VALENTINE NATIONAL WILDLIFE REFUGE

Valentine, Nebraska

ANNUAL NARRATIVE REPORT

Calendar Year 1977

NATIONAL WILDLIFE REFUGE SYSTEM
Fish and Wildlife Service
U.S. DEPARTMENT OF THE INTERIOR
Staff photo 1, 11, 5, 7, 2, 6, 3, 9, 4, 8, 10 in relation to list below.

**Personnel**

<table>
<thead>
<tr>
<th></th>
<th>Name</th>
<th>Title/Position</th>
<th>Grade</th>
<th>Series</th>
<th>Status</th>
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<tbody>
<tr>
<td>1</td>
<td>Robert M. Ellis</td>
<td>Refuge Manager</td>
<td>GS-12</td>
<td>PFT</td>
<td>XXX</td>
</tr>
<tr>
<td>2</td>
<td>Leonard L. McDaniell</td>
<td>Asst. Refuge Mgr.</td>
<td>GS-9</td>
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<tr>
<td>3</td>
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<td>Asst. Assistant</td>
<td>GS-7</td>
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<td>4</td>
<td>Larry E. Vaughn</td>
<td>Biological Tech.</td>
<td>GS-7</td>
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<tr>
<td>5</td>
<td>Arthur Aufdengarten</td>
<td>Auto Worker</td>
<td>WG-10</td>
<td>PFT</td>
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<tr>
<td>6</td>
<td>James E. Vaughn</td>
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<tr>
<td>7</td>
<td>David Kime</td>
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<td>Ivan Wiley</td>
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<tr>
<td>9</td>
<td>C. Randall Arment</td>
<td>Refuge Mgr. (trainee)</td>
<td>GS-5</td>
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<td>10</td>
<td>Janise Edwards</td>
<td>Clerk-typist</td>
<td>GS-3</td>
<td>PFT</td>
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<td>11</td>
<td>Mark Kniefel</td>
<td>Laborer</td>
<td>WG-1</td>
<td>Temporary</td>
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</tbody>
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* Primary work site Valentine NWR, secondary Fort Hiebrara NWR.
** Primary work site Fort Hiebrara NWR, secondary Valentine NWR.
**** Primary work site Complex Headquarters.

(continued on next page)
Personnel

(continued from first page)

13. James D. Spence Maintenance Worker WG-8 PFT (Transferred 8-13-77)
15. Galen R. Sherman Laborer WG-1 Temporary (EOD 5-23-77 Terminated 6-21-77)
16. Robert R. Shelbeurn Laborer WG-1 Temporary (EOD 5-23-77 Terminated 6-21-77)
17. Robert C. Stoeger Carpenter Worker WG-7 Temporary (EOD 9-6-77 Terminated 9-14-77)
18. Dean Peed Laborer WG-1 Temporary (EOD 9-6-77 Terminated 9-14-77)

x Primary work site Valentine NWR, secondary Fort Niobrara NWR
xx Primary work site Fort Niobrara NWR, secondary Valentine NWR
xxx Primary work site Complex headquarters

Review and Approvals

Submitted by
Date

Area Office
Date

Refuge

Regional Office
Date

Complex Office

John M. Ellis

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<td>b. Beaver</td>
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I. GENERAL

A. Introduction

Valentine National Wildlife Refuge is part of a refuge complex administered from Fort Niobrara National Wildlife Refuge. The refuge lies in the heart of the Nebraska sandhills; a unique region which contains some of the largest, remaining stands of mid and tall native prairie grassland in North America. Of the 71,516 acres in the refuge, approximately 50,000 acres are grassy, undulating sand dunes; 11,000 acres of shallow lakes and marshes; and 11,000 acres of heavily vegetated meadows. The total acreage provides ideal habitat for migrating and nesting waterfowl, other migratory birds and resident wildlife. The refuge headquarters is located on Hackberry Lake, 17 miles south of Valentine on U.S. Highway 83 and 13 miles west and south on State Spur 16B.

B. Climate & Habitat Conditions

Following three years of drought, 6.03 inches of above average annual precipitation was very much welcomed. Precipitation commenced with a mid-March snow storm and four day electrical power outage. Emergency power was not available in all quarters nor was it adequate to operate the Hackberry Lake sanitary lift station. Therefore, refuge families "doubled-up" in quarters with emergency power and out of necessity, took to the fresh "out-of-doors" when nature called. While the storm seriously hampered refuge operations, serious wildlife losses were not noted.

Mid-March snow storm which resulted in four day electrical power outage. (VLT 3/13/77 REN)
During March, April and May, 13.5 inches of precipitation recharged water levels of refuge lakes and marshes. Adequate moisture throughout the year minimized the occurrence of range fire and provided lush vegetative growth for the production of wildlife - particularly waterfowl and resident upland game birds.

Refuge lakes were essentially frozen by November 21; and waterfowl numbers, except for Canada geese, drastically decreased thereafter.

<table>
<thead>
<tr>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>June</th>
<th>July</th>
<th>Aug</th>
<th>Sept</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
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<tr>
<td>Temp. Max. (°F)</td>
<td>46</td>
<td>68</td>
<td>66</td>
<td>85</td>
<td>82</td>
<td>105</td>
<td>90</td>
<td>97</td>
<td>81</td>
<td>62</td>
<td>60</td>
</tr>
<tr>
<td>Temp. Min. (°F)</td>
<td>-18</td>
<td>3</td>
<td>5</td>
<td>24</td>
<td>41</td>
<td>49</td>
<td>45</td>
<td>40</td>
<td>30</td>
<td>0</td>
<td>-18</td>
</tr>
<tr>
<td>Precip. (inches)</td>
<td>.23</td>
<td>.60</td>
<td>4.16</td>
<td>4.46</td>
<td>4.92</td>
<td>2.22</td>
<td>1.53</td>
<td>4.26</td>
<td>2.12</td>
<td>.82</td>
<td>.75</td>
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C. Land Acquisition

Nothing to report.

D. Systems Status

1. Objectives

The primary objective of Valentine NWR is waterfowl production and maintenance. The criteria for implementing and evaluating program activities of the refuge is compatibility with the primary objective.

Grassland management is essential to waterfowl production. The creation and maintenance of native, tall dense nesting cover is the goal for which we are striving. In recent years, total grassland composition and condition has improved by employing rotational grazing, mowing and rest. However, waterfowl production monitoring procedures have not been implemented to quantitatively measure response to habitat provided.

