

LAKE ANDES WETLAND MANAGEMENT DISTRICT

Lake Andes, South Dakota

ANNUAL NARRATIVE REPORT

Calendar Year 1992

**LAKE ANDES WETLAND MANAGEMENT DISTRICT**

**Lake Andes, South Dakota**

**ANNUAL NARRATIVE REPORT**

**Calendar Year 1992**

**U.S. Department of the Interior  
Fish and Wildlife Service  
National Wildlife Refuge System**

REVIEW AND APPROVALS

LAKE ANDES WETLAND MANAGEMENT DISTRICT

LAKE ANDES, SOUTH DAKOTA

ANNUAL NARRATIVE REPORT

Calendar Year 1992

			
Refuge Manager	Date	Associate Manager Review	Date

	
Regional Office Approval	Date

## INTRODUCTION

The Lake Andes WMD is located in the extreme southwestern portion of the Prairie Pothole Region. The southern location results in the area having milder winters than the remainder of the eastern Dakotas and Minnesota; however, summers are longer and warmer. Annual evaporation can amount to 36 inches, while the rainfall varies from 17 inches to 24 inches across the District. These conditions result in more years of marginal and poor wetland conditions in comparison to areas found farther north and east.

Three vegetative zones are found across the District. The true or tall grass prairie zone encompasses the four eastern counties with the dominant native grasses being big bluestem, Indian grass, switchgrass, and other warm-season grasses. Very little native prairie remains in this area since it contains highly fertile soils and adequate rainfall conducive to maximized agri-business. Land use is extremely heavy and most private wetlands have been drained.

The tall grass/mixed prairie transition zone covers the central portion of the District. The dominant native grasses in this area are western wheatgrass, big bluestem, and porcupine grass. Lower annual precipitation limits row crops to some extent and land use is more diversified between small grains, row crops, hayland, and pasture. Shelterbelts, farmsteads, and feedlot areas are also more common. Wetlands and associated vegetative cover on private land supports excellent populations of wildlife. The vast majority of the District's WPAs are located within this zone. Waterfowl and other wildlife populations are highest within this zone as compared to other zones.

The western portion of the District falls within the mixed grass prairie zone, with dominant native grasses being western wheatgrass, needle and thread, and blue grama. Annual rainfall averages 17 inches; therefore, small grain crops are predominant on agricultural lands. Native prairie, pastures, and hayland comprise a larger percentage of the land use than in the two zones to the east. Even though land use is less intense, the wetlands are less numerous and upland vegetation is shorter due to the drier climate. Wildlife populations reach good numbers in scattered areas, but overall this area is less productive than the transition zone.

## INTRODUCTION

### TABLE OF CONTENTS

### Page

#### A. HIGHLIGHTS. . . . . 1

#### B. CLIMATIC CONDITIONS. . . . . 1

#### C. LAND ACQUISITION

1. Fee Title . . . . .	1
2. Easements . . . . .	2
3. Other . . . . .	4

#### D. PLANNING

1. Master Plan . . . . .	Nothing to Report
2. Management Plan . . . . .	Nothing to Report
3. Public Participation. . . . .	Nothing to Report
4. Compliance with Environmental and Cultural Resource Mandates. . . . .	Nothing to Report
5. Research and Investigations . . . . .	Nothing to Report
6. Other . . . . .	Nothing to Report

#### E. ADMINISTRATION

1. Personnel . . . . .	11
2. Youth Programs. . . . .	Nothing to Report
3. Other Manpower Programs . . . . .	Nothing to Report
4. Volunteer Program . . . . .	Nothing to Report
5. Funding . . . . .	Nothing to Report
6. Safety. . . . .	Nothing to Report
7. Technical Assistance. . . . .	Nothing to Report
8. Other . . . . .	Nothing to Report

#### F. HABITAT MANAGEMENT

1. General . . . . .	13
2. Wetlands. . . . .	13
3. Forests . . . . .	Nothing to Report
4. Croplands . . . . .	14
5. Grasslands. . . . .	15
6. Other Habitats. . . . .	Nothing to Report
7. Grazing . . . . .	15
8. Haying. . . . .	17
9. Fire Management . . . . .	17
10. Pest Control. . . . .	17
11. Water Rights. . . . .	Nothing to Report
12. Wilderness and Special Areas. . . . .	Nothing to Report
13. WPA Easement Monitoring	
A. WPA Easement Monitoring . . . . .	21
B. Grassland Easements . . . . .	22
C. FmHA Conservation Easements . . . . .	22

14.	Private Lands Initiatives	
	A. Wetland Restorations . . . . .	23
	B. Habitat Improvement Projects . . . . .	29
	C. Farm Bill Responsibilities. . . . .	29

#### G. WILDLIFE

1.	Wildlife Diversity. . . . .	31
2.	Endangered and/or Threatened Species. . . . .	31
3.	Waterfowl . . . . .	33
4.	Marsh and Water Birds . . . . .	34
5.	Shorebirds, Gulls, Terns, and Allied Species. . . . .	34
6.	Raptors . . . . .	34
7.	Other Migratory Birds . . . . .	34
8.	Game Mammals. . . . .	35
9.	Marine Mammals. . . . .	Nothing to Report
10.	Other Resident Wildlife . . . . .	35
11.	Fisheries Resources . . . . .	35
12.	Wildlife Propagation and Stocking . . . . .	Nothing to Report
13.	Surplus Animal Disposal . . . . .	Nothing to Report
14.	Scientific Collections. . . . .	Nothing to Report
15.	Animal Control. . . . .	Nothing to Report
16.	Marking and Banding . . . . .	Nothing to Report
17.	Disease Prevention and Control. . . . .	36

#### H. PUBLIC USE

1.	General . . . . .	36
2.	Outdoor Classrooms - Students . . . . .	Nothing to Report
3.	Outdoor Classrooms - Teachers . . . . .	Nothing to Report
4.	Interpretive Foot Trails. . . . .	Nothing to Report
5.	Interpretive Tour Routes. . . . .	Nothing to Report
6.	Interpretive Exhibits/Demonstrations. . . . .	36
7.	Other Interpretive Programs . . . . .	Nothing to Report
8.	Hunting . . . . .	36
9.	Fishing . . . . .	Nothing to Report
10.	Trapping. . . . .	38
11.	Wildlife Observation. . . . .	Nothing to Report
12.	Other Wildlife Oriented Recreation. . . . .	Nothing to Report
13.	Camping . . . . .	Nothing to Report
14.	Picnicking. . . . .	Nothing to Report
15.	Vehicles (Off-Road) . . . . .	Nothing to Report
16.	Other Non-Wildlife Oriented Recreation. . . . .	Nothing to Report
17.	Law Enforcement . . . . .	38
18.	Cooperating Associations. . . . .	Nothing to Report
19.	Concessions . . . . .	Nothing to Report

#### I. EQUIPMENT AND FACILITIES

1.	New Construction. . . . .	38
2.	Rehabilitation. . . . .	39

3.	Major Maintenance . . . . .	39
4.	Equipment Utilization and Replacement . . . . .	39
5.	Communications Systems. . . . .	41
6.	Computer Systems. . . . .	Nothing to Report
7.	Energy Conservation . . . . .	Nothing to Report
8.	Other . . . . .	Nothing to Report

J. OTHER ITEMS

1.	Cooperative Programs. . . . .	Nothing to Report
2.	Other Economic Uses . . . . .	Nothing to Report
3.	Items of Interest . . . . .	Nothing to Report
4.	Credits . . . . .	41

K. FEEDBACK . . . . Nothing To Report

L. INFORMATION PACKET . . . (inside back cover)

## **A. HIGHLIGHTS**

Huron Wetland Management District is formed reducing our district to thirteen counties (Section C.1).

Henke Waterfowl Production Area was purchased (Section C.1).

John Jave transfers out and new employees for the year are Steve Hicks, Jay Peterson and Steve Spawn (Section E.1).

Wildfire occurs on Anderson WPA in Clay County (Section F.9).

The project constructed seven new dams and repaired four (Section F.14A).

Two new Kawasaki 4-wheelers were purchased for use in weed control (Section I.4).

## **B. CLIMATIC CONDITIONS**

The year was almost "normal" in terms of precipitation and temperature (See Table I). Precipitation was slightly above normal through August and slightly below normal for the remainder of the year. Several severe thunderstorms with tornados did pass near the Mundt Refuge but fortunately damage was minimal and limited to tree damage. During these storms, large volumes of rain would fall and run-off extremely fast, filling stock dams and some wetlands along water drainages.

## **C. LAND ACQUISITION**

### **1. Fee Title**

Formation of the Huron Wetland Management District in Huron reduced our 20 county district to a 13 county district. The counties which will be managed out of the Huron office include: Hughes, Hyde, Hand, Beadle, Buffalo, Jerauld and Sanborn. The counties in the Huron District are listed in this narrative because this is the transition year and management responsibilities of the areas were handled by both districts.

A 100 Acre tract in Hutchinson County was purchased as a roundout to the Henke Waterfowl Production Area in 1992. The purchase of the property was approved but not until after a bitter dispute over the control of noxious weeds in the county. The County Commissioners had the FWS confused with the State Game Fish and Parks. All of the public lands with a severe noxious weed problem belonged to the state and not the FWS. After the confusion was cleared up the commissioners agreed to the purchase.



**Table I. 1992 Climatic Conditions Recorded at Pickstown, SD**

	<b>Snowfall</b>	<b>Total Precip.</b>	<b>Normal Precip.</b>	<b>Temp. (F) High</b>	<b>Temp. (F) Low</b>
January		0.87	.38	62	-6
February		0.95	.68	76	9
March		2.92	1.21	77	9
April		1.94	2.29	95	17
May		1.38	2.92	87	33
June		3.21	3.85	89	48
July		4.81	2.65	91	47
August		4.65	2.51	96	47
September		0.69	2.21	88	33
October		1.74	1.27	88	22
November		0.48	.77	58	17
December		0.66	.63	68	-20
<b>Total</b>		24.3	21.37		
<b>Normal</b>	25.2	21.37			

---

The refuge staff currently manages 27,852.56 acres of land consisting of 127 Waterfowl Production Areas in 18 counties (see Table II). As soon as all management is turned over to the Huron Management District, we will have 83 Waterfowl Production Areas consisting of 19,582.68 acres.

