KULM WETLAND MANAGEMENT DISTRICT

Kulm, North Dakota

ANNUAL NARRATIVE REPORT

Calendar Year 1984

NATIONAL WILDLIFE REFUGE SYSTEM
Fish and Wildlife Service
U.S. DEPARTMENT OF THE INTERIOR

KULM WETLAND MANAGEMENT DISTRICT

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5 1 6 4 3 2

Photo 1. Kulm Staff - RAH

Personnel

1. Larry West, Refuge Manager, GS-11, PFT
2. Roger Hollevoet, Assistant Refuge Manager, GS-9, PFT
3. John Jones, Biological Technician, GS-9, PFT
4. Edna Okerlund, Refuge Assistant, GS-5, PFT
5. James Steinmetz, Maintenance Worker, WG-8, PFT
6. Sherwood Lundgren, Laborer, WG-2, Career Seasonal

Review and Approvals

Larry West 3-14-85 3/19
Submitted By Date

Regional Office Review Date

Photo 2. Doug Leschisin, Temporary Bio. Aid, 10/84 - SCL

Photo 3. Barb Espe, Temporary Bio. Aid, 6/84 - SP

Photo 4. SCA Volunteers - Stephanie Petter and Sherryl Livingston, 6/84 - RAH

1 2 3 4 5 6

Photo 5. YCC Crew:
1. Gary Brovold, Group Leader, 6/84 - RAH
2. Hope Ulrich, Youth Leader
3. John Jones III
4. Curtis Vogel
5. Mark Smith
6. Jim Thiery