It is anticipated that BLHP will provide the impetus to accomplish the wetland management goal of improved water quality by elimination of rough fish populations. To date, this goal has not progressed at the rate of grassland management. However, initial results of the combined wetland renovation and grassland management programs indicate the object level to maintain annual waterfowl use days commensurate with the mid 1960's needs reevaluation. With the renovation of three of seven lakes scheduled for renovation, the object level of 6.1 million use days has been exceeded with 8.4 million and 9.75 million use days recorded in 1976 and 1977 respectively.
The refuge lakes are a major source of northern pike eggs for the mid-west. This commitment will continue.

The refuge is also committed to a public use program which primarily consists of hunting and fishing. An advice to improve the quality of refuge hunts coupled with limited resources for maintaining public use facilities has dictated that less facilities will be available to the public. This is an excellent opportunity to simultaneously provide quality facilities and mesh all use of the refuge in line with the primary objective of the refuge.

2. Funding

The following table represents the man-days, operation and maintenance funds and special funds programmed for the Fort Niobrara-Valentine NWR Complex.

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Total Man-Days</th>
<th>Permanent O&amp;M Funds</th>
<th>Special Funds</th>
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<tr>
<td>74</td>
<td>2,076</td>
<td>1,950</td>
<td>$137,936</td>
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<td></td>
<td></td>
<td></td>
<td>$21,095</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Lake renovation equipment for Valentine.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>26,731</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Grasing facilities materials for Valentine.</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>4,351</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Interpretative and Administrative Center at Fort Niobrara.</td>
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<tr>
<td></td>
<td></td>
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<td>$52,177</td>
</tr>
<tr>
<td>75</td>
<td>2,638</td>
<td>2,184</td>
<td>$154,258</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>$10,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Upgrade water and electrical systems on both refuges.</td>
</tr>
<tr>
<td>76</td>
<td>2,638</td>
<td>2,418</td>
<td>$150,347</td>
</tr>
<tr>
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<td></td>
<td></td>
<td>$10,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Upgrade electrical systems on both refuges.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Rehab big game fence at Fort Niobrara.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>30,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Purchase posts for big game fence at Ft. Niobrara.</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>26,000 YCC Camp</td>
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<tr>
<td>77</td>
<td>2,573</td>
<td>3,416</td>
<td>$177,286</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>$48,500 YCC Camp</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>9,800 BLHP Purchase fire equipment, horse, saddle, and horse trailer for Valentine.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3,900 BLHP Insulate ceiling and outside walls of Q-1 &amp; 2 at Fort Niobrara.</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>$62,200</td>
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<tr>
<td>Fiscal Year</td>
<td>Total Permanent O&amp;M Year</td>
<td>Man-Days</td>
<td>Man-Days</td>
</tr>
<tr>
<td>-------------</td>
<td>--------------------------</td>
<td>----------</td>
<td>----------</td>
</tr>
<tr>
<td>78</td>
<td></td>
<td>3,331</td>
<td>3,331</td>
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</table>

- 30,400 BLHP Construct exhibits and signs at Fort Niobrara.
- 8,100 BLHP Conduct an Archeological Survey of Fort Niobrara.
- 67,600 BLHP Repair buildings and 12 miles of road, replace oil storage sheds and radio at Valentine.
- 65,700 BLHP Replace Q-3, water system and electrical service at Fort Niobrara.
- 27,500 BLHP Purchase airboat and backhoe-loader for Valentine.
- 19,000 Renovate Pelican Lake on Valentine.

$266,800
II. CONSTRUCTION AND MAINTENANCE

A. Construction

1. BLHP #RPS-4 FY 77

Five new portable fire units and loading racks were constructed. Also, two older units were rehabilitated to the new specifications formulated by Biological Technician Vaughn. The new design facilitates filling the 110 gallon tanks in 6 minutes and under 200 p.s.i. are capable of pumping 9.8 gals/minute. The updated equipment greatly enhances fire suppression capabilities on and adjacent to the refuge.

Also included in BLHP Project RPS-4 (77), was the acquisition of a quarter horse, 12 foot stock trailer, Circle Y saddle and riding tack.

2. Public Facilities

Parking lots were established on Clear, Duck, and Watts Lakes by YCC to accommodate public use by hunters and fishermen. Sites were selected to provide quality public use opportunities and at the same time minimize facility maintenance.

3. Personnel Quarters

Under contract #14-16-0006 - 3155 Tyndall Plumbing Company corrected the Pony Lake subheadquarters sewer system by installing a new lift station and drain field.

B. Maintenance

1. Personnel Quarters

a. In an effort to reduce energy consumption, roof insulation was blown into Quarters 1, 2, 5, and 13. Fiberglass batting and pour-type insulation were also placed in the roof of Quarters 20.
b. New window sashes and aluminum combination storm windows were installed in Quarters 20. Also, YCC installed a new combination window in Quarters 1.

c. The kitchen in Quarters 20 was given a face-lifting replacing the plywood cabinet doors and drawer fronts with Formica. The floor covering in the kitchen and hall was also replaced.

d. Quarters 5 was painted and the shower walls were replaced.

2. Grounds Maintenance

YCC accomplished a bulk of the activity in this category. In addition to routine ground maintenance and upkeep, several large dead and/or dying trees were removed from Hackberry Lake Headquarters and Pony Lake Sub-headquarters. The asphalt drive at Hackberry Headquarters and road to Pelican Lake Quarters were repaired.

3. Public Use Facilities

Public use trails require continued maintenance to keep them usable by the general public and prevent erosion. This year YCC mulched six miles of public use trails and the regular staff followed up with maintenance of problem areas as they developed. Approximately one mile of trail was graded and mulching was accomplished by winter feeding of cattle.
YCC also made a weekly garbage run of public use areas, repaired garbage collection receptacles and cleaned out 30 autogates.

4. Grazing Facilities

The above normal snow received in March delayed and complicated grazing facility maintenance. Travel was restricted and after the snow receded, 10 percent of the 260 miles of boundary and interior fences were left broken and/or smashed flat. An emergency crew was employed for one month to accomplish necessary repair. By mid-June operations were on schedule and with the assistance of YCC, routine maintenance was continued.

Severe drifting of snow necessitated major fence rehabilitation (VLT 3/13/77 #25 RME)

YCC constructed 3/4 mile of new fence along Highway 83, rehabilitated 16 miles, cleaned up 2½ miles of old fence and removed five unsightly windmill towers.