## 2. Easements

A total of 495 acres of private land within the District were protected by perpetual wetland easements in 1992. Perpetual grassland easements were purchased on 433 acres. Table III lists wetland and grassland easement acres for each county.

**Table II.** Fee Title Holdings, Lake Andes WMD, 1992

County	# Management Units	Acres
Aurora	16	4,720.38
Beadle*	18	4,863.61
Bon Homme	5	801.49
Brule	3	1,073.55
Buffalo*	0	--
Charles Mix	19	4,342.92
Clay	1	40.00
Davison	4	224.52
Douglas	15	4,302.05
Hand*	14	2,797.32
Hanson	6	836.13
Hughes*	2	455.99
Hutchinson	5	748.06
Hyde*	0	--
Jerauld*	8	1,470.40
Lincoln	2	177.22
Sanborn*	2	93.00
Turner	3	658.30
Union	1	96.02
Yankton	3	151.60
<b>Total</b>	<b>127</b>	<b>27,852.56</b>

\*Huron Wetland Management District

We are still in the process of putting all FWS wetland easements on a database. This project is very time consuming and is worked on as time permits. Easement compliance is checked once a year mainly by one fall flight after harvest.

**Table III. Easement Acquisition Through 1992, Lake Andes WMD**

County	Wetland Easement Acres	Grassland Easement Acres
Aurora	9,709	--
Beadle*	15,776	259.24
Bon Homme	205	--
Brule	9,714	--
Buffalo*	837	--
Charles Mix	4,745	1,059.15
Clay	7	--
Davison	162	--
Douglas	3,006	341.17
Hand*	15,962	--
Hanson	2,443	--
Hughes*	257	--
Hutchinson	1,056	--
Hyde*	9,936	--
Jerauld*	4,223	--
Lincoln	139	--
Sanborn*	10,142	2,534.55
Turner	212	--
Union	--	--
Yankton	123	--
<b>Total</b>	<b>88,654</b>	<b>4,194.11</b>

\* Huron Wetland Management District

### 3. FmHA Conservation Easements

The Lake Andes staff survived yet another year of FmHA easements. Easements continued to roll in at a slower but steady rate throughout the year with a total of four new properties added to bring the grand total to 100 inventory properties with easements.

This year we managed the FmHA properties in the Huron Management District.

Easements were done as in previous years until the beginning of October at which time the new regulations were to take effect due to changes in the 1990 Farm Bill.

Until the beginning of October, buffer areas were placed on wetland basins greater than one acre that have no history of cropping, are temporary (dry during most of the growing season), and are isolated from larger wetlands. Buffer areas were not placed around wetlands less than one acre with a history of cropping, but were protected by a no drain, burn, fill easement. Since the buffer areas must be legally described, a grid consisting of 2.5 acre blocks with 64 blocks per quarter section was developed.

The primary purpose of the buffer easement is to protect water quality with the secondary function being wildlife enhancement. The easement document is actually an FmHA document (AN 1727) or what is called a "boilerplate" or "B" document. Since many of the county supervisors are not trained in delineating wetlands, the U.S. Fish and Wildlife Service was called in as technical advisors to FmHA.

The State FmHA will not allow management of these properties including: wetland restoration, seeding, fencing, or surveying until the property is sold. Due to this no wetlands were available again in 1992 for restoration. Restoration from 1988-90 includes a total of 67.2 surface acres in 21 basins.

Until the beginning of October there were four types of FmHA easements, three of which have buffer zones. These easements were called "B", "B1", "C" and "D" easements. All properties which were sold prior to implementation of the 1990 Farm Bill will have these easements.

The boilerplate or "B" document restricts cultivation, mowing or cutting, grazing, burning, harvesting wood products, filling, or manipulation of water through pumping, draining, dredging etc. This easement does not restrict the landowner from recreational use of the easement land, but he is responsible for paying taxes, and controlling noxious weeds. The Fish and Wildlife Service in turn is responsible for fencing and seeding (if necessary) the "B" easement areas.

The "B1" easement has the same restrictions as the "B" easement i.e. no cultivation, mowing or cutting, burning, draining etc., except the landowner may graze the easement area. The Fish and Wildlife Service will survey and sign the "B1" easement areas but does not pay for seeding or fencing.

The "C" easement, which is similar to a Fish and Wildlife Service wetland easement, restricts draining, burning, and filling of a

wetland basin . The basin may be cultivated, mowed, grazed, etc. when dry. A "C" wetland must meet the following criteria:

- a. Must be a temporary basin (dry during most of the growing season).
- b. Must be small in size (less than one acre).
- c. Must be traditionally cropped.
- d. Must be isolated from large wetlands.

"C" wetlands are also not subject to the 2.5 acre buffer blocks.

The "D" easements can be placed on important wildlife areas and native grasslands which do not have wetlands. The landowner may graze and mow these areas but is not allowed to break sod or harvest wood products. These easements must be agreed to by the FmHA county supervisors. If the supervisor does not concur with the easement, it is not placed on the property. To date only a couple of parcels have been recommended to be protected with "D" easements.

The following table depicts the number of acres of "B", "B1", "C" and "D" easements in each county of the Lake Andes NWR complex.

Prior to 1989 some properties were sold before buffer strips were required for these properties. They are reflected in Table IV as being No Drain, Burn or Fill easements.

Joint inspections with FmHA occurred on each property until the new regulations were implemented in October. The joint inspections have gone well. The supervisor can be shown in person the wetland or important wildlife area recommended for easement. The county supervisor in turn can voice any concerns he or the landowner may have about the type of easement.

At the beginning of October we were instructed to review all properties which are in inventory to conform with the new easement regulations. An easement review team was set up with members of FmHA, the USFWS, the Soil Conservation Service (SCS), and the Agricultural Stabilization and Conservation Service (ASCS). SCS determines where the wetlands are on the property. ASCS determines cropping history, the average size of an operation (ie dryland farming, dairy, cow-calf etc.) and assists in the determination of frequently cropped wetland and cropland. FmHA serves as a coordinator of the easement review team and is responsible for surveying the properties. The Fish and Wildlife Service determines the type of easement and easement boundaries and coordinates with SCS to write a management plan if necessary.

**Table IV. FmHA Easements in Lake Andes WMD, 1992**

County	# Ease.	Acres B	Acres B1	Acres C	Acres No Drain, Burn, Fill
Aurora	2	0.0	465.0	0.0	30.9
Beadle	13	310.0	3,199.0	25.1	0.0
Bon Homme	6	24.0	85.5	4.2	90.0
Brule	2	80.0	350.6	9.0	0.0
Charles Mix	9	145.0	290.0	2.6	24.0
Clay	3	52.5	0.0	1.8	0.0
Davison	7	80.0	176.3	12.2	2.0
Douglas	5	130.7	221.2	1.5	18.0
Gregory	1	0.0	10.0	0.0	0.0
Hand	9	370.0	1,243.5	8.0	81.0
Hanson	2	0.0	0.0	0.0	48.8
Hughes	2	0.0	10.0	3.2	0.0
Hutchinson	4	52.8	47.4	5.2	0.0
Hyde	8	32.5	1,691.9	1.1	47.0
Jerauld	4	37.5	300.5	6.5	3.0
Lincoln	1	0.0	50.0	5.9	0.0
Sanborn	12	37.5	1,200.8	13.8	30.0
Tripp	3	0.0	165.0	2.4	7.0
Turner	4	86.3	7.5	1.5	0.0
Union	1	0.0	40.0	0.0	0.0
Yankton	2	69.6	5.0	3.8	0.0
<b>Total</b>	100	1,508.4	9,559.2	107.8	300.7

The new easements are now called "A", "A1", "B", "C", and "D" easements. The exhibit "A" document is similar to the old "B" document. An "A" easement can be placed on wetlands which "are not cropped to an agricultural commodity or are cropped less than frequently and do not have a history of haying or grazing. An "A1"

easement may also be placed on these wetlands. The "A1" easement is similar to the "A" but would allow grazing which is similar to the old "B1" easement.

The new "B" easement is to be placed on a wetland with a history of haying or grazing. The landowner is allowed to hay or graze the easement area in accordance with a management plan developed jointly by the SCS and USFWS. The management plan is fairly restrictive and has set stocking rates and periods in which the area may be grazed. If the area is to be hayed instead of grazed, haying is only allowed once annually between July 15 and September 1 to allow adequate regrowth of vegetation and provide winter cover and spring nesting cover. The "B" easements were not well received by the managers in South Dakota due to the fact that compliance with these easements will be difficult to monitor.

The new "C" easement is similar to the old "C" easement because it allows continued cropping of frequently cropped wetlands. It is different from the old "C" because the size constraints are not a factor as long as the wetland is frequently cropped. Also this easement is to be used only where necessary "to maintain a property's marketability as an agricultural production unit".

The new "D" or floodplain easement can be placed on areas determined to be important for their floodplain values. The landowner is allowed to carry on agricultural practices such as grazing, hay cutting, cultivation and cropping the easement area without further degradation of floodplain values.

In addition to changes in the types of easements and the addition of the easement review team, the amount of easement which can be placed on the property has changed. In the past we were not limited to the size of the easement area. Now PC (Prior Converted) wetland can be encumbered up to 10% of the total cropland acres, and 20% of the cropped wetland acres can be encumbered with easements. The easement acres would include any buffer strips around the wetland. Also, if the property has both PC wetlands and other cropland wetlands the 10% easement acres of the PC wetlands is included in the 20% limitation for all cropland wetlands. In other words the easements for cropland wetlands cannot exceed 20% of all of the cropland acres. Also, the buffer strips may not exceed an average width of 100 feet in cropland. Wetlands in pasture do not have these size limitations. Because of these size limitations we are not able to place 2.5 acre square grids on most properties to legally describe them. Instead, we will be doing a metes and bounds survey around most easements.