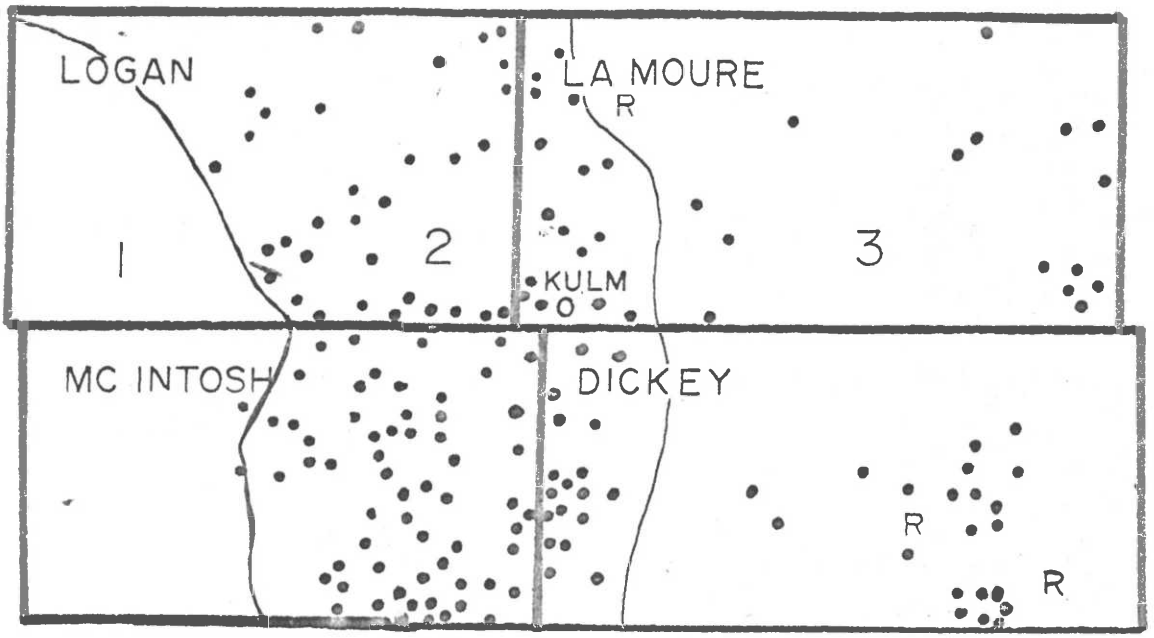
INTRODUCTION

The Kulm Wetland Management District is located in southeastern North Dakota lying in the famed Prairie Pothole Region. This region has a variety of glacial land forms, the most well known being the numerous shallow wetland basins so vital to waterfowl/wildlife production. The District is comprised of four counties - McIntosh, Logan, Dickey, and LaMoure; and the District headquarters is centrally located in the city of Kulm, ND. There are three major physiographic regions in the district which include from east to west the Southern Drift Plain, the Missouri or Prairie Coteau and the Coteau Slope. The Drift Plain is characterized by flat to gently rolling ground moraine while the Missouri Coteau is best described as knob and kettle country. The wetland basins in the Missouri Coteau average larger and deeper than those on the Drift Plain and hence are somewhat more permanent (Photo 6). District lands include 42,353 acres of fee land making up our Waterfowl Production Areas (WPA's), 97,249 wetland easement acres, and 3 easement refuges totalling 4,108 acres. There has been 306 tracts of fee land purchased which are managed as 182 WPA's. Two thirds of the WPA's and wetland easements are located in the Prairie Coteau and the 3 easement refuges are located in the Southern Drift Plain; very little land administered in the District is located in the Coteau Slope. Approximately 60 per cent of fee lands are upland with the remaining 40 per cent being wetland acres.

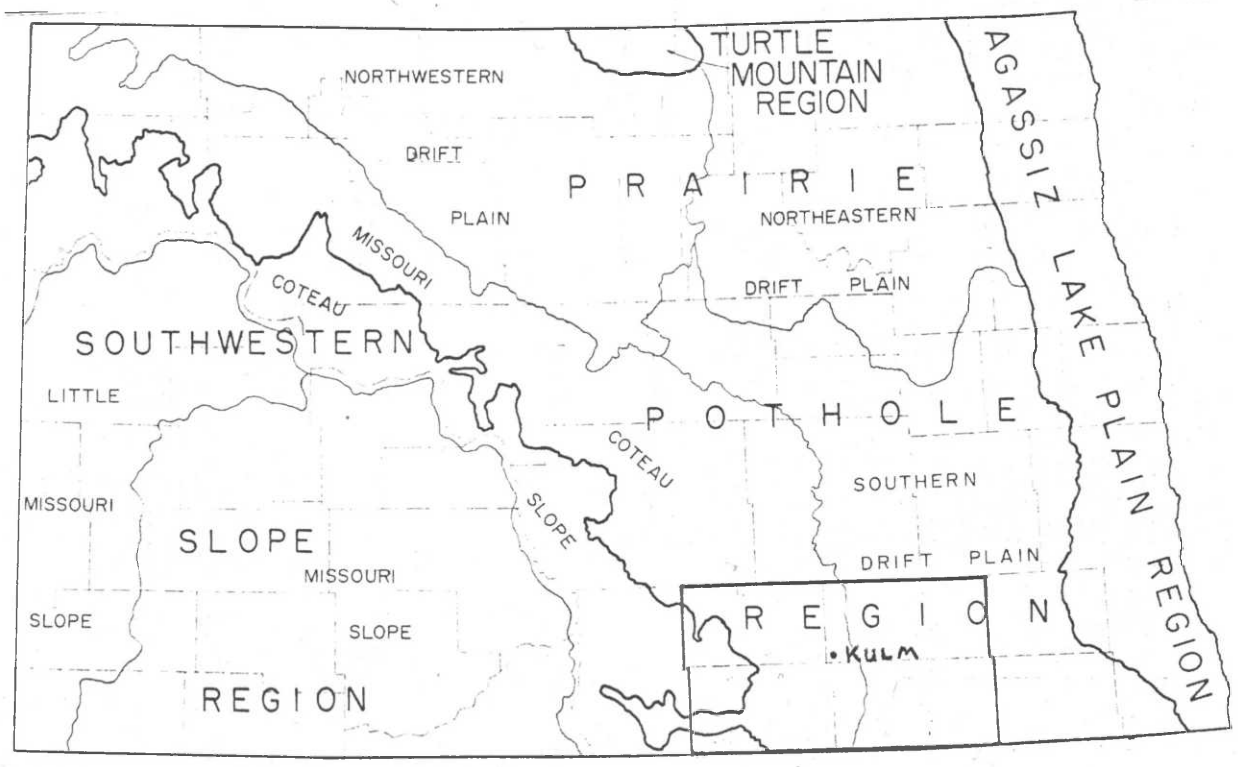
The primary purpose of the Wetland District is waterfowl/wildlife production and wetland preservation activities. Primary funding for acquisition was through funds generated by the sale of migratory bird hunting and conservation stamps.