Minimal fencing material compared to the two previous years were needed to approach our goal of fence standardization. A total of 1,590 - 6 ft. steel, 400 - 6½ ft. steel and 145 - 6½ ft. wooden posts, 4 spools of barbwire and 50 lbs. of staples were used. Replacement of posts in the past three years represents 12.5 percent of total posts on the refuge.
Example of sub-standard fencing being rehabilitated since transfer of maintenance responsibility from the permittee to the Service (VLT 10/31/77 #19 LEV)

Ten new 11 ft. and one 3 ft. Hastings' stock tanks were purchased to replace old deteriorated tanks. Other new or replacement facilities provided to accomplish management objectives were:

New well and tower in G-19.
Replacement of wooden tower with steel in G-8A.
One quarter mile new fence in G-18B and 1/8 mile in G-24D adjacent to Highway 83.
Two hundred yards new fence in G-21B.
Installation of 12 gate fasteners on public use trails.
Repair of refuge entering and leaving signs.

C. Wildfire

The Service has an agreement with the Valentine Rural Fire Protection District in which we assist them in fighting fires off Service lands and they in turn will assist us in controlling wildfires on the refuge. Regardless of the location of fires and resources for suppression, neither agency will seek reimbursement from the other.
We also have an agreement with the U.S. Forest Service; under this agreement the agencies will seek reimbursement for expenses incurred depending on whose land the fire is located.

Refuge personnel provided impromptu orientation for several adjacent landowners on operation of the new portable fire suppression equipment.

Fire hazard potential would have been considerably greater without the continued occurrence of precipitation. Two fires were extinguished on the refuge. In both cases, haystacks had evidently been ignited by lightning and were immediately extinguished by refuge personnel and adjacent landowners.

III. HABITAT MANAGEMENT

A. Croplands

Nothing to report.

Sights like this were numerous throughout the sandhills after the 1973-76 drought passed. To many cows on to little grass is like to many miles on to little gas. (VLT 5/6/76 #5 LEV)
B. Grasslands

Since the establishment of the refuge in 1934, there has been a tremendous change in refuge grassland quality and composition. Prior to federal ownership, vegetation was sparse and sands were actively blowing due to overgrazing and drought conditions of the 1930's.

Initially, grazing was limited to the sandhills and meadows were unused. Mowing of hay meadows commenced in 1940 and by the late 40's more than a dozen areas were being hayed.

In the 50's, waterfowl production studies documented good nesting success. Expansion of the grazing and haying program continued and by the mid 60's, 36 management units included 40 haying sub-units and over 60 grazing sub-units. Total AUM's on the refuge averaged 41,000 a year for the period 1947-56 compared to 49,000 for 1957-66. Some years tallied over 50,000 AUM's.

During the late 1960's, dummy nest studies, initiated by M.C. Hammond and other Fish and Wildlife personnel, resulted in a reevaluation of the grazing program. Evaluation of all grassland units was completed by a Grassland Management Study Team in 1971. The major objective was to provide habitat for the greatest diversity and abundance of wildlife as possible within capabilities of the land. A positive program to accomplish this objective has been implemented.

Total AUM's authorized during the 1970-71 grazing season was 43,350 compared to 16,455 for 1977-78. Due to vegetative stagnation, periodic manipulation is necessary to provide optimum habitat conditions. This year a total of 1,459 acres or 12.6 percent of the subirrigated wetland meadows were subject to manipulation.

1. Habitat Manipulation

Various grassland management practices have been applied to habitat units to promote diversity in wildlife management. Planned management objectives are to provide excellent wildlife nesting, resting and feeding cover. This year's above average precipitation produced outstanding vegetative growth and has left habitat units with good to excellent ground cover conditions.

Management was applied on 66 of the 99 habitat units during the 1976-77 program. Thirty-three units totaling 15,879 acres represent 26.5 percent of manageable habitat, received complete rest.
After rest, area received manipulation by mowing to remove stagnated vegetation. (VLT 11/5/76 #14 LEV)

Once again, a vigorous, more dense habitat is available to wildlife. (VLT 11/3/77 #16 LEV)
Rest rotation

Deferred and rest rotational systems are being used to promote optimum conditions in the uplands. A typical system is set up with four areas A, B, C, and D of approximate size and carrying capacity. Stocking rates for A, B, and C allow AUM's to be utilized within five to six weeks, moving from one to the next in order A, B, C the first year. Unit D is rested. The following year the sequence is B, C, D with A being rested. In essence this method provides continued grassland management without disturbance to wildlife for 10$\frac{1}{2}$ months.

Wildlife cover produced through planned 4 pasture rest rotational grazing system. Total manipulation time was 4$\frac{3}{2}$ months in 4 years. (VLT 10/26/77 #12 LEV)
Planned rotational grazing applied through June and mid-July has set back growth on bullrush, establishing open water for wildfowl. Area left of fenceline received rest. (VLT 10/26/77 #16 LEV)

b. Grazing

A dominance of Kentucky blue grass, red top and sedges cannot provide optimum waterfowl nesting cover even in non-use because of their short monotypic growth form. After one year's rest, severe lodging or matting of these species can occur.

Only one sub-irrigated meadow totaling 316 acres was grazed during late April through mid-May to reduce new growth of undesirable species along with accumulative mulch. Grazing rate was 1 AUM per acre. This method has proven to be a good management practice to reduce competition to the taller more dense native species.

c. Mowing

A management tool beneficial to removal of stagnated vegetation can also be an asset in wildlife food propagation. Mowing is used to promote and continue introduced species such as red clover in selected areas. These species are vital for early spring browse to Canada
geese, deer and other wildlife populations. After mowing in early July, red clover with moisture will continue to grow and supply green browse seedheads which Canada geese, prairie chicken, sharp-tailed grouse and deer will utilize. Migrating Sandhill cranes have been attracted to these closely mowed areas.

Stagnated vegetation removed during mowing operations is winter fed to domestic animals in designated areas to promote weed patches. Heavy concentration of manure and decomposed hay creates a growing environment for annual weeds. These areas are then rotated every two to three years providing shelter, feed and nesting harbors for a variety of wildlife.

A variety of wildlife food is produced by rotational mowing. Lush stands of red clover (Trifolium pratense) provide late summer and fall food supply for birds and mammals. (VLT 8/24/77 #8 LEV)
Other benefits derived from the vegetation of these renovated areas are mulch for roads and supplement to Fort Niobrara's feeding operation.

d. **Burning**

No burning has been planned because of local socio-economic considerations in the event of an uncontrol-able fire.