Although easements can be very constraining to the landowner, easement permits may be issued for haying, dugout restoration, cropping, and livestock watering facilities.

Transferring fee title of FmHA inventory properties with wildlife potential to the National Wildlife Refuge System has been difficult. The lands requested for fee title transfer are broken into two categories--those of major importance and those not of major importance. Those of major importance may be transferred to the requesting agency only after the former owner's lease back/buy back rights and homestead protection rights have expired. Those properties not of major importance may be transferred after the former owners lease back/buy back rights and homestead protection rights have expired and the property has been advertised for sale but no qualified buyers wish to bid. In other words, opportunity for transfer is possible but chances of a transfer occurring are slim.

Only one property, the Schaffner property in Hand county, was requested for transfer. The property lies next to a State Waterfowl Production Area and would be perfect for a land swap. According to the county FmHA office the former owner is likely to purchase this property back from FmHA so we will probably not be able to obtain it.

After a property is sold comes the tasks of wetland restoration, surveying, seeding, fencing, and posting of the property. Because of limited staff time and budget, private contractors, (usually the new owner or lessee) seemed to be the most practical means by which to get some of these tracts both seeded, fenced and the wetlands restored, if the landowner or lessee had the equipment. The Steven's FmHA property in Beadle county was fenced. Purchase orders were written to fence the Jensen property and the Scholten Property in Douglas county.

Surveys were contracted out of the Regional Office with Randy Bacon, a land surveyor out of Aberdeen . The surveys went well with the exception of one disgruntled land owner in Hand county, Mr. George Weiseler.

Mr. Weiseler would not allow the surveyor onto the property and did not agree with the easements even though he bought 160 acres of land back at the price of \$8,520 or \$53.25 an acre which is about half of the land value. He says there are no "wetlands" on the property and did not want anyone on his land. The case was referred to John Cooper the Senior Resident Agent in Pierre.

The property will be surveyed by Aberdeen Wetland Acquisition Office land surveyors in the presence of the Special Agents and Refuge officers in 1993. Mr. Weiseler also made a cash sale when he purchased the property from FmHA. He was given the quitclaim deed and the easement to record in the courthouse. It was found out that Mr. Weiseler did not attach the easement to the quitclaim deed when it was recorded even though the quitclaim deed stated "Subject to Easement Conservation Reservation in the United States". The quitclaim deed was appended to the deed with



assistance from FmHA. The procedure of recording cash sales of inventory properties was also changed. The landowner must now give the FmHA county supervisor a check for the amount required to record the deed and easement and FmHA is responsible for recording the easement.

Sometimes things still don't go smoothly. We received a recorded easement from the county supervisor in Turner county but the easement "Exhibit A" map was not attached to the deed. Sandy Uecker called the Register of Deeds in Turner county and asked if there was a map attached to the document so she could obtain a signed copy of the map. The Register of Deeds office informed her there was no map attached to the quitclaim deed easement. The easement document was recorded but no "Exhibit A" map was attached. Rich Holter, the Turner County FmHA supervisor, was informed of the mistake and said he would talk to the closing attorney and see if they could find the missing map and get it recorded.

Preliminary assessments of wetland easements continues on land which may come into inventory. Due to lack of time, these properties were not field checked, but a draft easement document was made using NWI (National Wetlands Inventory) maps, SCS (Soil Conservation Service) slides and Wetland Scope and Effect Maps, and ASCS (Agricultural Stabilization and Conservation Service) aerial photos. These draft easements were sent to the FmHA county supervisors with an explanation that these were only a rough draft and subject to change if more wetlands were found which required protection. Of course this procedure also changed with the new 1990 Farm Bill. Now we are required to meet with the review team and visit the property and determine the easements which would be placed on the property if it were to come into inventory. Lake Andes staff completed 2 preliminary easements in 1992.

We did receive requests for ground checking properties which may come into inventory and we agreed to do the ground checks earlier in the year before the 1990 Farm Bill changes, but only if the property is under a lease back/buy back situation. The lease back/buy back usually occurs when the former landowner or close relative is willing to purchase or lease the property directly after it comes into inventory. We are told when the property advances to this stage in the debt restructuring process, it is very close to coming into inventory and is often a last option to paying back the debt. Many landowners know about the wetland easements and sometimes are willing to do anything to prevent the property from going into inventory and having an easement placed on the land. They do this by selling the portion of property which may be coming into inventory and paying off part of their loan.

All FmHA information was entered into a database for easy tabulation of management needs. In conjunction with the database, a wall chart was made of all sold properties providing a more visible view of management needs.

A considerable amount of time was spent copying FmHA easements which were missing from the Regional Office Realty database. The RO database showed 63 properties in inventory, when actually there were 95 properties in inventory at the time.

## E. ADMINISTRATION

### 1. Personnel



**Figure 1.** Lake Andes NWR Staff (L. to R.) (92-17,exp7,SAH)  
 Back Row: 15, 13, 3, 1, 12, 10, 9.  
 Front Row: 5, 6, 8, 7, 14, 11, 2.

#### Permanent

- |    |  |                    |
|----|--|--------------------|
| 1. | Bill Wilson, GS 12 . . . . .               | Refuge Manager     |
| 2. | Steve Hicks, GS 11. . . . .                | Refuge Manager     |
| 3. | Jay Peterson, GS 9. . . . .                | Refuge Manager     |
| 4. | John Jave, GS 11 . . . Transferred 1/11/92 | Refuge Manager     |
| 5. | Sandra Uecker, GS 7 . . . . .              | Refuge Manager     |
| 6. | Eugene Slaba, WG 6. . . . .                | Maintenance Worker |
| 7. | Norma Martin, GS 6 . . . . .               | Refuge Assistant   |

Career Seasonal

8. John Eldridge, WG 6. . . . . Maintenance Worker  
 9. Leon Kirchhevel, WG 6. . . . . Maintenance Worker  
 10. Richard Rolston, WG 2. . . . . Laborer

Temporary

11. Wayne Henderson, GS 3 . . . . . Biological Aid  
 12. Karl Fleming, GS 4 . . . . . Biological Aid  
 13. Jeff Dvorak, GS 4. . . . . Biological Aid  
 14. Steven Spawn, GS 3 . . . . . Biological Aid  
 15. Ejner Fransen, WG 6 . . . . . Maintenance Worker

New employee's for the year were Steve Hicks (Sup. ROS, EOD 3-92), Jay Peterson (ROS, EOD 1-92) and Steve Spawn, (temp. bio-aid, EOD 5-92). Steve Hicks transferred back to South Dakota from Bon

**Table V.** Lake Andes Complex Staffing Pattern, 1986-92

Year	Permanent		Coop Ed & Temporary	Total FTE
	Full Time	Career Seasonal		
1992	6	3	4	10.59
1991	6	3	6	9.87
1990	6	3	5	10.46
1989	5	4	1	8.84
1988	5	4	2	8.60
1987	5	4	2	8.66
1986	5	4	4	8.98

Secour NWR in Alabama. Jay transferred from Lacreek NWR in southwestern South Dakota. Steve Spawn is fresh out of SDSU in Brookings and is a welcome addition to our temporary staff. Steve exhibits an excellent working attitude and is very eager to become involved in FWS activities. His work will be tailored to the private lands programs.

## F. HABITAT MANAGEMENT

### 1. General

Management practices that are used on waterfowl production areas are instituted to meet the following objectives: develop and maintain waterfowl habitat with the emphasis on waterfowl production, preserve and maintain a prairie wetland ecosystem for plants and wildlife indigenous to the area, and preserve, restore, and enhance federally listed endangered and threatened species. To accomplish these objectives we use several tools, such as: rest, grazing, haying, mowing, replanting native grasses, fire, and weed control. The weather and water conditions also play a big part in how we attempt to keep our lands in top condition.

Management responsibilities within the District were divided between four wetland managers this year. Steve Hicks took care of Brule, Aurora, Davison, Hanson and Hutchinson Counties. Jay Peterson managed our areas in Douglas, Charles Mix and Bon Homme Counties. Sandy Uecker gave her attention to Turner, Lincoln, Yankton, Clay and Union Counties. Wilson, Hicks and Peterson shared the areas in the northern Counties of Hughes, Hyde, Hand, Beadle, Buffalo, Jerauld and Sanborn. These counties were in transition becoming part of the new Huron WMD managed by Mark Heisinger.

None of the staff here were sad to see seven of our Counties moved into the newly formed Huron WMD. Because of all the added programs and responsibilities within the District, it was getting much tougher to properly manage all of the units. This district was so spread out that it was impossible to spend adequate time in the field to make proper management decisions. Evaluation and planning was suffering tremendously. Hopefully we can do a better job in the future.

The never-ending fight with noxious weeds (primarily musk and Canada thistles) is probably our biggest problem. County weed boards, commissioners, and adjacent neighbors continually pressure and remind us of our responsibilities. It is a tough job to try meet these obligations and yet comply with Service policies regarding the use of chemicals.

### 2. Wetlands

There isn't a lot that we can do to actively manage most of the wetlands in the district. We are held to the mercy of the ever changing weather systems and contemplate the cyclic nature of our prairie potholes. Wetlands in the district started the year mostly dry in 1992 but ended up in much wetter condition by the end of the year. Eastern Beadle County and northern Sanborn County were somewhat wet at the beginning of the year, but those were really the only wet places. The drought seemed to break for most of the

district in late May and with many locally heavy rains, several wetlands in the district began to fill through the summer. Much of the eastern and northern parts of the district went into the fall and winter so wet that the crops were not harvested. For the first time in years we saw what we would consider a normal winter beginning in December with wetlands frozen over and collecting moisture in the form of snow.

