, Bowdoin, and National Bison Range were completed.

The prescribed burn on Duck Lake unit on Valentine NWR was completed. The burn was successful, although the humidity was too high.

FMO Segar assisted Lacreek NWR with RX burning this month.

Software was installed and FMO Segar began accessing the Weather Information Management System. Historic weather observations are unavailable at this time for downloading and analysis.

FMO Segar coordinated transfer of BLM heavy engine to Ft. Niobrara for testing. Engine should be available for pick up as soon as paperwork clears the Regional Office. Also tried to get some BLM light engines transferred to the complex, but was unsuccessful.

FMO Segar instructed S130/190 course in Jamestown, North Dakota week of May 4-6.

FMO Segar and Range Technician Waln completed initial personnel entries in the Fire Management Information System.

FMO Segar and Range Technician Waln installed a foam proportioner on the Hackberry Headquarters fire engine.

Range Technician Waln installed side sprayers on the three 200 gallon primary fire engines.

FMO Segar visited Crescent Lake NWR to assist with a hazard fuel analysis.

Taylor Fire - reported as a grass fire less than a 1/2 mile south of the Ft. Niobrara NWR boundary at 2030 hours on September 12. One refuge engine responded with the local fire department.

Another refuge engine was activated as a reserve and to look for additional fires that may have been caused by the lightning storm. The fire was suppressed at 5 acres by the local fire department before the refuge engine arrived. No additional fires were discovered.

Anderson Fire - reported as a hay stackyard fire adjacent to the southern boundary of Valentine NWR at 0830 hours on September 19. It was raining at the time of discovery, so only one refuge engine was requested by the landowner to assist with suppression. A refuge engine responded to assist ranchers, and was responsible for suppressing a spot fire and saving one bale.

The Sale fire was reported on private property during the end of the surplus animal sale on October 6. Two refuge engines were readied and/or responded due to extreme fire danger conditions. Luckily, the refuge engines and crews were not needed. Personnel were able to return to assist with after sale cleanup and loading.

National resources were mobilized to Southern California to assist with the suppression of disastrous brush fires. The FMO coordinated the availability of fire fighters within the zone, but no fire fighters were dispatched due to improved fire conditions. The following USFWS employees were made available for possible assignment:

Bill Waln	Seasonal Fire Fighter - FTN-VLT
Rich Sterry	Seasonal Fire Fighter - FTN-VLT
Casey McPeak	Maintenance Worker - FTN-VLT
Bill Langer	Seasonal Employee - VLT FWMAO
Jeff Essman	Seasonal Fire Fighter - CRL
Mike Martin	Seasonal Fire Fighter - CRL

The Ormasher Fire was reported on private property on November 10. After initial attack, a refuge engine and crew were requested by the Valentine RFD because of high winds. Refuge Manager Huber and Supervisory ROS Sellers responded. The fire burned approximately 25 acres before being controlled.

Radio repeater system repairs dragged out. Assistance was obtained from NIFC radio technicians regarding solutions. Motorola technicians will try once again to tune the antennae, and if that fails, the antennae will be replaced. Total replacement cost for an antennae that never worked properly will be approximately \$750, with will chance of getting any credit for the old antennae. A new replacement mobile radio was obtained to replace the Suburban radio that has experienced intermittent problems.

FMO Segar attended the 1993 Interior West Fire Council Conference and meeting with FRMC Street. The meeting provided some excellent programs on wildfire suppression and prescribed fire, as well as providing time to discuss several issues such as budget and fire management planning with the RFMC, RFE, and other FMO's.

## 10. Pest Control

Both Canada thistle and leafy spurge grew very well this year possibly due to the cool wet spring. Insect releases of Aphthona nigricutis, spurge root boring flea beetle, (500 insects in 2B2 B and D), Urophora cardui, Canada thistle stem gall fly, (500 insects in 23B2 and 21C2), and Larinus planus, Canada thistle seed head weevil, (500 insects in 23B2 and 18C1) were made at Valentine NWR. Insects were paid for by grazing permittees. Total acreage of spurge on the refuge is estimated at 20 acres.

Canada thistle patches were mowed, some 2 times, in units 16B1, 18B7N, 21A4, 22B1, 30A trees, 25B, 24C1, and 24A5. About 2 acres total was mowed. Total thistle acreage on the refuge is estimated at 40 acres.

Biological Technician Larry Vaughn gave a tour to 19 members of the Angora Goat Association. They visited the sites on Valentine NWR where we have been using goats to graze spurge. He also showed them the system set up to house and enclose the spurge eaters. This year we used 12 borrowed goats to graze about 5 acres of spurge located in small patches in units 31A west and east ends, 34C tree lot, 35B tree lot, and 31A. This is the third year with the goats and we have seen a reduction in stem density in the square meter sample plots. Three patches have been monitored with 3 one square meter samples taken in each plot. Average densities per square meter for all samples was 48 in 1991, 45 in 1992, and 32 in 1993.

Refuge Operations Specialist Lindvall and Biological Technician Vaughn attended the Nebraska Leafy Spurge Symposium in Broken Bow on August 5. The program updated work using goats, chemicals, and bugs to control spurge. Norm Reece from ARS had some dramatic slides of control using insects.

A letter was written to the Cherry County weed supervisor outlining our 1992 weed control efforts and our plans for 1993.

Biological Technician Vaughn attended the pesticide applicators refresher course for ag plants. We did not apply any herbicides in 1993.

## 13. WPA Easement Monitoring

The Johnson easement in Keya Paha County was visited on several occasions. The fence was repaired and quite a few downed trees taken off the fence. Musk thistles growing around the building sites were sprayed by FmHA under contract. The historic house on the property is deteriorating quickly. There is a large hole in the roof. The Mead easement was not visited during the year.