Photo 6. The Prairie Coteau: rolling hills and beautiful wetlands, Moldenhauer WPA, 6/84 - JWJ.

KULM WETLAND MANAGEMENT DISTRICT



- • WPA"S
- R EASEMENT REFUGE
- 1 MISSOURI SLOPE
- 2 MISSOURI COTEAU
- 3 DRIFT PRAIRIE



NORTH DAKOTA

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J. OTHER ITEMS

A. HIGHLIGHTS

Waterfowl management easement acquisition was initiated this year with several tracts optioned and 178 wetland acres purchased. (Section C.2)

Construction began on two electric, predator enclosure fences to try to create predator free environments for nesting waterfowl. (Sections G.3, G.15)

Resource inventory planning cards were completed for McIntosh and Logan counties. (Section D.2)

The volunteer work program was phased in this year. Two volunteer biologists were put on board. (Section E.4)

Major land management activity included controlled grazing on 2804 acres, haying 796 acres, farming 626 acres, prescribed burning 689 acres, seeding 380 acres, and fencing 7 miles. (Section F)

Spring and fall easement surveillance flights picked up a record number of easement violations this year, 38 total. (Section F.13)

Ducks unlimited funding was received for two waterfowl production projects. (Section G.3)

One hundred ring-necked pheasants and ninety two Canada geese were released in the District this year. (Section G.12)

No botulism breakouts occurred this year but 1003 snow geese were killed by toxic irritants. (Section G.17)

B. CLIMATIC CONDITIONS

Spring water conditions were near excellent for breeding waterfowl and spring pair counts revealed fair-good numbers. Most type I and type III wetland basins were filled to capacity but a lot of the larger type IV's and V'd did not refill completely due to the previous year's drought conditions. Water levels were stable through June but a dry summer and fall resulted in many wetlands and small lakes being dry for the waterfowl hunting season. If good snow and spring rains are not received, a poor water year can be expected for the spring of 1985. Total precipitation received in 1984 was 17.97 inches.

Monthly high and low temperatures for 1984 are as follows:

	High	Low
January	44	-29
February	49	-15
March	49	-14
April	70	22
May	85	26
June	89	34
July	92	41
August	98	34
September	93	18
October	78	3
November	50	2
December	48	-18

Range -29 to 98° F

C. LAND ACQUISITION

1. Fee Title

Acquisition of land in the Kulm Wetland Management District was non-existent due to the continued refusal of the Governor and his staff to approve any land sales to the Fish and Wildlife Service. This is an extremely political issue and is directly related to the controversial Garrison Diversion Project. It appears that until the FWS pushes the issue or Garrison's finally resolved no additional lands will be purchased for wetland preservation and waterfowl production. This is unfortunate as we receive several calls each year from willing sellers wishing the Fish and Wildlife Service would purchase their lands. Many of these would be round outs to existing WPA's which would allow management of complete wetland complexes. The Garrison issue appears to be coming to a decision point soon and the State also has a new Governor; maybe things will break loose.

Currently the Kulm District manages 42,353 acres of fee title in four counties; McIntosh County has 17,402 acres, Logan County with 10,654 acres, Dickey County has 9,209 acres, and LaMoure County with 4,800 acres. The additional acres are in the form of meandered acres.

2. Easements

An exciting event has occurred in the State this year with the rekindling in acquisition of wetland easements. This is the first year wetlands have been obtained by easement since 1977 when the last wetland easement was purchased. Several wetland tracts have been optioned within the District. Biological evaluations have been completed on 35 willing seller offers, and two purchases were completed. One purchase was

for 165 wetland acres with the cost being $11,300.00 and the other tract purchased was for 13 wetland acres costing $550.00. The purchase of wetlands through fee title or easement is one of our only tools to halt private drainage which destroys approximately 20,000 acres/year in ND (photo 7).