Some active wetland management was done in '92 in the form of restoration and creation. A dam/dugout was constructed on the Somek WPA. This work should create a 3.5 acre wetland. A ditch plug was installed on the Sorensen WPA in Aurora County which will restore a 2.9 acre wetland. All construction was done by L.A. Complex staff members.

#### 4. Croplands

Land that is farmed in the District WPAs falls into two categories, food plots and areas in preparation for grass seeding. Food plots are planted for resident wildlife through cooperative farming agreements with local farmers. These are planted where a suitable land base exists in excess of what we feel is needed for nesting cover. All work and seed is provided by the cooperator. The use of herbicides and insecticides is prohibited. We usually designate corn to be planted on our share. Other suitable food crops include forage sorghum and milo. Cooperators are allowed to harvest the government's share after April 1 the following year.

In 1992 there were 298 acres farmed in the district (see Table VI). Of these acres 279 were farmed by cooperators and 19 were farmed by our staff. A new 10 acre food plot was measured and the general boundaries delineated on the Scheffel WPA in Bon Homme Co. This food plot will be subdivided into three plots, each containing a different crop that will be rotated each year. Generally the crops grown in the food plots did well this year. It was a very cool wet summer, but since we were not in any hurry to harvest, these conditions did not bother our program.

**Table VI.** Farming Summary, Lake Andes NWR, 1992

Crop	Acres	Gov't Share Acres
Clover	7.5	7.5
Corn	66.75	23.75
Oats	135	0
Milo	88.75	34.75
Total Acres	298.00	



## 5. Grasslands

The Lake Andes District manages approximately 10,000 acres of native prairie/native grass seedings and nearly 5,000 acres of tame grass/dense nesting cover (DNC) throughout the 20 county area. Because of the large size of the District, three distinct prairie communities are covered. These communities, east to west, include tall grass or true prairie, mixed grass/tall grass transition, and mixed prairie. The District's grassland management program includes properly timed burning, haying, and grazing treatments, coupled with periods of rest to try to achieve the desired range conditions.

Management of re-established native stands and native prairie are usually managed through grazing contracts with permittees while tame grass and DNC are hayed. During the last two years, we have begun to put more emphasis on grazing some of our DNC/tame grasslands to leave as a goal 50% of the cover standing instead of removing everything as haying would do. Very little alfalfa remains in the older stands and cooperators have had little trouble with livestock bloat.

Five hundred thirty seven acres of grasslands were planted in 1992. Grass seeding began late in March with 200 acres of switch grass drilled on the Jackson WPA. Seven acres were planted to a native mix on DeHaai WPA and Fousek WPA had three acres planted to a native mix. In April we seeded 25 acres of native grass on the DeHaai WPA and 101 acres of natives on the Kleinsasser WPA. Spring mixed native grass seedings continued in May with 43 acres seeded on the Hanson WPA and 13 acres on the Edelman WPA. Grass seeding resumed in August with 37 acres of intermediate wheatgrass planted on the Scheffel WPA in Charles Mix County. We planted two dormant seedings of native grass mixtures in September with 35 acres seeded on the Kafka WPA and 30 acres on the Jim Reimnitz FmHA property. The Korkow WPA in Beadle Co. had 43 acres seeded to intermediate wheatgrass in September also. With all of the rain that we received during the growing season this should have been a good year to establish new grasslands. Hopefully it wasn't too cold as besides the rain it was one of the coolest summers on record.

## 7. Grazing

Twenty six units received grazing treatments in 1992 (see Table VII). The grazing rate was \$10.05/AUM which was down from \$10.60/AUM charged in 1991. Discounts were made for moving cattle, temporary fencing, fence maintenance and hauling water.

High intensity/short duration grazing is our grazing management goal. We preferred to keep the duration down to 1 week or less, but permits were issued with durations of up to 30 days. Each unit was different depending on the location of water, existing fences, herd size, the proximity of the permittee and his willingness to

Table VII. 1992 Grazing Summary

UNIT NAME	ACRES GRAZED	AUM'S USED	PERMIT NUMBER
** COUNTY: AURORA			
CRYSTAL LAKE WPA	158.0	147.0	68730
HUMPHREY	60.0	60.0	68729
KRELL WPA	65.0	60.0	68700
LUTZ WPA	90.0	31.0	83335
SCHUTE WPA	60.0	30.0	68723
SORENSEN WPA	110.0	124.9	68733
** Subtotal **	543.0	452.9	
** COUNTY: BEADLE			
BAUER WPA	254.0	0.0	68684
KLEINSASSER WPA	81.0	70.0	68722
RUPPLE WPA	14.0	13.2	68698
SCHULL WPA	150.0	76.0	68749
** Subtotal **	499.0	159.2	
** COUNTY: BON HOMME			
BUCHHOLZ WPA	80.0	58.0	68705
SCHAEFFER WPA	150.0	40.0	68704
** Subtotal **	230.0	98.0	
** COUNTY: CHARLES MIX			
GREEN WPA	161.0	40.0	68734
RAYSBY WPA	200.0	84.0	68735
SOULEK & HUBER WPA'S	112.0	88.0	68706
VAN ZEE WPA	85.0	23.0	68728
** Subtotal **	558.0	235.0	
** COUNTY: DOUG. CHAS MIX			
BROKEN ARROW	2145.0	915.0	83342
** Subtotal **	2145.0	915.0	
** COUNTY: DOUGLAS			
DEVELDER WPA	137.0	40.0	68679
** Subtotal **	137.0	40.0	
** COUNTY: HAND			
BUSS WPA	32.0	28.5	68703
MILLER DALE WPA	60.0	25.0	68701
REINHARDT WPA	133.0	33.0	68732
SPRING LAKE	140.0	46.2	68727
** Subtotal **	365.0	132.7	
** COUNTY: HANSON			
DELGER WPA	48.0	45.0	68731
** Subtotal **	48.0	45.0	
** COUNTY: HUTCHINSON			
HOHN WPA	150.0	50.0	68737
** Subtotal **	150.0	50.0	
** COUNTY: JERAULD			
BRANDENBURG WPA	14.0	16.0	68699
** Subtotal **	14.0	16.0	
** COUNTY: UNION			
COLLAR WPA	92.0	88.0	68714
** Subtotal **	92.0	88.0	
*** Total ***	4781.0	2231.8	

work with us. Generally, our goal was to remove .5 to .75

AUMs/acre. In some cases, units that had not been managed for some years had heavy mulch build-ups. In these cases, more AUMs were removed. Leaving about half the cover standing allows for nest initiation and ensures a mulch layer for the following spring.

We had two cases of trespass grazing on the District this year. A cattle trespass on the Denning WPA was reported by our maintenance personnel Leon Kirchhevel. The offending landowner was contacted and the cattle were removed. A call was received from Dave Walls, the State Conservation Officer from Vermillion. He reported that Warren Jorgenson's sheep were still grazing on the Collar WPA. The sheep were supposed to have been removed in August, so there is a strong possibility that he will not be the permittee next year.

#### 8. Haying

Hay was cut on 11 WPA's in 1992 (see Table VIII). Periodic haying is used to reduce restrictive mulch accumulation where weeds (primarily thistles) are a problem, or used on units that are not set up for grazing. Haying is allowed only during the period July 10-31, in order not to interfere with waterfowl nesting and still give time for some re-growth.

The charge per acre varies between permittees because of hay quality. Reductions are made for excessive weed growth, excessive mulch build-up, and stand density.

#### 9. Fire Management

On March 23, a wildfire occurred on the Anderson WPA in Clay Co. Jim Olson, an adjacent landowner was burning a wetland, food plot and road ditch complex when the fire jumped the road and ignited the WPA. The landowner made an unsuccessful attempt to control the fire on the WPA. He summoned the Vermillion Fire Department. Three trucks and 15 fire fighters were dispatched to the fire. The fire had consumed the entire 40 acre tract before they had arrived. Fortunately, no injuries or property damaged occurred from this fire and the fire department did not submit a bill for suppression.

#### 10. Pest Control

This was a very productive year for pest control on the district. Our main pests are weeds considered as "NOXIOUS" and requiring eradication by State law. We are required to comply with this law by FWS policy. This compliance is a very large job on the wetland district due to the type of land, it's being spread out over thousands of square miles, and the constantly fluctuating water levels which create prime habitat for some of the plants considered noxious. (See Figure 2 for the 1992 weed control summary.)

We received \$30,000 in MMS monies for weed control in FY92. We used some of the money to purchase a new trailer to carry a new



Table VIII. Lake Andes WMD Haying, 1992

UNIT NAME	ACRES HAYED	PERMIT NUMBER
** COUNTY: AURORA		
CRYSTAL LAKE WPA	55.0	68707
HUMPHREY WPA	43.0	68711
OVERWEG WPA	22.0	68708
SORENSEN WPA	50.0	68680
** Subtotal **	170.0	
** COUNTY: BEADLE		
BAUER WPA	100.0	68736
** Subtotal **	100.0	
** COUNTY: BRULE		
KOSS WPA	45.0	68702
** Subtotal **	45.0	
** COUNTY: DAVISON		
KURTENBACH WPA	21.0	68682
LINDEMAN WPA	16.0	68710
** Subtotal **	37.0	
** COUNTY: DOUGLAS		
PLOOSTER WPA	35.0	68683
** Subtotal **	35.0	
** COUNTY: HANSON		
BOGGS WPA	30.0	68712
** Subtotal **	30.0	
** COUNTY: HUTCHINSON		
MAYER WPA	35.0	68681
** Subtotal **	35.0	
*** Total ***	452.0	

water tank and two new Kawasaki 4X4 ATV's fitted with sprayers. The rest of the money was spent on chemical, cooperator services, repair costs and labor.

We recorded only 19 weed complaints in 1992. This was a welcome reduction from the previous years. The reduced number of complaints was probably due to a number of things: a very wet cool summer which made everything grow slower, our increased effort and visibility, active involvement with county weed boards, and the fact that we are really nice guys.