## G. WILDLIFE

### 2. Endangered and/or Threatened Species

b. Bald Eagle: Results of the NWF Eagle Count were forwarded to John Dinan, Nongame Bird Biologist, NG&P. Only two eagles were observed on Valentine NWR during the survey time. Bald eagles generally concentrate on and adjacent to Valentine NWR during ice breakup.

An immature bald eagle was observed at Hackberry headquarters during the week of October 24 attempting to roost in the wild turkey roost site.

c. Barn Owl: Barn owls successfully nested in the observation tower at Hackberry Lake from 1980-87 and in 1989. The tower was not checked this year to document if barn owls had attempted to nest this year. The bottom portion of the stairs was removed to prevent access.

e. Blowout Penstemon: Wildlife Biologist McDaniel and Wally Jobman, FWE-Grand Island, observed a single blowout penstemon plant in H.U. 3D, but, as in 1991 and 1992, insects had devoured it. Dr. Weedon, CSC, inventoried the plants on Valentine NWR, Ballard Marsh SUA and the Francis Crowe Ranch during the month.

f. Prairie Fringed Orchid: Wildlife Biologist McDaniel and Wally Jobman, FWE-Grand Island, observed Prairie Fringed Orchid plants in H.U. 25B, ROW 83-H.U. 24C. Plants were not observed in H.U. 32B2, 18B7 nor west of Duck Lake on the Powell Ranch. However, the plants are most more observable during the July flowering stage.

A total of 144 prairie fringed orchid plants were inventoried in five general locations on Valentine NWR. There were 26 other plants at three locations documented on private land adjacent to Valentine NWR. Prairie Fringed Orchids were monitored via cooperative effort of YCC, refuge staff and Mike Fritz, Botanist - Nebraska Game & Parks; therefore, exact numbers are not known because not all plants were marked.

There were no marked prairie fringed orchid seed stalks present after the September graze in H.U.25B. The seed pods were still soft at the time of the graze and may not have developed viable seed.

g. American Burying Beetle: A Section 7 consultation was initiated with Wally Jobman, FWE-Grand Island, re: The American Burying Beetle. A draft has been prepared by Biologist McDaniel.

All bullsnake trap funnel entrances were plugged with foam rubber the first of the month to prevent capture of American Burying Beetles. On July 28, Range Technician Rich Sterry, found an American Burying Beetle in a garbage can at Hackberry Headquarters. The beetle was photographed and during the process flew away. On July 29, Maintenance Worker Dave Kime

recovered a specimen from the P.H. Young Ranch that had been killed by an electric "bug zapper". The records were reported to Wally Jobman, FWE-Grand Island and the recovered specimen has been frozen and stored at Hackberry Headquarters.

### 3. Waterfowl

a. Ducks: Biologist McDaniel prepared a grassland management recommendation based upon documentation of nest dragging, pair and brood surveys, and cover acreage treatment available for Valentine NWR since 1970. The summary document was discussed-reviewed by all management staff on January 20.

Biologist McDaniel summarized available duck breeding pair documentation 1968-92 via seven topographical areas for Valentine NWR - land use treatment will also be completed via the addition of a comparable "field" in the habitat management data base. The process will enable management to look at historical trends of waterfowl concentrations and how well management needs were met; and also provide another means for future planning processes.

Ducks began migrating into the area just before mid-Mar as wetlands became ice free populations increased. The only species not represented by the end of the month were wood duck, wigeon, blue-winged teal, and ruddy ducks. The first mallard nest was observed in H.U. 3B on March 24 - the nest had been initiated on March 21. Conibear and leg-hold trapping activities were initiated in the Marsh Lakes area. Two skunks and two raccoons were removed from H.U. 21B. Electrical fence barriers were established on the "Island" in the Marsh Lakes to maintain the high waterfowl productivity level documented since 1982. Predator trapping also continued in the Marsh Lakes area with several skunks and raccoons removed.

Recently, duck breeding pair data was summarized into seven areas on Valentine NWR for the period 1968-91. The areas were established based upon a logical basis, i.e., similar topography and/or management activities (wilderness lakes, fishing lakes, etc.). Duck breeding pair counts were completed only for the Marsh Lakes and Cow/King Flat areas this year and it appears that pairs are down somewhat from 1992. Documentation of pairs is not complete as of this time.

The first round of nest dragging was completed on the Marsh Lakes. Approximately, 165 duck nests were located with a majority being mallard. The highest density continues to be on the Island Predation Control Project (H.U. 18C2) where 116 nests were found. Early mammalian nest predations were documented on the Island, however, recent nest predations have not been noted and many nests are hatching. Mink predation continues to be quite high in H.U. 21B; however, a large male was trapped at the end of the month which should increase the opportunity for remaining nests to hatch. Minimal bullsnake depredation has been noted to date, but bullsnake activity has not peaked yet.

The second round of nest dragging was completed on the Marsh Lakes. A total of 115 duck nests were located on the upland range sites within the Marsh Lakes Predator Control/Exclusion Area. To

date, approximately 40% (traditional) of the nests have hatched. This is considerably higher than the past two years. The highest density continues to be on the Island Predation Control Project (H.U. 18C2) where 170+ nests were found. Early mammalian nest predations was documented on the Island and recently some mink nest predation was noted. However, a high percent of hatch on the Island is also expected - many nests are still active.

An active mink den site was located and traps were set at the site. Remains at the site included 1 adult coot, 2 adult mallard hens, 1 mallard duckling, 1 western grebe young and an adult muskrat.

Weather conditions were not conducive for duck brood counts in mid-June. However, not many broods have been randomly observed on the Marsh Lakes considering the hatching success documented to date. A second duck brood count was completed during July. Dabbler production was greater on the Marsh Lakes this year compared to 1992, however, mallard production was somewhat reduced. This should not have been unexpected since a bulk of the undisturbed nesting cover was less than 2 years rest treatment.