Following is a sequence of photos showing change in habitat management on unit 18C:

Mowing was applied annually on this area until 1972 when rest was initiated. (VLT 3/23/72 #3 LEV)
This was typical of meadows prior to summer moving. Introduced species of red and white clover were prevalent throughout refuge sub-irrigated meadows. (VLT 7/14/72 #20 LEV)

After two years of rest, mowing was again applied to remove a canopy of mulch. (VLT 12/31/74 #12 LEV)
Results after 4 years of rest rotation.... changing from introduced species to drought hardy native species. Would this be classified as DNC? (VLT 11-3-77 #20 LEV)

2. Calculate tons per acre

Since initiation of extensive grassland practices on sub-irrigated meadows no effort has been taken to measure vegetative growth. In cooperation with the Soil Conservation Service, three random transects were selected for measurement of vegetative tonnage per acre. Transects were 100 feet in length and consisted of five plots, 25 feet apart. Each rectangular plot of 1.92 square feet was clipped to determine pounds of dry weight vegetation per acre.

The following is the past history and results obtained for those areas:

a. Site 1: G-19 was annually mowed until this year and produced a calculated 1.5 tons per acre.

b. Site 2: G-31B received three years fall grazing treatment for the period 1972-1974. The following three years (1975-1977) the unit was rested and resulted in 2.7 tons per acre being produced.

c. Site 3: G-34F received four years rest from 1969 to 1972.
In 1973 cool season species were suppressed by early summer grazing. The unit was rested again in 1974 and 1975, and in 1976 was mowed due to vegetative stagnation. This year the unit was rested and produced 1.2 tons per acre.

3. Cooperative Services

Four farming agreements were negotiated for stacking and baling hay in six habitat units. This amounted to 624 tons for Refuge's share. The permittee was responsible for stacking, baling and delivery of the Refuge's share to Fort Niobrara. In return the cooperator received a 60 percent share.

Cooperator's share in habitat Unit 18B was fed on eroded service trails within the unit to domestic stock. Permittee's share in habitat Units 23B, 24A, 27A and 32B was removed from the refuge alleviating any further use on the unit.

In addition, a mowing permit was issued for 2B to remove accumulated litter from several years rest. The hay was sold to the permittee and moved off the refuge. The price per ton was calculated by using three AUM's per ton, times the AUM rate. A total of 90 tons returned $1,406.70.

A cooperative farming agreement in habitat Unit 16A3 to mow potholes and fringe wetland yielded 145 tons of hay. Permittee's 72.50 tons were fed on blowouts and service trails within the unit. The remaining hay was yarded for future trail and blowout mulching.

One method used by Refuge permittees to better utilize hay that contained 3 years of accumulative mulch.

(VLT 11/15/76 #7 LEV)
4. **Collections**

A total of 22,258.30 AUM's were utilized by 19 permittees in 1976-77 habitat manipulation program which ended April 15, 1977. Total receipts from this use amounted to $113,739.91 at the rate of $5.11 per AUM. Refuge personnel utilized 47,921 AUM's at the same rate and is included in the total. The grazing fee, based on the fall beef cattle and calf prices, increased to $5.21 for the 1977-78 season.

In addition, three unfenced areas lying outside the refuge boundary, totaling 240 acres, were leased for $209.70. Total revenue from the grassland habitat management program amounted to $113,949.64.

C. **Wetlands**

Water levels of all lakes were low due to the past three years of drought. However, above normal spring and summer precipitation recharged water levels in all refuge lakes.

![Dike constructed on the Edmund Ballard Ranch to prevent carp from entering Hackberry Lake from the Gordon Creek Diversion.](VLT 4/10/77 #21 REN)
The major problem of wetland habitat is infestations of rough fish in most of the larger refuge lakes. BLHP is expected to provide the impetus for upgrading the wetland habitat management to a level commensurate with terrestrial habitat. The wetland habitat management program commenced with the renovation of Hackberry Lake in 1975 and was followed by Watts and West Long Lakes in 1976. Rough fish populations are believed to be eliminated and water quality has been restored. Results of the renovation program are documented in the waterfowl section.

D. Forestland

Nothing to report.

E. Other Habitat

Nothing to report.

F. Wilderness and Special Areas

The Wilderness Proposal for Valentine NWR is still in Congressional Committee.

IV. WILDLIFE

A. Endangered and/or Threatened Species

1. Whooping Crane

The first observation of a whooping crane was recorded on the refuge since its establishment in the early 1930’s. On November 4, 9:00 A.M. Dave Kime and Bill Turner observed the adult whooper with approximately 2,000 sandhill cranes on a mowed meadow in G-16A2.

Daylight surveillance was maintained during the period November 4-7. The whooper, along with a peak population of 4,500 sandhill cranes, roosted on Willow Lake and spent the daylight hours feeding and resting on a mowed meadow in Sawyer Valley (G-15C). All cranes left en masse at 7:30 A.M. on November 7, only a few hours before the first winter storm.
Whooping crane and Sandhill cranes on a mowed meadow in G-16A2. (VLT 11/4/77 #19 LEV)

Whooping crane and Sandhill cranes enroute from feeding area to Willow Lake. (VLT 11/4/77 #20 LEV)
2. **Sacramento Perch**

   In 1976, the Sacramento perch was reported as probably lost to the refuge. However, a single specimen, approximately three pounds, was reported taken by a fisherman from Clear Lake.

B. **Migratory Birds**

1. **Waterfowl**

Habitat conditions were exceptionally good this year. A minimum of 9.7 million waterfowl use days were recorded, 3 million over the objective level. Three renovated lakes held nearly 37 percent of the fall waterfowl peak population. Pelican, Whitewater, Dewey and Clear Lakes are being scheduled for renovation to realize greater refuge waterfowl use potential.

a. **Ducks**

Breeding pair counts were completed during May 16-27 on the lakes considered priority one in the Wildlife Inventory Plan. Total pairs recorded on the eleven lakes were 2,396. Blue-winged teal comprised 56 percent of the sample followed by mallard 14 percent, redhead 9 percent, gadwall 8 percent, shoveler 7 percent, pintail 4 percent and ruddy ducks 3 percent. Approximately 20 percent (1,424) of the total pairs observed on the Marsh Lakes were redheads. Also, this was the first year that canvasback pairs were not recorded on the refuge.

Of particular interest is duck use response to the renovated lakes. Partial renovation of Hackberry Lake was accomplished in the mid 1960's but rough fish repopulated the lake and from 1970 to 1974 duck use remained extremely low - less than 5,000 annual use days. During the period of 1969-1975 only one duck brood was recorded being observed. Complete renovation was accomplished in 1975 and in 1976, 327 pairs were recorded. Similar results were noted this year with 327 total pairs and over 1.6 million duck use days being recorded. It is evident that the lake renovation program is complementing waterfowl populations and not merely concentrating and/or moving local waterfowl from one lake to another.