District staff attended several County Weed Board meetings during the year as well as phone contacts on a regular basis. Managers

COUNTY	ACRES TREATED	NUMBER OF SEPARATE TREATMENTS	LBS. AI OF CHEM. 1 USED	LBS. AI OF CHEM. 2 USED	FWS CHEMICAL COSTS	FWS OTHER COSTS	COOPERATOR EXPENSES TO FWS
<b>** IPM NUMBER: LAN92001, 2,4-D ON CANADA THISTLE, MUSK THISTLE, LEAFY SPURGE</b>							
AURORA	941.55	32	941.58	0.00	2279.76	5809.35	0.00
BEADLE	1.25	1	1.25	0.00	3.03	7.71	0.00
BON HOMME	62.70	1	62.70	0.00	151.80	386.86	0.00
BRULE	50.29	2	50.29	0.00	121.75	310.29	0.00
CHARLES MIX	1019.67	27	1019.67	0.00	2468.67	6291.36	0.00
DOUGLAS	605.04	20	605.04	0.00	1495.65	3732.55	0.00
HAND	14.00	1	26.60	0.00	0.00	0.00	315.80
HANSON	184.93	8	184.93	0.00	447.73	1141.02	0.00
HUTCHINSON	283.70	7	517.40	0.00	1252.10	351.69	687.50
LINCOLN	68.97	3	68.97	0.00	166.98	425.55	0.00
SANBORN	33.86	2	33.86	0.00	81.98	208.92	0.00
TURNER	139.40	8	139.40	0.00	229.13	583.93	645.00
UNION	98.00	2	93.00	0.00	225.40	0.00	490.00
YANKTON	38.00	1	38.00	0.00	92.00	234.46	0.00
<b>** Subtotal **</b>	<b>3541.36</b>	<b>115</b>	<b>3782.69</b>	<b>0.00</b>	<b>9015.98</b>	<b>19483.69</b>	<b>2138.30</b>
<b>** IPM NUMBER: LAN92004, 2,4-D/DICAMBA ON CANADA THISTLE</b>							
AURORA	11.50	4	8.82	2.87	79.32	70.95	0.00
BEADLE	35.80	17	33.97	8.92	246.62	220.88	0.00
CHARLES MIX	27.50	13	26.10	6.87	189.78	169.69	0.00
DAVISON	4.80	4	4.55	1.20	33.13	29.61	0.00
DOUGLAS	14.50	6	13.78	3.61	99.88	89.46	0.00
HAND	27.00	4	25.65	27.00	0.00	0.00	1043.15
HANSON	1.00	1	0.95	0.25	6.91	6.17	0.00
JERAULD	32.00	9	30.41	7.99	220.86	197.44	0.00
TURNER	4.00	1	3.80	1.00	27.63	24.68	0.00
YANKTON	1.00	1	1.52	0.40	11.05	9.87	0.00
<b>** Subtotal **</b>	<b>159.10</b>	<b>60</b>	<b>149.55</b>	<b>60.11</b>	<b>915.18</b>	<b>818.75</b>	<b>1043.15</b>
<b>** IPM NUMBER: LAN92005, 2,4-D/CLOPYRALID ON CANADA THISTLE, WORMWOOD SAGE</b>							
HAND	14.00	1	14.00	1.33	0.00	0.00	400.00
<b>** Subtotal **</b>	<b>14.00</b>	<b>1</b>	<b>14.00</b>	<b>1.33</b>	<b>0.00</b>	<b>0.00</b>	<b>400.00</b>
<b>** IPM NUMBER: LAN92006, HAND DIGGING MUSK THISTLE</b>							
DOUGLAS	1171.00	14	0.00	0.00	0.00	0.00	3513.00
<b>** Subtotal **</b>	<b>1171.00</b>	<b>14</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>3513.00</b>
<b>** IPM NUMBER: LAN92008, MOWING MUSK THISTLE, CANADA THISTLE</b>							
BON HOMME	45.00	1	0.00	0.00	0.00	277.65	0.00
DOUGLAS	5.00	1	0.00	0.00	0.00	30.85	0.00
<b>** Subtotal **</b>	<b>50.00</b>	<b>2</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>308.50</b>	<b>0.00</b>
<b>** IPM NUMBER: LAN92009, HAND PULLING WORMWOOD SAGE</b>							
CHARLES MIX	1.00	1	0.00	0.00	0.00	50.00	0.00
<b>** Subtotal **</b>	<b>1.00</b>	<b>1</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>50.00</b>	<b>0.00</b>
<b>*** Total ***</b>	<b>4936.46</b>	<b>193</b>	<b>3946.24</b>	<b>61.44</b>	<b>9931.16</b>	<b>20660.94</b>	<b>7094.45</b>

Figure 2. 1992 Integrated Pest Management Summary

Wilson and Peterson attended a weed board meeting in Plankinton, Aurora County on Feb. 17. It was a productive meeting with the hostility level on the light side. One person in attendance stated that we had missed some spots of Canada thistle on one WPA and was upset about that. We invited him to show us, on a map, where we had missed the thistles. He did mark several spots on our map of the unit and seemed satisfied that we would no longer miss them. We informed the board of our past years efforts and our plans for 1992. They likewise indicated what their efforts would entail for the upcoming season. Bill Wilson attended a Beadle Co. Weed Board meeting in Huron on March 6. Jay and Sandy attended the Turner Co. Weed Board meeting in Parker on March 10. The members of the weed board were confused as to the ownership and management responsibilities of wildlife lands within the county. Fortunately, personnel from the Fish and Wildlife Service and the SD Game, Fish and Parks were present and clarified the problem. From the comments heard at the meeting, the FWS is doing a good job at controlling noxious weeds within the county. It was very apparent that the State Game, Fish and Parks Department is the "black sheep" of this county. Very strong comments were voiced towards the State Department, primarily at the upper management personnel.

We made arrangements with several cooperators and County Weed Boards to perform weed control on various units of the district. Having others do the weed control on some of our units is often more cost efficient. Also during the prime time to control the target pests our staff is spread so thin that they can not get to all of the areas needing work. By having others do some weed control we can get more control done at the right time to do some good. Warren Jorgenson, cooperator for Collar WPA, agreed to do the weed control there. Jorgenson's labor was compensated for by a reduction in his grazing fee. We provided the chemical to Jorgenson. A purchase order was issued to Bruce Ebbeson of Turkey Ridge for spraying of Plucker WPA in Turner county. He sprayed 43 acres at the cost of \$645. Plucker has had a persistent weed problem and we have received numerous complaints on this WPA over the past few years. Since we have obtained the services of Mr. Ebbeson our weed complaints have dropped and a notable reduction in weeds has occurred. A purchase order for \$3,513.00 was issued to the Douglas Co. Weed Board for hand chopping of musk thistle. The Board hires several area youth for this program which is both cost efficient and effective in controlling musk thistle. An arrangement was also worked out with the Hutchinson County Weed Board for weed control in that County. The County Weed Supervisor there had complained a lot in the past about our weed problem. We gave her the opportunity this year to show us how proper weed control is to be performed, while staying within our chemical allowance constraints. As it turned out, the County weed control crew had trouble controlling our weeds also and we ended up working in Hutchinson County after all. We do not anticipate hiring these people to do weed control work next year.

Painted lady butterfly caterpillars were seen feeding on Canada thistles at several WPAs this spring. The caterpillars do not appear to kill the plants entirely, but they do a fairly complete job of defoliating the lower portion of the plants during the early growing season. Hopefully this insect will help weaken the plants allowing higher eradication success rates by other biological agents or herbicides.

As with most things, our on the ground actions require lots of paperwork in reporting. Our weed control program is no exception. To help standardize pest management reporting Assistant Manager Hicks assisted Milt Suthers of the regional office in constructing an Integrated Pest Management database for use region wide. Hicks also completed pesticide use reports for the State of South Dakota for all of our employee's use of chemical on FWS lands.

13. WPA Easement Monitoring  
    A. Wetland Easements

Since the early 1960's, perpetual easements have been purchased from landowners on a willing seller basis to protect wetlands in private ownership. The only restrictions the easement places on the land are that wetlands cannot be drained, burned, or filled. In other words, when they are dry of natural causes, they belong to the farmer to farm as he wishes. When they are wet, they belong to the ducks.

The monitoring of wetland easements to insure compliance is one of our highest priority jobs. It is also one of the most time consuming and expensive jobs. Violations are usually detected with an aerial flight in the fall of the year, which requires over 40 hours of flight time to inspect the 87,000 acres of easements in this District. Each suspected violation is ground checked to gather evidence with measurements and pictures to build our case. Usually in February and March, landowner contacts are made to establish a compliance date for restoration of the wetlands. In the spring, all violations have to be reinspected to insure compliance has been met. If the landowner refuses to restore the wetlands, court action is initiated. In the fall, surveillance flights are again made and the process repeats itself.

As a result of the fall 1991 easement flights, a box full of possible easement violations awaited Steve Hicks when he arrived on station in March, 1992. With the help of Uecker and Peterson this box was turned into fifteen new easement violations. The violations ran the usual gamut of ditches, fills and burning. Of these violations, thirteen were resolved by the end of the year. One drain and one fill violation remain open pending dry working conditions to complete restoration. One additional burn violation was discovered and resolved during May of '92. The violation on Charles Mix 43X, circa 1989, was also closed after restoration in

1992. One other open case, Hand County 85X, Raymond Schaefers, remains from 1984.

The fill violations on Beadle 17X and Hand 124X were old dumps that had been used off and on for years. The dumps were there when we purchased the easements and have grown slowly ever since. This type of violation is normally very hard to deal with. Instead of trying to make a case on the fill that has accumulated since the easement was purchased, another alternative was used. The landowners were contacted and the easement violation of placing fill, garbage, in the wetland was explained. The landowners agreed to obtain estimates from a contractors to move and bury the trash outside the wetland basin. We agreed to pay for the removal with wetland extension money. In this way the wetlands were restored, and any future dumping would be a clear violation.