Photo 7. Private drainage of wetlands is no small task and destroys 20,000 acres of wetlands each year in ND, drainage ditch being constructed in Logan Co., 6/84 - JWJ

3. Other

A 40 acre island/peninsula was leased through the ND habitat program which adjoins FWS lands, enabling us to construct a predator fence and hopefully create a predator free environment in a large alkali lake.

D. PLANNING

2. Management Plan

Updating of Resource Inventory Planning Cards was completed for McIntosh, Logan, and a small portion of Dickey county.. The old resource inventory cards were completed in 1976 and with many changes occurring over the years an updating greatly improved the use and value of the cards. These cards are used almost daily and are a valuable asset to the office when planning management needs and activities, assessing probable impacts, and planning daily projects or discussing questions with the public.

Small unit management plans were also complted for several WPA's in the District. This included a map with cover condition and an attachment sheet discussing management needs or proposals, construction ideas, wetland renovation potential, observations, problems and enforcement. This aids the staff greatly in yearly management planning, staffing and budgeting time and money.

Updated land inventories were also completed for the entire District and the three easement refuges. Acres can be found in section F.1.

3. Public Participation

Meetings were held with County commissioners from all four counties to discuss weed problems and any other of their concerns. Shared revenue payment checks were also distributed. Meetings were also held with various county weed boards and township boards to discuss their concerns.

4. Compliance with Environmental Mandates

The station's pesticide use proposals were submitted to the Regional Office to be reviewed for proper use and compliance with NEPA.

A joint agreement was made with the KEM Electric Cooperative in the siting of a powerline. Archaeological and environmental concerns were addressed prior to finalizing the location. Orange spheres were placed on the line in critical areas to prevent bird strikes.

5. Research and Investigations

Kulm NR 84 - "The effects of rest-rotation grazing and prescribed burning on the mixed grass prairie community and wildlife production in the glaciated prairie region" (905-08).

This study led by Arnold Kruse, Research Biologist, of the Northern Prairie Wildlife Research Center entered its fifth of eight years. The objectives of this study are to evaluate changes in the height, density, species composition and frequency of vegetation on areas of native prairie in the Missouri Coteau of the Prairie Pothole Region resulting from various grazing and prescribed burning systems. The study will also evaluate changes in the nesting response of dabbling ducks and population trends of breeding birds due to these systems. The fourth year of avian nesting data and fifth year of vegetative data were collected. A record 136 duck nests were located in 1984 with apparent nest success being 27.2% and Mayfield success at 11.2%. There were 102 duck nests located in 1983 with a 19.6% Mayfield and 124 nests in 1982 with 11.3% Mayfield success. This is way down from the 52% success on 71 nests in 1981. Upland sandpiper, however, had very good success in 1984 with Mayfield success at 62.4%. This study should provide very important information affecting future management of native rangeland in the Dakotas by the FWS.

Kulm NR 84 - "20-year Easement Study."

The Northern Prairie Wildlife Research Center is also conducting a study of the expiring 20 year easement contracts within the Kulm WMD and other Districts. District personnel monitor the amount of drainage occurring on these expired easements during the annual easement flights, and report the findings to Ken Higgins, the study coordinator. An evaluation will occur after several years of flights.

Kulm NR 84 - "Island/Point Research Study" (924.A - 924.09)

John Lokemoen, Research Biologist, began some preliminary work in the Kulm District in order to initiate research on the benefits of predator free environments and homing of nesting birds into these areas. An inventory of all the districts points (peninsulas) and islands was completed by District staff along with initial construction of electric fences for predator barriers at the Bovey and West Island WPA's. Nest dragging by District staff on one of the areas to be fenced revealed only one Wilson's Phalarope nesting on the area along with several predator dens and runways. It will be interesting to see if and how dramatically waterfowl use, nesting and success may increase if the predator fence is successful.