Duck production calculated by the Brood/Pair Index System was 9,706 ducklings - a substantial increase over the past three years and the third highest in the last 10 years. Of the total 9.7 million refuge waterfowl use days, ducks comprise nearly 7.9 million.
b. **Geese**

Extremely good Canada goose production was noted adjacent to the refuge - particularly on Red Deer Lake. Land management practices were conducive to providing a quantity of introduced cool season grasses (blue grass and red top) on the meadow surrounding the lake. This type of vegetation is in short supply on the refuge, and therefore, the corresponding increase of goose use on adjacent lands.

Approximately, 250 Canada geese were produced on and adjacent to the refuge. Banding attempts again this year were not very successful. However, with the assistance of YCC and LaCreek NWR personnel and an airboat, 11 goslings were banded.

The fall migratory peak was 500 geese. By the end of December, nearly one month after freeze-up, 250 Canada geese remained in the area resting on the frozen lakes and feeding on the pivot irrigation fields southeast of the refuge.

Ninety white-fronted geese were observed on Willow Lake on November 7 resting with sandhill cranes and the single whooper.

c. **Trumpeter Swan**

Trumpeter swan production was a complete bust. The trumpeter swan pair nesting on "21" Lake was flooded out due to the rise in water level after nesting was underway. On December 22, a trumpeter was still on the refuge. Later reports indicated the bird was wintering on the Snake River below Merritt Reservoir.

d. **Coot**

Coot use on the renovated lakes was particularly noticeable during late summer and early fall. In September, 22,500 coots were estimated on the refuge. Seventy-five percent were observed on Hackberry, Watts and West Long Lakes.

2. **Marsh and Water Birds**

Sandhill cranes accompanied by an adult whooping crane were observed on Willow Lake, G-16A2 and G-15C. Sandhill cranes peaked at 4,500 birds on the refuge and several smaller flocks were observed on meadows adjacent to the refuge.

A snowy egret was observed on Dewey Lake on June 10 and during
the period June 20 to August 10 two were present. No production was noted.

A white-faced ibis was observed on North Marsh during the first of June. This is the second consecutive year the species has been observed on the refuge.

3. **Shorebirds, Gulls, Terns, and Allied Species**

No observations out of the ordinary were noted.

4. **Raptors**

A barn owl was found dead in G-16A2 this fall. This species has only been verified by one or two previous records on the refuge. Also, an observation and photograph was obtained of a snowy owl.

Observation records of snowy owls are rare on Valentine NWR. (VLT 1/24/77 #18 LEV)

5. **Other Migratory Birds**

Numerous sightings of snow bunting were made on and adjacent to the refuge in December. An Ecology Class from Wayne State College also reported observing a vesry and indigo bunting — two species not previously recorded on the refuge’s Bird List.
C. Mammals and Non-Migratory Birds and Others

1. Big Game Animals
   a. Deer
      A total of 1,477 deer were observed during the January aerial census. The total included 66 mule and 81 white-tailed deer. This is somewhat less than observed the past two years, however, the deer herd is in good physical condition.

      Limited pre-hunting observations indicated the doe-fawn ratio was considerably greater in the white-tailed deer. Documented hunter harvest of antlerless mule deer revealed 46 percent were 5-9 years of age. Coyote predation is suspected to be a significant factor in the mule deer population. A strong 3 year class was evident in the white-tailed harvest. Of particular interest was an antlered 5 year old mule deer doe taken by a hunter.

   b. Antelope
      Only occasional sightings of antelope are made on the refuge and are normally in conjunction with the antelope hunting season.

2. Other Mammals
   a. Muskrat
      Low water conditions the last few years have not been conducive to muskrat populations. Increased muskrat activity has been noted this year. However, no surveys and/or effort was made to document population trends.

   b. Beaver
      There is not a significant beaver population on the refuge. Their activity and/or presence is evident in Dewey, Pelican, Hackberry, Dad's and Clear Lakes.

3. Predators
   Coyotes are the most commonly observed predator on the refuge. In cooperation with the Denver Wildlife Research Center, the scent post survey was again conducted for inclusion in the "Indices of Predator Abundance in the Western United States." At this time, the 1977 information is not available to compare with the static population documented in 1975 and 1976.
Considerable interest in coyote hunting was generated with prime pelts selling for $60 to $65 on the local market. This year nearly 100 coyotes were reported harvested in the vicinity of the refuge. In spite of this, coyotes are still commonly observed. But, we have noted a general increase in wariness as their coats become prime.

Significant populations of badger, mink and skunk are not evident. However, their presence is occasionally noted by tracks, digging or feeding activity and smell. Raccoons are quite common and several daylight observations were recorded on Dewey and Clear Lakes shortly after freeze-up.

4. Resident Birds
   a. Ring-necked Pheasant

   Valentine NWR is not considered within the primary pheasant range in Nebraska. There are no croplands normally considered a prerequisite for pheasant habitat. However, there is an abundance of marsh and other tall, dense vegetative growth conducive to supporting a high pheasant population. This year, in spite of a severe spring snow storm, one of the higher breeding population estimates, based on crow counts was recorded.

   Territorial strife between two male sharptails. (VLT 4/24/77 #31 LEV)
b. Sharp-tailed Grouse

All sharp-tailed booming grounds were counted on the State Study Block. This area is 25.3 sections in size and is the basis for estimated refuge breeding population. This year's estimated breeding population of 1,445 was essentially unchanged from 1976.

c. Northern Greater Prairie Chicken

Prairie chickens are generally found on the refuge east of U.S. Highway 83 with several recent observations on the west side. No major effort has been made to specifically increase the population. However, hunting of prairie grouse is closed on the refuge east of U.S. Highway 83 and elevated winter feeding platforms have been maintained the last 15 years. All prairie chickens are counted on known booming grounds. The following is a summary of the males counted on the known grounds for the period 1972 to 1977:

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
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<tbody>
<tr>
<td></td>
<td>56</td>
<td>64</td>
<td>47</td>
<td>37</td>
<td>34</td>
<td>69</td>
</tr>
</tbody>
</table>

Excessive moisture served to delenate territories of male prairie chickens on this booming ground. (VLT 4/24/77 #19 LEV)
5. **Fish**

Valentine NWR remained the most important source of northern pike eggs in the midwest. Nebraska Game and Parks Commission and Service personnel cooperated in the trapping effort. Totally, 3,829 northerns were trapped from three refuge lakes - Pelican 3,269, Dewey 367 and Clear 193. Approximately, 28 million eggs were taken for incubation at Gavin's Point NFH and North Platte State Fish Hatchery. The brood stock were redistributed by returning 2,082 back into Dewey Lake and 1,709 into Clear Lake.