Nest monitoring activities on the Island were completed during August. Excellent hatching success was documented this year. A minimum of 66% traditional nest success for 173 nests was documented with possibly up to 76% if all nest sites could have been relocated. Mallards (118 nests) had the highest nest success with over 72%. Bullsnares only destroyed 6 of the 35 nests destroyed by predators. Most of the nests destroyed occurred before the electric fences were activated.

Waterfowl numbers began to build by the end of September with some early migrating birds. Blue-winged teal virtually vanished after the cold spell of September 13 & 14. Wood ducks are particularly common on Valentine NWR.

Waterfowl numbers were conspicuous in their absence! The early frost in September moved out local birds and the fall migration just has not materialized. Small refuge wetlands were frozen over for the duck hunting season opener and most lakes were frozen over on October 31. All wetlands opened up by mid-day. During November there were approximately 3,000 C. mergansers and C. goldeyes on Valentine NWR.

b. Geese: Results of the Mid-Winter Waterfowl Count were submitted to Joe Gabig, NG&P Waterfowl Specialist. Approximately 200 Canada geese were present on and adjacent to Valentine NWR through the winter. By March, Canada geese had spread throughout the area - approximately 1,200 were on Valentine NWR at the end of the month. White-fronted and snow/blue geese were observed migrating through the area during the last week of the month. By April, most Canada goose broods on Valentine NWR had hatched; however, there were still several birds incubating nests at the end of May.

Wildlife Biologist McDaniel was contacted by District Biologist Vodhenhal, Nebraska Game & Parks to conduct a Canada goose nesting survey on a 7 acre island in Brown County. A nest density of

approximately 10 nests/acre was observed with 70% traditional nest success.

During the last week of June, Nebraska Game & Parks personnel captured/banded 80+ geese on Vrinder's marsh adjacent to Valentine NWR.

In Sept, refuge staff participated in the White-fronted Goose Survey, with no birds observed. White-fronted geese usually do not migrate through the area until the first week of October, and were observed migrating through the area the second week of October.

Approximately 900 C. geese were on Valentine NWR until the sub-zero weather was experienced on the 24th of November.

c. Trumpeter Swan: Six trumpeter swans were observed on Watts Lake on March 15. The first production of Trumpeter Swans occurred on Valentine NWR this year since the late 1970's. Two cygnets were hatched, however, by the end of September only one remained.

d. Coots: Tremendous coot reproduction occurred on the Marsh Lakes this year. Emergent vegetation was available for nesting for the first time in several years. Coot numbers increased throughout September and into the first week of October, but declined throughout the remainder of the month.

#### 4. Marsh and Waterbirds

White-faced ibis nesting records for Valentine NWR were forwarded to D. Monely, Denver, CO. Five white-faced ibis were observed on the Valentine NWR Marsh Lakes - nesting activity has not been documented, to date, this year.

White pelican eggs (5) were observed on the cormorant nesting island in the Marsh Lakes on Valentine NWR during the month. However, they were evidently "dump" eggs since they are not being incubated.

Nesting activity by western grebes, black crowned herons and Forster's terns is well under way on the Valentine NWR.

Western grebe broods were particularly common on the Marsh Lakes during June. Cormorants also had a very successful hatch with no mortality been observed, to date. Least bitterns were observed on the Marsh Lakes during the month and an American bittern nest under observation in H.U. 21B3 hatched.

A nesting survey was accomplished for cormorants - a total of 735 nest sites were recorded. Limited mortality occurred this year and by the end of August several nests still had small hatchlings present.

## 5. Shorebirds, Gulls, Terns and Allied Species

Long-billed dowitchers and several other species of shorebirds were observed during the spring and fall migrations. However, very limited shorebird habitat is available due to the high water levels. Some black terns stayed in the area until mid-September.

## 6. Raptors

Rough-legged hawk and red-tailed hawk sightings this winter were down from previous years. Many species of raptors were observed during the fall migration. In Sept, an osprey, ferruginous and rough-legged hawks were observed.

Wildlife Biologist McDaniel and Maintenance Worker Kime collected owl "pellets" in cooperation with Nebraska Game and Parks Conservation Officer Gray for a Project Wild class project at Valentine Middle School.

## 7. Other Migratory Birds

Locations of breeding pairs and nests of loggerhead shrikes and upland sandpipers are again being recorded on and adjacent to Valentine NWR.

September saw migrating swallows concentrating in large flocks, and warblers (yellow-rumped) had arrived by the end of the month. White-breasted nuthatches have also been recorded.

## 8. Game Mammals

a. Deer: The aerial survey of deer and muskrat houses on Valentine NWR was completed on January 22. Survey conditions were less than ideal for deer and only 48 were counted. Conditions for the rat house survey were good and 621 houses were counted. This is way up from last year when only a handful were seen.

Deer season ran from November 13 through 21. At Valentine NWR 92 vehicles were counted with an estimated 184 hunters. A total of 114 deer (13 mule and 101 whitetails) were harvested during the 1993 Rifle season on Valentine NWR. Thirty-three were harvested in the Calamus West Unit (3 mule and 30 whitetails) and 81 in the Sandhills Unit (10 mule and 71 whitetails).

b. Muskrat: Muskrat house building activity is very evident on Valentine NWR. The population appears to be higher than it has been for several years.