E. ADMINISTRATION

1. Personnel

1984 Staff included:

Larry West, Refuge Manager, GS-11, PFT
Roger Hollevoet, Refuge Manager, GS-9, PFT
John Jones, Biological Technician, GS-9, PFT
Edna Okerlund, Refuge Assistant, GS-5, PFT
James Steinmetz, Maintenance Worker, WG-7, PFT
Sherwood Lundgren, Laborer, WG-2, PCS
Douglas Leschisin, Biological Aid, GS-4, Temporary EOD 4/16/84-11/9/84
Barbara Espe, Biological Aid, GS-4, Temporary, EOD 5/14/84-8/31/84
Randy Klusmann, Biological Aid, GS-4, Temporary, EOD 5/28/84-8/19/84
Stephanie Petter, Volunteer, EOD 4/9/84-6/29/84
Sherryl Livingston, Volunteer, EOD 4/9/84-6/29/84
Gary Brovold, YCC Group Leader, GS-4, Temporary, EOD 5/28/84-8/19/84
Hope Ulrich, YCC, EOD 6/4/84-8/4/84
John Jones III, YCC, EOD 6/4/84-8/4/84
Curtis Vogel, YCC, EOD 6/4/84-8/4/84
James Thiery, YCC, EOD 6/4/84-8/4/84
Mark Smith, YCC, EOD 6/4/84-8/4/84

The only personnel change that occurred in 1984 was the conversion of Sherwood Lundgren from a Biological Aid, GS-4, to a Laborer, WG-2. Several temporary employees were utilized in 1984 and completed a wide array of duties. The following chart depicts the Kulm Wetland Management District's staffing pattern for the past five years.

	Permanent			
	Full Time	Part Time	Temporary	Total FTE
FY 84	5	1	4	7.3
FY 83	5	1	4	
FY 82	4	2	6	
FY 81	3	3	5	
FY 80	3	3	7	

A personnel audit was completed by Regional Office staff in June, 1984 to determine if correct classifications and grade levels were being utilized at the station. Four of the six permanent staff were determined to be undergraded. Two of these discrepancies have been rectified by this office but nothing has been done for the assistant manager or the manager and no word has been heard since the audit was conducted.

2. Youth Programs

Our YCC program was expanded this year to 5 YCC'ers and an adult group leader. All were hired from the local community. The group leader is a local high school teacher and coach with the Kulm High School; experienced in supervising and directing young adults. This year's accomplishments by the YCC included building seven miles of fence, repairing several miles of existing fence, inspected and posted boundaries, assisted in the construction of a concrete wash rack for vehicle cleaning, building of a tire and tool racks, built a storage room for firefighting equipment, put in a cattle guard (photo 8) and various office duties.

Photo 8. YCC installing cattle guard at Mundt Lake WPA, 6/84-JWJ.

3. Other Manpower Programs

Two biologists and one general labor position were utilized as temporary workers this year. Our biologists completed several major tasks such as prescribed burning, waterfowl pair counts, fence repair, predator trapping, Rip Carding, nest dragging, land inventories and posting WPA's. Our summer laborer was envolved primarily with force account farming, putting up fence corners, rip-rapping dikes, roadside mowing, hauling gravel for shop site improvements and construction activities. We hope to increase the use of summer labor if funds can be found and FTE limits aren't so restrictive.

4. Volunteer Program

The Student Conservation Association (SCA) Program to recruit volunteers was utilized for the first time this year. We recruited two volunteers, both with degrees in Biology or related fields. Costs involved with the program included a subsistence payment ($35/week) and transportation to and from their residences to the headquarters on their start and end dates. The program is cost shared with the SCA on 85/15 basis. The tour of duty for our volunteers was from 4/9/84-6/29/84 (twelve weeks) which cost the station a total of $2,273.57. A surplus trailer (photo 9) was obtained for living quarters which will provide cheap living space in future years. Another feature of the program is that the SCA volunteers do not go against our FTE ceilings.

Photo 9. Surplus trailer obtained to house volunteer workers, 11/84 - RAH.