New maps detailing FWS easement properties were delivered to Hanson, Davison, and Huron Co. ASCS offices. This will hopefully alleviate the problem of having landowners coming into the ASCS offices, applying for ditch cleanouts on easement property and being approved by the ASCS offices because they did not know it is under easement. Most all Counties within the District have up to date easement maps in at least the SCS offices.

Nine easement permits were issued during the year. All were for new dugouts or renovation of old dugouts. Most of the time we issue these permits after we receive and sign a minimal effect agreement with SCS.

#### B. Grassland Easements

Grassland easements were monitored during the fall wetland easement flights. One can not really tell much other than if the area is still in grass. We hope to monitor the grassland easements for haying before July 15 in the future but this will entail another set of flights or far flung road trips. We do try to get around in our normal travels to check on the grasslands at least once a year.

#### C. FmHA Conservation Easements

Another year goes by with massive headaches and time expended on the FmHA conservation easement debacle. This activity has taken up almost one FTE out of our staff time. Easement compliance was checked when Service easements were flown in the fall. With the developing complexity of these easements monitoring will probably require a separate flight in the future. As the easements have evolved over the years they now require an individual look at the land and the easement document to see just what we are looking for and where it is supposed to be. No easement violations were detected in 1992.

Some of the FmHA conservation easements require our attention for management of the habitat other than just monitoring for violations. In the interest of habitat management, we issued six easement permits in 1992. Four of these were for haying on areas that haying is not allowed by the easement, but was a practice allowed by us as a management tool to keep the upland habitat in good condition. Another easement permit allowed an owner to hay his land and then interseed the easement area with alfalfa. This should introduce a legume into the grass community which will help improve diversity and provide nitrogen to the other plants (grass). One permit was issued allowing a dugout to be constructed on an easement where grazing is allowed.

#### 14. Private Lands Initiatives

##### A. Wetland Restorations and Creations

With requests for wetland restorations decreasing in the district, a new program was initiated in 1991 by Carl Madsen with the South Dakota private lands program. The programs primary focus was to create artificial wetlands by placing embankments in draws, or repairing dams. Carl approached the conservation districts in Tripp county with a plan detailing funding and what was expected from them. The conservation boards were very receptive and the plan was implemented.

The program was a cooperative effort between the U.S. Fish and Wildlife Service, Ducks Unlimited, Clearfield/Keyapapa Conservation District, Hamill Conservation District, Soil Conservation Service (SCS), and various landowners. Initial funding consisted of \$10,000 from the Fish and Wildlife Service, \$10,000 from Ducks Unlimited, and \$5,000 from the conservation districts. With 25% of the cost being paid by the landowner, there was a possibility of \$33,333.33 being expended for earthwork. Fencing supplies for the spillway, and trickle tubes were also provided by the FWS at no cost to the landowner. Technical assistance concerning many of the projects was provided to the FWS by the SCS.

Tripp County was chosen because the majority of the landowners in the county own large tracts of native pasture. These large tracts of land allow the landowners to do rotational grazing so cover for nesting is present with water being the limiting factor for waterfowl production. Dams were chosen for creation or repair because with proper site selection they have been shown to be far more productive than conventional dugouts. Variables that influence site selection include land use, and topography. Preferred land uses are pasture or CRP (see Figure 3 ).

Sites that contained dry draws with relief of 1% or less with wide bottoms, and sides less than 12' high were considered to be suitable. These type of sites were sought because they are conducive to creating large bodies of shallow semipermanent water with small embankments. Permanent water was created by the removal





**Figure 3.** Waterfowl Use On a Newly Created Wetland In CRP

of fill for the embankment construction. If the dam was to be used by livestock a 10' minimum depth was specified for the borrow area. The dams were constructed with 3:1 slopes and 12' tops. Three to one slopes were chosen because 2:1 slopes could not be finished with a top dressing of topsoil. The 12' width for the dam tops were used because the majority of the scrapers were that wide (see Figure 4).

Another topographical aspect that was considered was the amount of watershed. Depending upon the land use, soil types, and amount of relief in the watershed, areas 100 - 1,200 acres were considered optimum. These size watersheds allow the smaller structures to fill without the concern of the dam washing out with the first large rainstorm.

During the initial phases of the program Mark Hogan (Madison refuge) demonstrated to Karl Fleming and Wayne Henderson how to develop a friendly working relationship with landowners. The SCS technician, Harry Hilgemann, showed Karl and Wayne how to determine if the site had soil suitable for embankment construction, and the procedure for staking dams.



**Figure 4.** One of the Contractors Hard at Work

Some of the dams required the installation of pipe in conjunction with the construction of an earthen spillway. The pipe was installed when the dams were placed in draws containing springs or watersheds that could generate more water than the structure was designed to hold. The primary purpose of the pipe was to prevent the constant use and degeneration of the earthen spillway. Plastic pipe was chosen over standard corrugated metal culvert (cmp) by recommendation of the local SCS. Plastic is preferred because many of the soils contain slightly corrosive minerals and cmp deteriorates quickly if the smallest scratch occurs during installation. This detail could have proved costly and troublesome in the future and demonstrates one of the many reasons why the FWS worked closely with the SCS.

The project constructed 7 new dams and repaired 4 dams with 51.4 acres of water being created in 1991. The total cost of the 11 projects was \$26,790.71 with \$19,246.32 being cost shared by FWS/DU, \$4,027.73 being cost shared by the Clearfield/Keyapaha and Hamill Conservation districts, and \$3,516.66 being paid by various landowners. To encourage participation in the pilot program it was decided that projects strictly for wildlife would be cost shared 100%. The FWS & DU paid 85% and the conservation districts paid





**Figure 5.** Fencing and Seeding the Spillway was Mandatory in Pasture Land

15% of the wildlife projects. If the landowner used the dam as a watering source for cattle 25% of the project cost was paid by the landowner and the spillway was required to be fenced. The fencing of the spillway was required to prevent cattle from walking on the spillway and creating a small, narrow, highly erodible path for water to follow (see Figure 5, Figure 6, Figure 7).

The pilot program was extremely successful so every conservation district within the state was contacted by Madsen and asked if they would like to participate in a wetlands creation program in 1992. Thirty five conservation districts responded favorably and a cooperative effort between the conservation districts, FWS, DU, and North Americans Wetland Council was initiated. Each district that participated in the cooperative effort was promised \$10,000 of FWS money would be spent in their district. Individual districts also received a pledge of \$10,000 from a North Americans Wetland Grant with the stipulation that the pledge was matched with \$10,000 of non Federal money. A portion of the \$10,000 match was met with a \$2,500 pledge from Ducks Unlimited so the districts were then required to raise \$7,500 and were given various options of how to do this (see Table IX).



**Figure 6.** A Site in CRP Before Dam Construction....

The money indicated as available for wetland creation projects is the maximum amount of money that could be generated if all the FWS and grant money is used for projects with a 75/25 cost share. As shown by the table, Eastern counties dominated by agriculture are very expensive to create wetlands in. The landowners are not willing to allow large portions of their property to be flooded so the cost/acre increases. Gregory and Tripp are located West of the Missouri river and native prairie pasture is abundant. The landowners like to see water and allow large portions of their property to be flooded. Another factor that lowered the cost/acre in Tripp county is the fact that 61% of the projects done were repairs rather than new construction. Whatever the cost is the FWS is receiving excellent public relations because of the projects. Unfortunately favorable PR can not be seen in budget reports (see Figure 8).

Extension agreements were also written for wetland restoration and enhancement projects. Wetland restorations are definitely more cost effective when compared to wetland creations. The drawback to restorations is that many of the wetlands are in areas where farmers do not want water. With the wetland creations the landowner can choose where the water will be (see Table X).



**Figure 7.** The Same Site a Year Later After Dam Construction and a 3" Rain

**Table X.** Wetland Restorations and Enhancements

County	Basins	Acres	Cost
Beadle	1	7.0	448.80
Bon Homme	1	6.4	0.00
Charles Mix	5	15.2	927.00
Lincoln	1	0.4	510.00
Sanborn	2	15.0	400.00
<b>Total</b>	<b>10</b>	<b>44.0</b>	<b>2,285.80</b>

**Table IX: Counties in Lake Andes WMD That Participated in the Wetland Creation Project.**

County	Money available	Money spent	Wetland projects	Wetland acres created	Cost per acre
Charles Mix	33,033.33	22,531.2 <sub>9</sub>	9	15.4	1,463.0 <sub>7</sub>
Clay	30,000.33	9,516.00	4	2.0	4,758.0 <sub>0</sub>
Davison/Hanson	31,700.33	3,969.60	4	2.6	1,526.7 <sub>6</sub>
Gregory	31,700.33	19,409.8 <sub>4</sub>	8	25.2	770.23
Hutchinson	33,033.33	9,482.94	5	9.0	1,053.6 <sub>6</sub>
Tripp-2 districts	66,066.67	27,382.4 <sub>6</sub>	14	80	342.28
<b>TOTAL 8</b>	<b>225,534.3<sub>2</sub></b>	<b>92,292.1<sub>3</sub></b>	<b>44</b>	<b>134.2</b>	<b>687.72</b>

#### B. Habitat Improvement Projects

A grass seed mixture containing Intermediate Wheatgrass, Alfalfa, and Sweet Clover was provided to interested landowners this year to help increase nesting cover. The extension agreements were used in conjunction with the ASCS set aside program. The areas planted were set aside acres and will remain planted for 1992, 1993, 1994, and 1995 providing the set aside ratio designated by ASCS remains constant. The farmers are required to delay haying until July 16th if the acres are released earlier (see Table XI).

One delayed haying extension agreement was written this year in Davison & Hanson Counties for 169.1 acres at a cost of \$1,148.00.

Nesting structures were also distributed this year. Sign up sheets were provided at the State fair and at the Charles Mix County midwinter fair. Interested people were contacted and if they had a suitable site, nesting boxes were issued. If the cooperators maintain the boxes for 10 years they can keep the nest boxes when the extension agreement ends (see Table XII).