## 10. Other Resident Wildlife

a. Prairie Grouse: Prairie grouse lek counts were hampered by inclement weather conditions; however, they were finally completed. Initial results for Valentine NWR indicate that the prairie chicken male breeding population is nearly 30% less than documented during 1992. This should not come as a surprise since the juv/adult harvest ratio in 1992 was 0.5 - indicating a very poor production year. This is the first year since 1977 that the prairie chicken population has not continued to increase. Sharptails also were somewhat down, but, not to the extent of prairie chickens.

Brood observations of prairie chicken and sharp-tailed grouse on Valentine NWR were forwarded to Bill. Vodenhal, District Biologist with the Nebraska Game & Parks Commission in Bassett, Nebraska.

The 1993 prairie grouse hunter harvest was the third lowest harvest documented since 1982 - only 1982 and 1990 have been lower. A total of 276 birds (230 sharptail and 42 prairie chicken) were reported harvested via the voluntary Prairie Grouse Harvest and Wing Collection Survey carried out in cooperation with Nebraska Game & Parks. The juvenile:adult harvest ratio for sharptails was 3.7 indicating good production from the low recruitment of 1992. However, the prairie chicken juvenile:adult harvest ratio was 1.8 -below maintenance level. Only 1.1 birds were harvested per hunter day - only 1982 was lower at 1.0.

b. Ring-necked Pheasant: Brood observations of pheasant on Valentine NWR were forwarded to George Nason, District Biologist with Nebraska Game & Parks Commission in North Platte. Pheasant season opened in Nebraska on November 6. Pheasant numbers are down and so was hunter success on Valentine NWR. An estimated 40 hunters were out for the opener, and many did not bag a bird.

c. Wild Turkey: One brood of turkeys was observed at Hackberry Headquarters which was approximately 8 weeks of age by the end of September.

e. Reptiles, Amphibians and Others: Adult yellow mud turtles emerged from hibernacula during the first week of May and the 1-3 year old's emerged during mid-month. This is the first year that considerable motor vehicle mortality has not occurred on the Pelican Lake public use trail (only one adult was observed road killed this month). However, one of the fence contractors had closed a gate and didn't remove the trail closed sign attached to the gate. This dramatically reduced public motorized vehicle use along Pelican Lake on Valentine NWR during a critical time for the turtles - moving from the hills to wetlands.

Turtle researchers, Dr's. G. and M. Packard, CSU, and K. Miller, Franklin and Marshall College, were on Valentine NWR during the month continuing their on-going hatching physiology research. Weather conditions have not been favorable for nesting turtles - nesting has "trickled" throughout June.

## 11. Fisheries Resources

This dissolved oxygen levels in the Valentine NWR fishing lakes were checked on March 4. Thick ice and snow cover led us to believe the lakes might suffer winter kill. All lakes except Rice checked out good. Rice is very shallow and had a DO of 1.5 which is low enough to cause a winter kill.

The Federal-State northern pike egg collection project was initiated on Pelican Lake at the end of March. Many northerns had already spawned under the ice; however, only 10 million eggs are targeted for this spring.

In April, a carp trap was installed at the outlet of Whitewater to capture carp from Dewey Lake. The initial result appear to be very effective; however, we now have to figure out what to do with several tons of dead carp and keep the trapping operation working. Approximately 75 tons of carp (20# average) were captured and removed from Dewey Lake - it took longer to get the carp out of the trap than in it! Monitoring by Fishery Services later this year will possibly enable documentation to determine if the removal of this carp bio-mass was beneficial enough to continue the effort.

A winter kill of carp on the Marsh Lakes was documented in May. The windrow of dead carp could not been seen until biological activities via boat were initiated on Marsh Lakes. It is not known to what extent that the winter kill reduced the carp population; however, live carp are clearly visible in the protected bays. Carp control activities, under an experimental use permit issued to Jim Fajt (Auburn University), were initiated in June. Two automatic feeders were purchased from Sweeney, Inc from Texas, and two bait stations were established in the Marsh Lakes in June. One bait dispenser had a defective battery, so only one bait dispenser was functioning in June. Pre-bait was purchased from Steele Feeds in Valentine. Carp were observed feeding at one bait station, however, carp use of the feeders was sporadic. The control bait was administered in Sept, but not until after the water temperature had dropped to  $\geq 53^{\circ}$  F. Apparently, the effectiveness of the chemical used in this treatment is very low in cooler temperatures, and only one sick carp was observed following treatment. It is imperative that future activities employing a Fish Management Bait technique for carp control be carried out in a more timely manner such that the chemical treatment coincides with water conditions for effective carp control. It may also be necessary to place bait stations where they receive more consistent use for effective treatment.

#### 15. Animal Control

To date only 4 raccoons, 4 skunks, 1 badger (road-kill), 1 mink, and 1 coyote have been removed from the Marsh Lakes are on Valentine NWR. However, nest predation, primarily by mink, has continued. Bullsnake traps were fully operational by the time bullsnakes emerged from hibernacula.

Mammal and reptilian control activities were terminated within the Marsh Lakes Predation Control Area at the first of the July on Valentine NWR.

#### 17. Disease Prevention and Control

The cormorant nest colony was inspected on May 18 for bird mortality documented the past two years. To date, the cause of mortality has not been determined even though specimens have been submitted to the National Wildlife Health Lab in Madison, WI. Periodic monitoring continued throughout the summer, and **no migratory bird mortality was observed on the Marsh Lakes.**

## H. PUBLIC USE

### 1. General

News releases were prepared and sent out to area television, radio, and newspaper outlets. There are 41 outlets on our mailing list. It is not known how many use the releases. The two Valentine papers and radio station used all releases. The following were sent in 1993:

Blue Ice and Bald Eagles

Valentine Refuge Roads Closed by Snow

Longhorn Calving Time

Come to the Grouse Dance

Northern Pike Eggs Collected at Valentine Refuge

Come Watch the Turkeys

Refuge Volunteers

Refuge Field Trip to Celebrate International Bird Day

Wetland Values

Youth Conservation Corps 18th Season

Buffalo and Longhorn Roundup

Kids Fishing Day

Fort Niobrara Refuge Buffalo and Longhorn Sale

Fort Niobrara Refuge Buffalo and Longhorn Sale Held

Trapping on Valentine National Wildlife Refuge

Whooping Cranes Stop at Fort Niobrara Refuge

We had a chance to review an article by Doug Chadwick on the prairie which appeared in the October 1993 National Geographic. The article has several pages on Fort Niobrara and Valentine NWRs.