5. Funding

The Kulm Wetland Management District, as described in the annual report of lands under control of the U.S. Fish and Wildlife Service, compiled by the division of Realty, is listed as the largest fee title Wetland District in the country. In this same report it shows the Kulm District to be the nation's fourth largest in wetland easement acres. Fee and easement lands need continual monitoring, maintenance and management; which along with needed equipment and manpower, requires a healthy budget. Stations like the Kulm Wetland District and many others throughout North Dakota are not famous for their elaborate visitor centers, guided tours, or unique displays, but we do have species of special emphasis, the largest production of waterfowl in the continental United States, and large acreages of land to intensively manage for waterfowl production. This production, maintenance and preservation of wildlife is the bottom line in regard to National Wildlife Refuge objectives, but often North Dakota stations are on the bottom when it comes to money and manpower.

We in the prairie pothole country of Region 6 are under increased demands to produce more waterfowl, increase effectiveness of our surveys, and perform intensive management with a staff and budget that is comparably small when compared to other regions. North Dakota is the premier state for waterfowl production but it is on the other end of the spectrum when it comes to funding and manpower ceilings. The Kulm WMD has one of the smallest budgets in ND which limits land/wildlife management, site visits, surveys and surveillance. We do not wish to belabor the point, but funding is necessary to continue or improve these activities.

The following chart depicts the funding level within the Kulm WMD for the past 5 years in thousands:

	12XX	68XX	ARMM	28XX
1984	185	9	53	55
1983	185	10		
1982	163			103
1981	171			
1980	150			67

6. Safety

Assistant Manager Roger Hollevoet coordinated a defensive driving course for personnel at Long Lake NWR, Arrowood NWR, Valley City WMD, Kulm WMD, Valley City National Fish Hatchery, and Northern Prairie Wildlife Research Center personnel. It was a good course with a good turnout and all personnel received their defensive driving certificate.

This was the year for implementing all roll over protective structures (ROPS) on all station equipment. All equipment requiring ROPS at the station were transported to Minot, ND for construction and/or proper testing of the ROPS. One old IH dozer we had was surplussed as it did not have proper protection and wasn't worth fixing.

No lost time accidents occurred this year and the only reportable accident is when Bio. Tech. John Jones backed a pickup into another FWS pickup during a stressful day. Damage was very minimal.

A station audit was completed by R.O. Plenert and Duncan which included a safety audit. All systems checked out OK and deficiencies were corrected.

Several station safety meetings were held throughout the year and safety orientation was given to all temporary employees, YCC'ers and volunteers. Station safety meetings topics included:

January - Defensive Driving
Federal Employees Compensation Act
Seat Belts
February - Safe Driving Techniques for Equipment and Cars and How to Act/React
March - Vehicle and Driver Limitations
April - Safe Operation of Farm Tractors
May - Chain Saw Safety
June - Vehicle Maintenance and Care
July - Guarding against Back Injury
August - Heavy Equipment Operation and Safety
September - Driving Skills and Awareness
October - Cooperation and Communications Needed for Safety
November - Safe Winter Driving
December - Hypothermia

7. Technical Assistance

Technical assistance was given to several landowners on two subjects - prescribed burning and cattail control. A few landowners are interested in burning old ungrazed pastures to revive them but are afraid to use fire. A lot of landowners were given advice concerning cattail control, how it was hard to accomplish, and what measures could be done to lessen their problems.

Assistance was provided to the Marie-Victorian Bird Watcher Club of Canada regarding refuge information, wildlife habitat management, public use, planning, administration, recreation, equipment and maintenance.

F. HABITAT MANAGEMENT

1. General

Fee lands within the District are diverse and well interspersed. This desirable mixture of wetland types, soils, and upland cover types creates habitats very desirable to waterfowl, furbearers, big game, small game and non-game species. The primary objective of the wetland district is waterfowl/wildlife production which demands inventory of the habitats, maintenance and/or preservation of these habitats, attempted control of limiting factors, enforcement of laws and statutes and implementation of proven and new wildlife/habitat management techniques. Typical management activities include burning, grazing, haying, mechanical and/or chemical treatment and seeding. The use of these techniques vary from year to year depanding on weather, biological preference, staff views, priorities, and RO ideas. A five year summary of typical management techniques used in the District is outlined in the following table.