#### C. Farm Bill Responsibilities

Our investment in working with the conservation provisions of the Food, Agriculture, Conservation, and Trade Act of 1990 and what is left of the 1985 Farm Bill, was substantial in 1992. A significant amount of staff time was put into working with SCS in negotiating





**Figure 8.** Another Satisfied Landowner

**Table XII.** Types of Nesting Structures Distributed in the Lake Andes WMD

County	Goose Tubs	Wood Duck boxes
Beadle	6	5
Bon Homme		30
Charles Mix		6
Sanborn	5	5
<b>Total</b>	<b>11</b>	<b>46</b>

minimal effect agreements. Other time consuming chores include consultation on wetland restoration agreements, wetland determinations, converted wetland determinations, and various exemptions to the farm bill. Part of the way through the year a blanket agreement with SCS eliminated our needless participation in

**Table XI. Acres of Multi-Year Set Aside Planted**

County	Extension Agreements	Acres planted
Aurora	2	15.0
Bon Homme	1	150.0
Charles Mix	1	3.0
Clay	2	36.0
Douglas	2	208.2
Gregory	1	20.0
Hand	1	5.0
Lincoln	1	3.7
Union	7	69.0
Yankton	1	20.0
<b>Total</b>	<b>10</b>	<b>529.90</b>

some of the more mundane aspects of the Act such as minimal effect agreements for new dugout construction and dugout restoration in wetlands greater than five acres. See Table XIII for a summary of our activities during 1992.

#### G. WILDLIFE

##### 1. Wildlife Diversity

The District's management objectives are aimed at providing optimum habitat for waterfowl production and to protect natural prairie wetlands. Upland habitat is managed through a program of controlled burning, grazing, haying and rest to provide optimum diversity of plants and animals indigenous to the prairie pothole region.

##### 2. Endangered and/or Threatened Species

Bald eagles are classified as endangered in South Dakota and are a common winter resident along the Missouri River which flows along the western boundary of the District. In late winter the eagles generally disperse from areas of concentration along the river to forage on the uplands. Scattered birds are sighted in the District

**Table XIII. 1992 Fairbill (FACTA) Activities Summary**ACTIONS WITH FWS CONCURRENCE

COUNTY	MINIMAL EFFECT AGREEMENT (MEA)	MEA NEW DUGOUT	MEA DUGOUT CLEAN OUT	MEA DAM/ DUGOUT	WETLAND RESTOR. AGREEMENT	CONVERTED WETLAND (CW) NON/ AG USE	CW THIRD PARTY EXEMPT	CW TECH. ERROR
AURORA	1	7	0	0	1	0	0	0
BEADLE	0	3	0	0	1	0	0	0
BON HOMME	0	1	0	0	0	0	0	0
BRULE	0	0	7	0	0	0	0	0
CHARLES MIX	0	4	0	6	3	0	0	0
CLAY	0	0	0	4	0	0	0	0
DAVISON	0	6	4	3	2	1	0	0
DOUGLAS	3	2	0	0	1	0	0	0
GREGORY	2	7	0	8	0	0	0	0
HAND	1	6	3	0	0	0	0	0
HANSON	1	7	9	1	1	0	2	0
HUTCHINSON	1	5	0	0	0	0	0	0
JERAULD	1	1	0	0	0	0	0	0
LINCOLN	4	0	0	0	0	0	0	3
SANBORN	1	8	0	0	0	0	0	0
TRIPP	0	2	0	3	0	0	0	0
TURNER	0	3	0	3	1	0	0	0
UNION	0	0	0	0	1	0	0	0
*** Total ***	15	62	23	28	11	1	2	3

ACTIONS WITHOUT FWS CONCURRENCE

COUNTY	MINIMAL EFFECT AGREEMENT (MEA)	MEA NEW DUGOUT	MEA DUGOUT CLEAN OUT	MEA DAM/ DUGOUT	WETLAND RESTOR. AGREEMENT	CONVERTED WETLAND (CW) NON/ AG USE	CW THIRD PARTY EXEMPT	CW TECH. ERROR
GREGORY	0	1	0	0	0	0	0	0
LINCOLN	2	0	0	0	0	0	0	0
TURNER	1	0	0	0	0	0	0	0
*** Total ***	3	1	0	0	0	0	0	0

during this time, often near concentrations of upland game.

Peregrine falcons may be found in the District during their seasonal migrations. None were sighted this year.

Whooping cranes are known to pass through the District during the spring and fall migrations. There were two reports of whooping cranes sighted south east of Wagner in '92. Three cranes were seen flying with a group of sandhill cranes. Unfortunately, the individuals who saw them on Monday, October 26, did not contact the refuge until Thursday. Consequently, the report was not positively confirmed by a member of the refuge staff. Another sighting of two

lone whoopers was reported to the refuge on October 30. After investigation we believe that the individual saw two tundra swans.

### 3. Waterfowl

With weather conditions unusually warm and dry we saw an earlier than normal spring migration of waterfowl through the district in 1992. The breeding pair survey showed an increase in pairs using the district this year but early nesters still had very dry conditions.

Due to the wet cool weather conditions during the summer of '92 wetlands in the district that had been dry began to fill. Fall migrating waterfowl took advantage of the almost good water conditions and spread out through the district on their southern journey.

We are seeing an expansion of the giant Canada geese flock out of the Madison WMD into the Beadle County area of this district. To help this expansion we provided goose nesting structures through an extension agreement with Conservation Officer Roger Strom. Strom gave the structures to interested landowners who had good habitat on their property and wanted to raise more Canada geese. As confirmation of the Canada expansion, goslings were observed on the Leclaire and Weiting WPAs in Beadle Co.

In 1987, the U.S. Fish and Wildlife Service, Regions 3 and 6 initiated a survey to annually assess the size and productivity of waterfowl populations, and measure wetland habitat conditions within certain Wetland Management Districts (WMD) in North Dakota, South Dakota, Minnesota, and northeastern Montana. The original impetus for the survey resulted from FWS Directorate's desire to improve the monitoring of migratory birds and to obtain consistency among National Wildlife Refuge (NWR) waterfowl surveys which were currently being conducted. This survey called the "Four Square Mile Waterfowl Population Survey" has been performed since 1989 on the Lake Andes WMD. The four square mile survey replaced the  $\frac{1}{2}$  section survey that we used to do.

When the four square mile survey began, waterfowl production estimates were given for the land base of the various WMD's involved. The productivity estimate was dependant on having a reasonably current cover information on each sample pot. With the advent of the USDA's Conservation Reserve Program and large numbers of cropland acres planted to cover, the cover data for much of the survey was rendered obsolete. Consequently production data has not been available for the last couple of years.

The four square mile survey has provided nesting pair and wet acre estimates For the WMD since it's inception. There were approximately 200,000 wet acres within the district in 1989. Wet acres fell off drastically in 1990 and remained at about 50,000



acres wet in 1992. Total pairs declined from about 350,000 in 1989 to approximately 60,000 in 1991 and increased to around 125,000 in 1992. Estimated breeding pairs per square mile, for all waterfowl species in the district were: 24.38 in '89, 12.73 in '90, 4.85 in 91, and 9.16 in 1992.

#### 4. Marsh and Water Birds

The Lake Andes WMD is used by a wide variety of marsh and water birds. The most common of these birds are great blue herons, green-backed herons, black-crowned night herons, great egrets, American bitterns, coots, soras, double-crested cormorants and American white pelicans. Several cattle egrets were sighted on the district during the year. This invader is sighted more often each year.

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

Shorebird species recorded on the WMD during 1992 included willets, greater and lesser yellowlegs, avocets, Wilson's phalarope, marbled godwits, common snipe and long-billed dowitchers. Upland sandpipers were common on the larger grassland units. A significant number and variety of species can be found on wetlands within the District, but no formal surveys are conducted.

#### 6. Raptors

During 1992, the usual raptor sightings in the WMD included red-tailed hawks, northern harriers, ferruginous hawks, rough-legged hawks, Swainson's hawks, turkey vultures and American kestrels. Golden eagles were occasional winter visitors. Great horned owls, screech owls, Cooper's hawks, and sharp-shinned hawks were commonly found in shelter belts. Sightings of bald eagles were common throughout the district during the waterfowl migration periods and winter months. Osprey were sighted along the Missouri River during the year.

#### 7. Other Migratory Birds

The Lake Andes WMD is host to most of the migratory passerine birds that utilize tall, mid, and short grass prairies. The district is also the summer home to several species of birds that take advantage of the man established environments of shelter belts, tree claims and towns. Several of the birds using the district are actual neotropical migrants which are experiencing a continent wide population decline. We are attempting to gear our management strategies to provide the best habitat possible for this wide variety of birds.

The dove coo count was performed in May. Two transects were run in Charles Mix and Aurora counties. Temperatures were very cold at the beginning of the two counts, 32° and 38° F. respectively. A

total of 124 birds were heard and 57 doves were seen. This is down from last year's count of 154 doves heard and 48 doves seen.

#### 8. Game Mammals

The most abundant big game animal over the District is the white-tailed deer. Mule deer are common along the Missouri River breaks and are occasionally observed on WPAs along the western edge of the District. WPAs provide excellent habitat for white-tails and are popular hunting areas.

Some coyote hunting occurs on the WPA's of the district. Most local citizens are in favor of killing coyotes because of their reputation of killing sheep and young cattle. There is a state season on coyotes and WPAs are open to hunting.

#### 10. Other Resident Wildlife

The ring-necked pheasant is the most popular of the resident game species in the District. The mild winter of '91/'92 allowed maximum numbers of pheasants to survive and the cool wet summer of '92 made for good hatching conditions. State population estimates were higher than in recent years. Pheasant populations on the district have also increased due to the thousands of acres of nesting cover in the Conservation Reserve Program.

Sharp-tailed grouse and prairie chickens are common along the western border of the District. Millerdale, Campbell and Broken Arrow WPAs receive the most use by these birds.