An article by Richard Homan "Running Wild in Nebraska" appeared in the Sunday July 11 travel section of the Washington Post, circulation 1,166,000. The article featured both Fort Niobrara and Valentine NWRs and has 3 pictures from the refuges, including a large shot of the elk, in it.

Refuge Operations Specialist Lindvall provided comments to Lloyd Smith who is updating the refuge manual section on visitor protection.

People for the Access to the Woods (PAWS) sent comments on the Ft. Niobrara and Valentine NWR transition plan to us. Our estimate for costs to make programs accessible was \$376,450 and PAWS' \$28,568. We used MMS cost estimates and the assumption that all refuge public use programs were to be made accessible and meet the specifications in the manuals. PAWS' took a more practical view with not all programs to be included and all specs not to be met. Their cost estimates were also lower.

The Valentine for the Birds leaflet was reprinted with funding provided by the Fort Niobrara Natural History Association and North Central Audubon. The leaflet has information on bird watching spots and seasons in this area.

Two-hundred dollars donated by the Nebraska BASS Federation was sent in to sent up a contributed funds account. The money will be used to build a boat ramp at Valentine NWR.

Sergey Ivanov and Mikhail Dykhan, two Russian interns on a scientist exchange program, visited both Fort Niobrara and Valentine NWRs on April 20 and 21. Sergey is the Coordinator of Ecotourism and works at the Bol'she-Khekhsirski State Reserve along the Amur River on the Russia - China border. Mikhail is the director of the Kurilski Sate Reserve in the Kuril Islands north of Japan. They were here on a grant from the Institute of Soviet American Relations and were hosted by the Rowe Sanctuary in Nebraska. They are travelled to different areas to learn about tourism and environmental education in wildlife areas. Presently their reserves are closed to all but staff and scientists. They also favored refuge staff and families with slide shows on their very beautiful and wildlife rich reserves.

Assistant Refuge Manager Lindvall attended the regional tourism conference held in Valentine on April 23 and sponsored by the State Tourism Board and Extension Service. The main subject matter was how to attract more tourists and how to get their money once they arrived. A little time was given to managing the tourist influx into this area. One speaker noted that you better manage them because they will come in ever larger numbers whether you like it or not.

## 2. Environmental Education- Students

Wildlife Week programs were not presented this year due to shortage of staff. We usually give programs to about 800 students.

Refuge Operations Specialist Lindvall presented talks to 6 groups of middle school students, 180 total, as part of the 4-H and Natural Resource District's Conservation Day held on September 28. The presentation was titled Wildlife Management and Conservation. Other presentations were on recycling, impact of natural disasters, scenic rivers, range/forest conservation, nature's influence on settlement, and a surprise session. The weather was great for this opportunity to reach a large number of students in a short time.

## 7. Other Interpretive Programs

Short orientation talks on both refuges were given at three meetings sponsored by the Valentine Chamber of Commerce. About 100 people attended the talks which were to let area people who meet tourists know what the 5 major attractions to the area are and what visitors can see and do here.

## 8. Hunting

Waterfowl hunting is permitted on Watts, Rice, and Duck Lakes. Season and limits are the same as for the state. Waterfowl season opened on October 9 and closed on October 17 for the area including Valentine NWR. It the opened again on November 11 and ran through December 22. Area hunters were not pleased with the new framework as by November 11 the marshes are frozen and the ducks gone which makes for a short season. About 10 hunters were out for the opener. An estimated 30 visits were made by duck hunters.

Pheasant season opened in Nebraska on November 6 and ran through January 31 of 1994. Pheasant numbers were down and so was hunter success on Valentine NWR. An estimated 40 hunters were out for the opener. Many did not bag a bird. The season continued with very few birds bagged. No formal surveys were done and an estimate of 250 visits for pheasant hunting is made.

The 1993 prairie grouse season ran from September 18 through November 30 with a three bird limit. Hunter harvest is reported through wing collection boxes run in conjunction with the Nebraska Game and Parks Commission. In 1993 a total of 276 grouse (230 sharptail and 42 prairie chicken) were reported harvested. The juvenile/adult ratio was 3.7 for sharptail and 1.8 for prairie chickens. Only 1.1 birds per hunter day was reported, the second lowest since the collections boxes were put out. Two hundred and forty one hunters participated in the voluntary survey.

The rifle deer season ran from November 13 through November 21. At Valentine NWR 92 vehicles were counted with an estimated 184 hunters. If the average hunter stays for 3 days this figures out to 550 hunter days. A total of 114 deer (13 mule and 101 white-tailed) were harvested. This number comes from deer checked by refuge officers and the records from the Nebraska Game and Parks check stations. The Sandhills Unit, all the refuge west of Highway 83, is being managed as a trophy unit by the state. Permits were reduced and made 100% either sex. The idea is that hunters will take a doe early in the season and go home leaving the bucks to mature. We have seen some nicer bucks on the refuge so maybe its working.

Nebraska muzzleloader deer season ran from December 4-19. Only one hunter was known to have hunted on Valentine NWR and did not shoot a deer.