The following other fish were removed for use at Gavin's Point NFH and Valentine SFH aquarium displays except for the yellow perch which were used as brood stock.

- 20 bluegill from Pelican Lake to Gavin's Point NFH.
- 100 yellow perch from Pelican Lake to Gavin's Point NFH.
- 10 bluegill from Dewey Lake to Valentine SFH.
- 10 bullheads from Dewey Lake to Valentine SFH.
- 15 black crappie from Dewey Lake to Gavin's Point NFH.
- 15 black crappie from Dewey Lake to Valentine SFH.
- 3 largemouth bass from Dewey Lake to Valentine SFH.
- 6 walleye from Dewey Lake to Valentine SFH.
- 500 yellow perch from Dewey Lake to Valentine SFH.
- 200 yellow perch from Dewey Lake to Gavin's Point NFH.

Fish restocking by Gavin's Point National Fish Hatchery personnel. (VLT 6/22/77 #34 LEV)
Electrofishing of Hackberry Lake indicated the fish stocked in 1976 had evidently winterkilled due to the low water level. Water levels were restored by early spring moisture and the renovated lakes were stocked as indicated:

<table>
<thead>
<tr>
<th>Fish Type</th>
<th>Hackberry</th>
<th>Watts</th>
<th>West Long</th>
</tr>
</thead>
<tbody>
<tr>
<td>Largemouth Bass</td>
<td>60,000</td>
<td>15,000</td>
<td>10,000</td>
</tr>
<tr>
<td>(fingerlings)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bluegill</td>
<td>120,000</td>
<td>30,000</td>
<td>25,000</td>
</tr>
<tr>
<td>Yellow perch</td>
<td>60,000</td>
<td>20,000</td>
<td>15,000</td>
</tr>
<tr>
<td>(fingerlings)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fathead minnows</td>
<td>20 gallons</td>
<td>10</td>
<td>5 gallons</td>
</tr>
</tbody>
</table>

Duck Lake, which winterkilled in 1976-77, was restocked with 9,900 fingerling largemouth bass and 24,750 fingerling bluegill.

6. Reptiles and Amphibians

An Ecology Class from Wayne State College collected the following species: painted water turtle, Blanding's turtle, ornate box turtle, western hognose snake, blue racer snake, plains garter snake, red-sided garter snake and milk snake. Bull snakes and garter snakes were abundant this year.

V. INTERPRETATION AND RECREATION

A. Information and Interpretation

The refuge's information and interpretation program is long overdue for an overhauling. Present facilities consists of four information boxes on U.S. Highway 83, 16B Spur and Hackberry Headquarters. Public use and other refuge information are maintained at these locations. However, the point of how and why the refuge exists is not getting across to the general public.

Refuge personnel presented six programs during National Wildlife Week and also conducted several environmental education and refuge tours during the year.

B. Recreation

1. Fishing

Fishing is the highest public use attraction on the refuge. A drastic reduction in public use has been commensurate with the decline of the sports fishery and increase of rough fish populations. Approximately, 5,000 visits were recorded on the four lakes open to public fishing.
Clear and Dewey Lakes provided good northern fishing in the spring. Good catches of large perch were also taken from Dewey this fall prior to freeze-up. Of particular interest was a seven pound walleye taken in Dewey through the ice. Pelican provided infrequent angler success of perch, big bluegills and northern pike. Duck Lake evidently winterkilled due to extremely low water levels.

2. **Hunting**

Continued effort was put forth to improve the quality, not quantity, of refuge hunting opportunities. Accommodations and hunter participation, except in the rifle deer season, provided a quality experience and/or discouraged the numbers of vehicle hunters. A total of 850 hunter visits were recorded.

**a. Deer**

This year a total of 170 rifle deer hunters harvested 29 white-tails and 20 mule deer during the nine-day season. A majority of the hunters were reluctant to get out of their vehicles to hunt. Most large white-tailed bucks were still around after the season terminated.

Deer hunting is also a family affair. (VLT 11/14/76 #1 LEV)
b. **Ring-necked Pheasant**

The pheasant season opened on November 5 and continued through December 31 with a daily bag of two birds. The above normal precipitation and resultant vegetative growth made the hunting opportunity more challenging than normal. Hunting pressure was extremely light for the amount of birds available. The more successful hunters were those that got out and worked or used dogs to locate their birds.

c. **Prairie Grouse**

Grouse hunting was opened on the west side of U.S. Highway 83 from September 17 through October 16. A two bird daily bag was authorized. During the opening week, hunter success averaged one bird per hunter. A total of 565 visits were recorded with hunter success dropping off after the opening week.

Successful and satisfied hunters during the Refuge's first waterfowl hunting season. (VLT 10/22/77 #5 LEV)
d. Waterfowl

This was the first year waterfowl hunting was authorized on the refuge. Therefore, a genuine effort was made to provide a quality hunting opportunity. Duck, Rice and Watts Lakes were opened for the taking of ducks and coots. Hunting pressure was considerably lighter than anticipated with only nine non-Service waterfowl hunters participating the opening weekend. Total visits were 47 with the more successful hunters using decoys to lure their birds within range. This section of Nebraska is not open to the taking of dark geese.

C. Enforcement

A law enforcement and firearms qualification session was held at Fort Niobrara NWR in September. Special Agents Ed Bosak, Bill Skar, Joel Scrafford; personnel from Crescent Lake NWR, Hastings Wetland Management District and Pierre Area Office also participated.

In March, Larry Vaughn completed two week's training at the Federal Law Enforcement Training Center in Glynco, Georgia.

Law enforcement activities are primarily related to the public use program. A majority of enforcement problems stem from the reluctance of individuals to become familiar or acknowledge available public use information. The following is a summary of violations on Valentine NWR processed in State court.