Numbers of bob-white quail seem to be increasing along the Missouri River. More quail have been seen and heard in the last couple of years.

Muskrat populations were very low except on a few isolated type IV wetlands. Wetlands were mostly dry and provided poor habitat for muskrats during the winter of '91/'92. With water conditions improved throughout much of the district in the summer and fall of 1992 we did see more muskrat activity.

#### 11. Fisheries Resources

Fisheries resources on most WPAs in the district are very limited. This is due to the cyclic wet/dry nature of most of our wetlands.

Minnow trapping has been a hot topic on other WMDs in the state due to the disruptive nature of this activity on the WPAs. We have a few WPAs that have been used for minnow trapping over the years. Since the wetlands on these WPAs have been mostly dry recently we haven't been in the midst of the controversy. Arrangements were made throughout the state with commercial minnow trappers to curb their unauthorized use of WPA waters and uplands.

## 17. Disease Prevention and Control

There were no known waterfowl die-offs on the District's WPAs during 1992.

## H. PUBLIC USE

### 1. General

District waterfowl production areas are open year-round to a variety of outdoor activities. Wildlife observation, hunting, photography, picnicking, and nature hikes are all available to those willing to leave their vehicles. Hunting and trapping are in accordance with South Dakota seasons and bag limits. Use of motorized vehicles, overnight camping and fires are prohibited on all District WPAs. The scattered WPAs provide an opportunity for individuals to stand in waist-high native grass, overlook a cattail-lined marsh, and see the South Dakota prairie as it once was before the tractor and plow.

### 6. Interpretive Exhibits/Demonstrations

Assistant Manager Peterson assisted the Bon Homme County SCS-DC in developing an environmental/educational interpretive area plan on a portion of the Scheffel WPA in Bon Homme County. Preliminary plans include a parking lot, two nature walks, native grass displays, a food plot display, a coniferous forest planting, a deciduous tree planting and two wetland interpretive sites. The proposal will be submitted to the SD SCS who will then submit it to the State Conservation District for funding. If funded, the State will provide 75% and 25% will be in-kind matching type funds. Plans are to provide an interpretive area that will be relatively self-sustaining with low maintenance that will be available to schools and other learning type organizations.

Sandy Uecker, Norma Martin, and Karl Fleming worked at the Mid-winter Fair in Geddes on January 20-21. The refuge annually provides an interpretive booth for the event. A drawing was held for a Golden bird identification book and it was won by Rose Dufek of Geddes. A drawing was also done for two wood duck nesting boxes with the winners being Chris Nelson and Patsy Crosby both from Platte. These small-town winter fairs are excellent ways of selling the Fish and Wildlife Service. Many contacts, good and bad alike are made at events such as this.

### 8. Hunting

Pheasant hunting was slightly slower than normal this year primarily due to the vast amounts of cover that the birds are using. The corn growing season was nearly two weeks behind normal this year. Snow and wet weather only delayed further the corn



**Figure 9.** This crew managed to find a few birds. We don't know how many they missed before they got these though. (JP)

harvest. This has meant the pheasants had immense quantities of good protective cover to hide in. Reports were all the same, "too much cover". Hunters worked harder and found fewer birds due primarily to the standing corn crop. The office entertain myriad questions from many visiting hunters. See Figure 9.

The duck hunting seasons for the District are split into two units. Most of the District is in Unit 3, which has a season opening October 10 and closing November 17. The other portion of the District lies within Unit 4. Unit 2 takes advantage of later buildups of waterfowl along the Missouri River in Charles Mix, Bon Homme, Yankton, and Clay counties. This season begins October 24 and closes December 1. Good hunting for mallards was available in December, but the season closed before the mallard population peaked.

Canada goose hunters found this year to be extremely frustrating. Due to the mild fall the goose population never peaked. Field hunting for geese proved to be very unproductive. Opener of goose season came on October 3. Snow geese could be hunted until December 30 state-wide. Canada goose seasons for South Dakota



residents in the Lake Andes District are split into two units. Unit 2 consists of those counties lying adjacent to the Missouri river (Buffalo, Brule, Charles Mix, Bon Homme, and the west half of Yankton) and Unit 1 consisted of all others. The season for Unit 2 ran from October 3 through December 20 and Unit 1 ran from October 3 through December 20.

Deer hunters had a discouraging fall in 1992, for the same reasons the pheasant hunting was so slow. Because of the amount crop in the fields and the slow harvest, the GF&P reopened the season after the first of the year. Waterfowl production areas in the District are an important public land base for deer hunters.

#### 10. Trapping

Waterfowl production areas are open to public trapping subject to State law. Muskrat trapping was poor to non-existent on most WPAs because of little or no water to support rat populations. In addition, prices for long-haired furs remained low which means less trapping pressure.

#### 17. Law Enforcement

Law Enforcement in the district is handled primarily by the Game, Fish and Parks Conservation Officers.

Managers Peterson and Uecker attended the 48-hour Law Enforcement Inservice Training in Marana, Arizona in January.

No FOCs were issued by any of the staff in 1992.

### I. EQUIPMENT AND FACILITIES

#### 1. New Construction

Forty rods of new barbed wire fence were constructed on the Buss WPA by cooperator Duane Hoffman. We supplied the material and Hoffman supplied the labor. Hoffman then grazed the unit and his labor bill was deducted from the grazing charge. This turned out to be an inexpensive way to build a fence as it takes our staff about two and one half hours to get to this WPA. Travel time alone would have eaten up a couple of staff days.

Our staff constructed 40 rods of barbed wire fence on the Sorensen WPA in November. This fence which was built along the county road north of the old home site on the WPA, will facilitate better grazing practices.

## 2. Rehabilitation

The Sorensen WPA in Aurora County had fences repaired and new gates were installed. The fence on Lindeman WPA in Davison County received 80 rods of repair. South Coler WPA in Douglas County received 133 rods of fence repair.

## 3. Major Maintenance

The 1991 3/4 ton Chevrolet pick-up truck with only 11,000 miles was taken into the shop to have a new automatic transmission installed. This job was under warranty, we paid the \$100.00 deductible.

A syphoning bulb was installed in the gas line on the airboat to solve the problem of not being able to start the engine after sitting for extended periods of time. The gas would drain out of the line and if someone tried to start the motor, it would cause a safety circuit to kick out on the electric fuel pump.

Other maintenance noted for future reference: The 1987 3/4 ton Dodge received a rebuilt carburetor and starter. Both S-10's received new shocks and brakes. The large utility trailer was painted and had its brakes adjusted. The right hydraulic cylinder used to raise and lower the blade on the complex's road maintainer was removed and taken in to be repaired. The John Deere drill had some new seed boots, seed disks, and depth bands installed on it. The blazer had complete maintenance done to it before sending it to the Huron WMD. Shocks and knuckles were replaced, oil and filters were changed, and an overall cleanup of the vehicle was done.

## 4. Equipment Utilization and Replacement

Early in the year paperwork was initiated to purchase a liquid cooled 4-wheel drive ATV to be used for spraying noxious weeds. We have had problems with Honda ATV's overheating while traveling slowly in extremely hot weather. Rather than continually cooking the engine and accumulating high repair costs, we searched the market for a liquid cooling ATV. We found that Kawasaki was making a shaft drive, liquid cooled, 4-cycle machine that looked to be a dandy workhorse. This ATV was designed to be more of a work machine than a recreational toy. One problem encountered in obtaining this machine was that Kawasaki was not on GSA contract. Honda and Polaris were on contract but they did not meet the specifications we were looking for in a workhorse type ATV. We were able to justify our specs and get approval from contracting to purchase two Kawasaki KLF-400'S. The Kawasaki dealer in Mitchell won the bid on the two machines which were delivered in May. We outfitted the 4X4's with new 20 gallon spray tanks. Metal grill guards were also fabricated from expanded steel as we could foresee sticks going through the plastic grill and into the radiator in short order.

The two new Kawasaki 4-wheelers performed well during the weed control season. Personnel using them reported that the Honda overheated, while the Kawasaki remained cool and functional. We did encounter a few problems though, as logs, sticks, and rocks took a toll on the skid plates and the rubber boots on the steering and CV-joints. The plates were straightened and the rubber boots were replaced. Metal shields were fabricated and installed on the machines to protect the rubber boots in the future. Kawasaki installed anti-vibration foot pegs and handle attachments as a factory refinement. We noticed that the 1993 model of this machine has larger shields and a factory installed metal grill.

The complex received a new 3255 John Deere tractor equipped with a front end loader. There were lots of smiles in the maintenance area as the crew all pictured themselves doing farm work in this chariot (see Figure 10).



**Figure 10.** New 3255 JD tractor ready to go seeding native grasses with the Haybuster drill (92-300,exp3,ES)

MMS money was used to purchase a new dual axle trailer from Trail Rite of Armor, SD. We wrote specifications for a low flatbed trailer which could carry the two new Kawasaki ATV's and a 500



gallon water tank. We ended up with a nice 17 foot torsion axle flat bed with hide away ramps that would allow mounting the trailer from either the side or the rear. The trailer was used extensively in weed control operations and later in the year for private lands work. Karl Fleming discovered that if suspended between the rear end and the tongue and fully loaded, the trailer would bend. Trail Rite straightened the trailer for nothing and added a bit more steel to the bed for those extra tough situations.

Two new 1992 Ford 1/2 ton extended cab pickup trucks were received at the complex in July. The trucks were purchased with FY 1991 money and were a welcome addition to the refuge vehicle fleet. Assistant managers Hicks and Peterson laid claim to the new trucks within minutes of their arrival. Maintenance man Ejner Frandsen fabricated two headache racks for the new pickup trucks. Both were made to the specifications of the principle operators of the pickups. Ejner produced an excellent product.

#### 5. Communications Systems

New GE radios were installed in both new Ford pickups. The radios were programmed with both complex frequencies, the Madison WMD frequency, the County work channel, and three law enforcement frequencies.

### J. OTHER ITEMS

#### 4. Credits

Creation of this document was a joint effort by the entire staff.