Coyotes can be hunted on the refuge between December 1 and March 15. Sixty one free permits were issued to hunt coyotes for the 92-93 season at Valentine NWR. Thirty hunters returned the post card

permits and reported harvesting 8 coyotes.

#### 9. Fishing

Fishing, especially ice fishing, accounts for the bulk of the visits to the refuge. In 1993 an estimated 9,100 fishing visits were made. This figure is based on 17 surveys made throughout the year. Twelve of the surveys were run on weekends and 5 on weekdays. Ice was good throughout most of the winter which increases visits.

Regulations for 1993 were the same as the state with the exception that bass had a 15 inch minimum size and northern pike had a 28 inch maximum size (all pike greater than 28 inches to be released), and use of minnows for bait was prohibited. Fishermen seemed to like the new pike length limit as there was still good catch and release fishing and those who wanted to keep fish could.

The annual report for "Master Angler" fish was received from the State of Nebraska. Valentine NWR was well represented on the list with 16 of 102 master angler northern pike taken on the refuge.

Figures for other fish are 2 of 13 muskie; 5 of 41 bullhead; 21 of 623 largemouth bass; 88 of 230 bluegill; and 1 of 91 perch. The refuge continues to be one of the best places in Nebraska to catch a trophy size fish.

#### 10. Trapping

No one applied for the three trapping permits available for Valentine NWR.

#### 11. Wildlife Observation

Blinds for observing the displays of sharp-tailed grouse and prairie chickens were used by 23 groups this spring. Most weekends both blinds were booked.

#### 17. Law Enforcement

The fall LE requalification and refresher was held at Fort Niobrara NWR on August 23 and 24. Refuge officers from LaCreek, Rainwater, Crescent Lake, Fort Niobrara, and Valentine NWRs qualified with pistol, shotgun, and rifle. Bruce Weibe, a conservation officer with Nebraska Game and Parks, updated the group on changes in their regulations. Special agents Vaughn, Damico, and Medina spoke on federal regs and filling of notices of violation. Dave Oates, Nebraska Game and Parks, gave a good presentation on wildlife forensics including information on determining sex and species in various wildlife from parts. He also gave information on determining species of fish from filets. He is putting out a book on this subject.

All refuge officers (Huber, Kime, Vaughn, Sellers, Lindvall) completed the 40 hour LE refresher held in Marana, AZ.

The law enforcement assessment for Fort Niobrara and Valentine NWRs was completed. Presently there are 5 collateral duty officers for the two refuges, one wildlife management area, and two easements. The Complex most nearly fits the Model II in the plan and a recommendation was made to hire a full time officer and retain two collateral duty officers at Fort Niobrara and two at Valentine.

Fifteen violation notices were issued during the year. Status of the cases is given in table ???. No cases were pending from 1992.

Table Citations issued by refuge officers in 1993.

<u>violation</u>	<u>date</u>	<u>fine</u>	<u>disposition</u>
overbag-fish	1/7/93	\$125	paid
no fishing license	1/9/93	\$125	paid
fishing with 6 lines	1/20/93	\$125	paid
driving on ice	1/23/93	\$50	paid
fishing with 6 lines	2/6/93	\$125	paid
fishing with 6 lines	2/7/99	\$125	paid
fish - size limit	2/6/93	\$125	dismissed-magistrate
fish - size limit	3/20/93	\$125	paid
fish - size limit	3/20/93	\$125	paid
fish - size limit	3/20/93	\$125	paid
no habitat stamp	3/18/93	\$125	paid
improperly tagged deer	11/13/93	\$125	dismissed-US attorney
improperly tagged deer	11/13/93	\$125	paid
improperly tagged deer	11/13/93	\$125	paid
improperly tagged deer	11/13/93	\$125	paid

A big thank you to Mike Damico, Special Agent North Platte, for the loan of a chest freezer. The new freezer is set up at Valentine NWR and is already being used for evidence storage.

Four fishermen were cited for violation of the size limit on northern pike at Valentine NWR. There is a 28 inch maximum size limit in effect. Of note is the fact that the fish shrunk upon freezing, from 1 to 1 3/8 inches each. The fish were thawed and remeasured at the request of the violators. Nebraska Game and Parks has some information on shrinkage in walleye but not pike. One of the cases went to court and the defendant found not guilty.

One case of failure to properly tag a deer was dismissed by the US Attorney with the violator required to write a letter saying he wouldn't do it again.

Warning letters were sent to three fishermen for trespass in a natural area at Valentine NWR.

A purse, containing \$300, a check book, and credit cards of a tourist, was stolen from a car parked at the Fort Falls Trail head on July 7. The vehicle was locked but the owner neglected to roll up one window and left the purse in plain sight. The FBI was notified as required.

In July a privately owned car was vandalized while parked in the lot at the canoe launch on Fort Niobrara NWR.

On August 3 the canoe launch area was vandalized. Five barrier posts were broken off. A soda can modified for using crack was found the next day in the parking area above Cornel Dam. A group from the town of Valentine was contacted by Nebraska Game and Parks officers at Smith Falls State Park for rowdy behavior the same night.

On August 31 facilities at Fort Niobrara NWR were vandalized. The leaflet dispenser and sign at the start of the Fort Falls Trail were destroyed. The YCC commemorative sign for the trail was also pulled out and thrown in the river but was recovered undamaged.

On November 11 the canoe launch area was again vandalized, four barrier posts were broken off. During August a canoeing group was caught off refuge by Game and Parks Officers. People in the group had spray painted graffiti on the rock bluffs (not on the refuge) along the river. Other canoers turned them in. This is the first this type of incident has occurred and created quite a stir in the community.

A youth completed 40 hours of work on the refuge the week of August 9. She was sentenced to community service on a minor in possession charge on Ft. Niobrara NWR.