<table>
<thead>
<tr>
<th>Name</th>
<th>Date</th>
<th>Violation</th>
<th>Fine</th>
<th>Arresting Officer</th>
</tr>
</thead>
<tbody>
<tr>
<td>James D. Leonard</td>
<td>1/1</td>
<td>Overnight camping</td>
<td>$18.00</td>
<td>Kime</td>
</tr>
<tr>
<td>Joseph D. Belmont</td>
<td>1/2</td>
<td>No fishing permit</td>
<td>28.00</td>
<td>Zimmerman</td>
</tr>
<tr>
<td>William D. Turley</td>
<td>1/2</td>
<td>No fishing permit</td>
<td>28.00</td>
<td>Zimmerman</td>
</tr>
<tr>
<td>Kermit W. Wild</td>
<td>1/2</td>
<td>Driving on ice</td>
<td>18.00</td>
<td>Kime</td>
</tr>
<tr>
<td>Ernest G. Chase</td>
<td>2/16</td>
<td>Driving in closed area</td>
<td>18.00</td>
<td>Kime</td>
</tr>
<tr>
<td>Ronald R. Hughes</td>
<td>4/9</td>
<td>No fishing permit</td>
<td>28.00</td>
<td>Zimmerman</td>
</tr>
<tr>
<td>Melvin L. Homan</td>
<td>4/9</td>
<td>Insufficient life jackets</td>
<td>18.00</td>
<td>Zimmerman</td>
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<tr>
<td>Bill L. Paro</td>
<td>4/29</td>
<td>Improper boat registration</td>
<td>18.00</td>
<td>Zimmerman</td>
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<tr>
<td>Alfred W. White</td>
<td>4/29</td>
<td>Overbag of northern pike</td>
<td>18.00</td>
<td>Zimmerman</td>
</tr>
<tr>
<td>Edgar D. Golden</td>
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<td>Insufficient life jackets</td>
<td>18.00</td>
<td>Zimmerman</td>
</tr>
<tr>
<td>Nickolas K. Werner</td>
<td>4/30</td>
<td>Insufficient life jackets</td>
<td>18.00</td>
<td>Henderson</td>
</tr>
<tr>
<td>James B. Fassnacht</td>
<td>5/1</td>
<td>No fishing permit</td>
<td>28.00</td>
<td>Henderson</td>
</tr>
</tbody>
</table>
### Name | Date | Violation | Fine | Arresting Officer
--- | --- | --- | --- | ---
Mark Fisher | 9/25 | Driving in closed area | $18.00 | Vaughn
James D. Wackler | 10/24 | Hunting ducks in closed area | 28.00 | Aufdengarten
Floyd Parks | 10/24 | Hunting ducks in closed area | 28.00 | Aufdengarten
Tony J. Wals | 11/12 | No habitat stamp | 28.00 | McDaniel
Dale R. Loberg | 11/12 | No habitat stamp | 28.00 | McDaniel
Cory L. Kruise | 11/12 | No habitat stamp | 28.00 | McDaniel
Randy L. Upton | 11/12 | No habitat stamp | 28.00 | McDaniel
Kim D. Upton | 11/12 | No habitat stamp | 28.00 | McDaniel
Fredrick C. Schweer | 11/12 | Hunting deer in closed area | 33.00 | McDaniel
Darrel R. Norman | 11/13 | Hunting deer in closed area | 58.00 | McDaniel & Kime
John L. Peisier | 11/14 | Driving in closed area | 28.00 | Kime

#### VI. OTHER ITEMS

##### A. Field Investigations

The Colorado Division of Wildlife, Wildlife Research Center, Ft. Collins, initiated a study comparing the morphology of blue-winged and cinnamon teal. The study is an attempt to determine a field technique for distinguishing the two species during the pre-season banding period. In cooperation with the study 200 blue-winged teal eggs and 10 blue-wing hens were collected.

##### B. Cooperative Programs

The Fort Niobrara Refuge was the administrative headquarters for a 30 person non-residential coeducational YCC camp. The enrollees started the eight week camp on June 13 and finished on August 5. In 1976, we had a 20 person camp and were not able to get 10 girls interested in the program. In 1977, we had 15 boys and 22 girls apply. When all the dust cleared, we had 14 boys and 16 girls enrolled. All the original enrollees were able to complete the camp.

The YCC staff was recruited from the Valentine, Cody-Kilgore, and Todd County School systems. The YCC staff consisted of Mr. Boyd D. Powell as Camp Director, Mr. Kenneth E. Cox as Environmental Educational Coordinator, Mrs. Lynda A. Bennett, Mr. Walter Cady, Mr. Michael L. Cox and Ms. Rhonda Rindahl as group leaders.
Refuge personnel assisted Colorado Division of Wildlife Research personnel collect blue-winged teal eggs. (VLT 6/10/77 #23 LEV)

Preparing blue-winged teal eggs for transporting to Colorado. (VLT 6/10/77 #26 LEV)
The enrollees worked on projects on both Fort Niobrara and Valentine Refuges. These projects included; litter control on public use areas, wilderness area clean-up, banding Canada geese, repainting horse corral and barn, staining the big game corrals, developing a refuge herbarium, constructing an ecology park in City of Valentine, removal of wind damaged trees, livestock fence maintenance, profile maps of Whitewater and Pelican Lakes, developed parking lots on waterfowl hunting areas, conducted a lead shot survey on Duck Lake and set up a booth at the Cherry County Fair.

YCC Energy conserves fossil fuels. (VLT 7/14/77 #1 BDP)

Weather Station

Valentine NWR has served as an official weather station since June 1948.

C. Items of Interest

Mr. Bob Nagel, Assistant Refuge Manager of the Fort Niobrara-Valentine NWR Complex received his 10 year service pin in March. Bob has worked at Spearfish Fish Hatchery, Tamerac NWR, Lake Andes NWR and Muscatatuck NWR.

On May 22, Bob Nagel and family transferred to the Fort Peck unit of the Charles M. Russell NWR. Bob will be the Assistant Refuge Manager in charge of the Fort Peck unit.

Mr. Jim Spence, maintenance worker at the Fort Niobrara NWR was presented a $200 award for outstanding performance on a special
electrical rehabilitation project.

On 8-13-77, Jim Spence and family transferred to the Fort Peck unit of the Charles M. Russell NWR. Jim was selected to fill the position of range technician at Fort Peck.

Mr. C. Randall Arment was selected to fill the Refuge Manager (trainee) position in the Complex. He entered on duty on 8-14-77. His previous assignment was with the National Park Service at Independence National Historical Park, Philadelphia, Pennsylvania.

On November 30, Mr. Jim Vaughn, Maintenance Worker at Fort Niobrara NWR for the past 17 years, 9 months and 22 days, was required to retire from the Service. Jim had reached the young age of 70. Jim and Ruby moved from their refuge home to a new house in Valentine where he is enjoying the well earned vacation. During his last year with the Service, Jim received a $290 Special Achievement Award for his efforts on a big game fence renovation project. Jim and Ruby were honored at a special dinner at which he was presented a Certificate-of-Service, photo album full of history and a pair of longhorn steer horns.