Refuge Officer Lindvall rescued a deer hunter who collapsed while dragging a deer. The 33 year old man drug the deer about 2 miles and over a set of big hills. Lindvall was watching the man through binoculars when the hunter collapsed next to the deer. When reached the man was nearly unconscious and suffering from hypothermia. He was transported to Hackberry Headquarters by truck and from there to the hospital by the ambulance service. A little heat and food and he recovered.

Refuge Officers Lindvall and Kime worked at the wildlife road block at Raton, New Mexico. It was an interesting and learning experience. Where else can you see 800 pounds of frozen rattle snakes and make a Nebraska pheasant case on the same day.

## I. EQUIPMENT AND FACILITIES

### 2. Rehabilitation.

The Complex's service agreement with Overhead Door Co., was canceled due to funding.

Previously, the company conducted semi-annual service and adjustment of 25 overhead doors in 6 maintenance and service buildings in the Complex. Some of the doors are up to 42 years old and require regular and sometimes major attention.

Rehab of ducting in the office at Hackberry Headquarters was completed in an attempt to increase efficiency and comfort. It appears that the re-direction of heat ducts and improved air return have improved the system's function - though time will tell to what extent.

Force Account roof replacement on VLT Quarters 13 garage completed - well tested by heavy rains during the month - appear to have cured all problems.

Contract painting of Valentine NWR Quarters #13 was initiated over a month ago and put on hold due to no paint. Paint was ordered on contract from Sherwin Williams, with 14 day shipment specified in contract; was shipped after 30+ days and NUMEROUS phone calls and run-a-round.

Soffets and fascia on Valentine NWR Quarters #1 were replaced by contractor; wood was so deteriorated that a person could push a finger through the entire face of the structure, with the paint being the strongest part of the structure.

Numerous hours were spent in arranging and coordinating removal of Underground Storage Tanks at Ft. Niobrara and Pony Lake Sub-headquarters, tentatively scheduled for the week of October 11.

Temporary" overflow pipe installed in 1983 in the Clear Lake Dike was removed. The pipe was installed to assist in evacuation of water generated during the renovation of lake systems in the late 1970's and early 80's. Rehab of the Clear Lake water control structure eliminated the need for the pipe. Culvert sections removed will be used in rehab of road crossing in the Pelican Lake outlet ditch.

Contract removal of four Underground Storage Tanks - 2 at Ft. Niobrara NWR and 2 at Valentine NWR/Pony Lake Sub-headquarters - was completed. Fuel is currently stored in portable fuel tank trailers pending resolution of questions permitting installation of Above Ground units.

A source of handicapped/bad weather accessible fuel delivery systems, suitable for use on tanks scheduled for delivery and meeting NFPA and State codes was located; information was referred to RO-Engineering and FWE.

### 3. Major Maintenance

Spring servicing and repair of the 130 windmill and well systems on Valentine NWR was approximately 80% complete by month's end. All work was done force account.

Twenty-six staff days were spent in force account road rehab on a "worst case" basis on Valentine NWR. Worst holes were filled with sand borrowed on site; 58 additional loads of clay were hauled

from the pit at Ft. Niobrara NWR as stabilizing material on loose sand spots. It was noted that clay hauled to Valentine NWR over the past 2 years has been extremely successful in holding sand roads and reducing overtime spent pulling out stuck visitors. Roads and parking areas have been effected severely by high water levels, with areas flooded or damaged which have not been wet for years.

"Worst" spots in the road on Valentine refuge were repaired prior to opening day of grouse season; clay was hauled Force Account from the Ft. Niobrara pit to stabilize loose sand problem areas. Heavy rains over opening weekend necessitated filling of several more spots with sand borrowed on site. Additional clay was hauled as opportune through month's end to help stabilize repaired areas.

Winterization of all 130 Valentine NWR windmills was completed. Repairs accomplished on those possible by force account. Approximately 18 windmills remain that need parts or contractual repair prior to spring use.

Limited additional repairs to Valentine NWR roads were completed prior to deer season.

#### 4. Equipment Utilization and Replacement

Repairs to the John Deere grader used at Ft. Niobrara NWR were completed with a new radiator core, replacement of antifreeze, and replacement of batteries.

A 1972 IHC 5-ton conventional tractor and a 1977 Mack 15-ton cabover were acquired on excess from the U.S. Air Force as potential replacements for the Complex's semi-truck tractors. The IHC is in very good condition with low miles and can be in use with little retrofit. The Mack is in excellent condition except for relatively minor clutch and steering problems and is currently at Sheehan Mack, Rapid City, awaiting repairs pending a final budget.

Two small military utility trailers were obtained from the National Guard to use for hauling fencing supplies, etc.

A 5-KW diesel generator was picked up on military excess through the effort of Fish Springs NWR. The unit - which is in mint condition with approximately 8 hours operating time - will be used to replace the old military unit as emergency power supply for Valentine NWR Quarters #13.

Two small portable generators were obtained from the South Dakota National Guard through the Air Force Re-Utilization Office. One will be used to supply auxiliary/emergency power at Pelican Lake Sub-headquarters, Valentine NWR and one for field maintenance activities at Ft. Niobrara NWR

The following vehicles and equipment need repair and remain parked due to inadequate funds: IHC Dump Truck, Dodge 4x4 pickup, Lowboy semi trailer. The following vehicles and equipment are restricted in use due to deficiencies in condition, not resolvable due to inadequate funds: Massey tractor / backhoe, Semi tractor and trailer.

## 5. Communications System

Two portable and two mobile radios were received from Flint Hills NWR; all can be readily adapted to match configuration of our system.