Larry Vaughn, Biological Technician completed a course of instruction in supervision and group performance at the Denver Regional Training Center on November 7-11. He also completed the Law Enforcement Training Course at Glynco, Georgia on March 20 to April 6.

Ivan Wiley, Laborer, was promoted to Maintenance Worker on 11-20-77. Ivan has worked for the Service for several years as a biological aid and a laborer.

Janice L. Edwards, Clerk-typist completed a course of instruction in Effective English on September 19-21 at the Denver Regional Training Center.

Robert M. Ellis, Refuge Manager completed the 120 hour reserve officer's training program conducted by the Nebraska Law Enforcement Training Center at Grand Island. The Cherry County Sheriff's Department sponsored the program in Valentine, Nebraska.

On September 27, Special Agents Bosak, Scar and Sarafford conducted a law enforcement work shop at Fort Niobrara. Included in the program was a PP2 firearms course. The following personnel successfully completed this program: Arment, Aufdengarten, Brooks, Ellis, Kime, McDaniel, Vaughn and Wiley.

Personnel assigned to the Complex attended the training-testing pesticide meeting for commercial applicators at Ainsworth, Nebraska. In addition to a general standards test, tests were taken on categories
like Ag. Plants, Ag. Animal, Aquatic and Right-of-Way.

Leonard L. McDaniel, Wildlife Biologist in the Pierre Area Office was selected to fill the Assistant Refuge Manager position. Len reported for duty on 10-10-77.

D. Safety

1. Accidents

On October 12, 1977, a horse fell with Robert Ellis, Refuge Manager while ear tagging elk. Ellis was attempting to rope an elk when his horse hit some gopher holes, fell and rolled completely over him. An ambulance was called and he was admitted to the hospital. No bones were broken but the bruises took a long time to heal.

On September 14, 1977, during the longhorn round-up, a steer broke away from the herd and while chasing it on horseback, James Vaughn, Maintenance Worker wrenched his back.

On May 12, 1977, Dave Kime, Maintenance Worker had a pickup stuck in the mud. When he jacked up the truck to put dry material under the wheels, the jack handle slipped out of his hands and struck him in the eye. Eight stitches were required to close the cut.

Another injury occurred to Dave Kime, Maintenance Worker on October 13th. While driving on a sandhills trail with his hand on top of the steering wheel, he hit a sharp bump. His elbow struck the bottom of the steering wheel causing a severe bruise to the elbow.

On August 15th while backing up a truck, Ivan Wiley, Laborer was struck in the eye by a foreign object. No lost time, but medical attention was required.

Another accident was reported by Ivan Wiley, Maintenance Worker on November 11th at the close of the work day. Ivan was in the crew room and reached down to pick up his dinner bucket and pulled a muscle in his leg. Ivan was off work for two days with this freak accident.

Accidents in YCC Camp.

Diedre Todd, YCC enrollee was participating in a spike camp July 13, 14 and 15. On the night of July 13 while swimming and playing a water game, she was dumped over backwards and lost
her sense of position in the water. She took in a little water
and immediately over-reacted to the situation causing hyper
ventilation of the respiratory system and then shock followed
the incident. The location of the accident was at Dewey Lake.

On August 1, 1977 Allison Klingbeil, YCC enrollee, got paint
in her eye while painting the corrals at Fort Niobrara. The
paint contained a wood preservative and the eye required
medical attention.

James Harris, YCC enrollee, was carrying a creosote post on
his shoulder on July 6th. The post rubbed against his bare
neck causing a caustic burn. Medical attention was required.

Shawn Gotthard, YCC enrollee, was tamping a fence post with the
handle of his shovel. He was tamping with his left hand, with
his right hand resting on top of the post. The heel of the
shovel struck his right arm causing laceration to the arm. He
was taken to the doctor, treated and returned to work.

On June 16th, while on a spike camp at Dewey Lake, Bill
Assarsson, YCC enrollee contacted poison ivy. The exact time
this was contacted is not known, but several trips to the doctor
was made before the allergy was cleared up.

On August 5th, Walter Cady, YCC group leader, dropped a ten
gallon water cooler on his foot while loading it into a pickup.
X-rays revealed no broken bones but was a painful bruise.

2. Meetings

| January | Chairperson: Arthur Aufdengarten |
| Subject: Safety in operation of heavy equipment. |
| Film: "It Always Happens To the Other Fellow." It was an exception-ally good film put out by John Deere Tractor Co. |

| February | Chairperson: Forrest W. Brooks |
| Subject: Safety in sports. |
| Discussion: Safety in sports and physical fitness, also stalled vehicles in a blizzard. |

| March | Chairperson: Robert M. Ellis |
| Subject: Severe storms |
| Discussion: Clair Mancuso was guest speaker and dealt with storms and other violent acts of nature. |
April
Chairperson: Bruce Haines
Subject: Boating safety
Discussion: All aspects of water safety

May
Chairperson: Jim Vaughn
Subject: Hazards in repairing grazing facilities
Film: "Natures Perils"
Discussion: Fencing tools and safety clothing

June
Chairperson: James Spence
Subject: Electrical safety
Film: "Hot Cords Can Burn" and "Fire, Not In My House"
Discussion: Lightning and thunderstorms; accident reports

July
Chairperson: Larry Vaughn
Subject: Shop safety
Film: "Safety in the Shop - Power Tools"
Discussion: Eye safety and proper care & use of tools

August
Chairperson: Ivan Wiley
Subject: Law enforcement
Discussion: Mick Grey was guest speaker and dealt with law enforcement

September
Chairperson: David Kime
Subject: Range fires
Film: "Say Goodby"
Discussion: Fires and fireman safety

October
Chairperson: Janice Edwards
Subject: House and yard safety
Film: "Safety Everywhere, All The Time"
Discussion: Safety precaution while chasing wild animals on horseback

November
Chairperson: Leonard McDaniel
Subject: Defensive driving
Film: "Drive and Survive"
Discussion: Defensive driving
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<thead>
<tr>
<th>December</th>
<th>Chairperson:</th>
<th>Arthur Aufdengarten</th>
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<tbody>
<tr>
<td>Subject:</td>
<td>Winter sports</td>
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<tr>
<td>Film:</td>
<td>&quot;Shelter Construction in Winter&quot; and &quot;Survival Kit&quot;</td>
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<tr>
<td>Discussion:</td>
<td>Winter survival and law enforcement training</td>
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This report was written and edited by Ellis, McDaniel, Brooks, Vaughn and Arment. The entire report was typed by Edwards.