Communications System: Four base-loaded cab mount radio antennas re-ordered from Motorola were received March 5 and were installed by Western Communications radio technician assisted by complex staff on March 10. Major modifications of headache racks, loading and red light mounts were required to reduce interference and make the systems functional. Two of the radios were also found to be bad; radio power units were switched from the complex's suburban and another 4x4 pickup; in-operable power units are being held by Motorola service center until funding permits repair.

A variety of problems with the new radio system have been apparently isolated by Motorola radio technicians as relating to feedback from whip antennas, poor grounding of antenna mounts, and certain inherent problems in using whip antennas on newer computerized vehicles, especially on low-band frequencies. Four vehicles have never had continuously operational radios since installation. Four base loaded cab-mount antennas were received from Flint Hills NWR but were determined to be inadequate by the Motorola radio technicians. Any further work is dependant on funding.

## 6. Computer Systems

One computer printer was acquired on excess from the Air Force to help alleviate the shortage of equipment in the Complex.

The new Compaq LTE Lite 4/25 Notebook Computer, Series 2810H with 8MB RAM, 120MB Hard Drive was received October 4. This computer was purchased with Regional Fire monies. The monitor, keyboard and mouse have yet to be delivered.

The new Compaq LTE Lite 4/25 Notebook Computer, Series 2810H with 8MB RAM, 120MB Hard Drive was received October 4. This computer was purchased with Regional Fire monies. The monitor, keyboard and mouse have yet to be delivered.

## J. OTHER ITEMS

### 4. Credits

Mark Lindvall compiled sections A, D-4, E-1,2,4,6,8, F-9, I, and J in 2003 from monthly activity reports written in 1993. Mark Lindvall wrote section C, F-7,8,10,13 in 1993. Mel Nenneman

compiled section B, D-5, E-7, F-2, and G in 2003 from monthly activity reports written in 1993.

TOWER WILDLIFE MANAGEMENT AREA  
Brown County, Nebraska

TABLE OF CONTENTS

INTRODUCTION

The Tower Wildlife Management Area is located 13 miles south of Ainsworth, Nebraska in Brown County. The 480 acre property had a conservation easement placed on it on July 15, 1988 under the Consolidated Farm and Rural Development Act and Section 1314 of the Food Security Act. On September 30, 1991 the property was transferred from the Farmers Home Administration to the US Fish and Wildlife Service in fee title. The land is an excellent area for wildlife. About half the area is wetland and most of the remainder sub-irrigated meadow. A small portion is sandhills. Waterfowl, shorebirds, raptors, prairie grouse, and songbirds are all abundant. Surrounding lands are all in pasture. In 1991 a water control structure was installed in a ditch dug by previous owners. This structure increased the amount of wetland on the property substantially by restoring the area to a more natural state. The land on the property and surrounding area is beginning to heal from past abuse. The sandy soils were plowed, pivots installed, and an attempt made to grow corn.

C. LAND ACQUISITION

2. Easements

A recommended easement was submitted for the FmHA Tower inventory property. This property is adjacent to the Tower Wildlife Management Area. The new easement will have about 440 acres and

will be managed with a grazing plan as recommended. The plan includes seeding former cropland to native grasses. The easement will add to the wildlife value of this very productive marsh. FmHA sold the irrigation pivots off our fee title property and their inventory lands which will be under easement. The buyer removed the pivots during the year. This is a good lick and will assure that the sandy soils will not be farmed again.

FmHA tried to sell this property during the year but was unable to do so. Buyers wanted loans to cover the land and cost of starting up the remaining pivots. FmHA was, thankfully, not willing to do this as this was how they got it in the first place.

#### E. ADMINISTRATION

##### 1. Personnel

The Tower Wildlife Management Area is managed from the Fort Niobrara-Valentine NWR Complex located in Valentine, Nebraska.

##### 8. Other

FmHA paid the taxes on the property for 1991. The Fish and Wildlife Service paid \$294 from the Refuge Revenue Sharing Fund starting in FY 92. The county commissioners were not pleased with the amount of the payment. Realty will appraise the value of the land which will hopefully raise the payment.

#### F. HABITAT MANAGEMENT

##### 1. Wetlands

Water levels have been monitored using a gauge on the water control structure. The 1991 Fort Niobrara NWR narrative has a history of water levels. In 1993 dates and water levels were 12 April 8.75; 12 May 8.86; 19 May 8.70; 18 June 8.66; 23 June 8.80; 27 July 9.4; 26 October 9.0. The July reading is a record for the area and reflects the cool wet summer we had in 1993.

##### 5. Grasslands

The grasslands on the area and on the adjacent FmHA inventory land are in poor condition. The area was formerly planted to corn followed by a cover crop of rye. Grasses are coming back in some areas but there is still quite a bit of volunteer rye present.

##### 10. Pest Control

Small areas of both Canada thistle and leafy spurge are present on the property. The spurge is found mainly in an old tree lot and covers a 300 by 150 foot area. APHIS released 58 adults of the insect Oberea erythrocephalia near the steel post on the west end of the tree lot. This is the first release of this spurge eating bug in Nebraska. Several other very small patches are also present. This spurge was mowed one time. This prevented seeding and stressed plants but is very time consuming. One small area was also covered with black plastic. Canada thistle increased this year on the property. Four patches of about 50 by 150 feet were mowed on two occasions. Between the mowings the water level rose in two areas and very few plants came up after the first mowing.

#### H. PUBLIC USE

##### 8. Hunting

Waterfowl, pheasant, grouse, and deer hunting take place on the property but no counts were made of hunters or harvest.

##### 9. Fishing

According to a local source the large wetland on the east end of the property has good numbers of bass, perch, bluegill, and crappie. Some fishing does take place on the property.

#### J. OTHER ITEMS

##### 4. Credits

Refuge Operations Specialist Lindvall wrote all sections. Note that this area was remained some years later as the Yellowthroat WMA.