KULM WETLAND MANAGEMENT DISTRICT ACTIVITY SUMMARY, 1980-1984

	1980	1981	1982	1983	1984
Grazing (acres)	3734	5313	4539	2783	2804
Haying (acres)	404	536	521	323	796
Farming (acres)	2065	1345	1548	1182	626
Burning (acres)	0	75	335	286	689
Fencing (miles)	42.25	22.75	17.25	13.1	7.00

The native biotic community in the District is composed of the eastern mixed-grass prairie or transition grassland and the mixed-grass prairie. Local tracts of tall-grass prairie are also present in naturally drained lowlands, north and east facing slopes and in natural swales. Typical tall-grass and transition grassland prairie species consist of big bluestem, switchgrass, Indiangrass, prairie dropseed, little bluestem, side-oats grama, Canada wildrye, slender wheatgrass, needle and thread, blue grama, prairie junegrass and green needlegrass. In the western part of the District in the mixed-grass prairie we will find blue grama,

needle and thread, green needlegrass, prairie junegrass, western wheatgrass and needleleaf sedge. WPA areas where native grasses have been previously disturbed now contain dense nesting cover (DNC) or tame grasses. The DNC is composed of tall wheatgrass, intermediate wheatgrass, and alfalfa. The tame grasslands are composed of smooth brome, Kentucky bluegrass, sweet clover, alfalfa, and crested wheatgrass in varying compositions.

The wetland community consists of a variety of palustrine and lacustrine types with water regimes from temporary and seasonally flooded to semipermanent and permanent. Typical wetland vegetation found throughout the District's wetlands include smartweed, sedges, whitetop, cattail, common reed, bulrush, spikerush, coontail, pondweed and duckweed.

A recent inventory of the District's cover types on fee land can be found in the following table.

KULM WETLAND MANAGEMENT DISTRICT - LAND INVENTORY (Acres)

	Logan	McIntosh	LaMoure	Dickey	District Total	
Wetlands:					Acres	Percent
Type I	91	180	37	62	370	1
Type III	627	871	782	587	2,867	7
Type IV	1,804	4,483	488	1,577	8,352	20
Type V	1,288	2,226	277	1,088	4,879	11
Wetland Totals	3,810	7,760	1,584	3,314	16,468	39%
Uplands:						
DNC	1,194	2,730	1,187	1,410	6,521	16
Tame grasses	1,943	2,992	1,003	1,252	7,190	17
Native grasses	3,366	3,304	719	2,798	10,187	24
Native seeding	140	100	207	339	786	2
Cropland	150	290	79	66	585	1
Woodlands	51	226	21	30	328	1
Upland Totals	6,844	9,642	3,216	5,895	25,597	61%
TOTAL ACREAGE	10,654	17,402	4,800	9,209	42,065	100

Note: 288 meander acres were not included.

2. Wetlands

One of the primary means of wetland management in the Kulm District is through wetland preservation and letting nature's wet/dry cycles manage the basins; unfortunately we have had many dry cycles lately. Very little wetland management is accomplished in this portion of the prairie

pothole region using water control structures. We have continued our wetland renovation and creation activities by building small dams (photo 10) or removing silt from wetlands. The following list summarizes this year's wetland construction activities.

WPA	Activity
Kautz (156)	Built up dam, installed two culverts, riprapped
Meidinger (436)	Built up dam, riprapped
Krueger (23a)	Cleaned out vegetation and silt on two wetlands
Krueger (23a)	Built one small dam
Cornell (15)	Built one dam, riprapped

Photo 10. Wetland created by building a dike with overflow culvert to provide pair ponds and brooding areas 11/84 - JWJ.

Man's activities on the land has greatly changed the natural cycles influencing wetlands and hence the appearance and values of the basins. The heavy use of chemical fertilizers, little residual cover on the uplands, high runoff rates, and poor waste treatment around feedlots or towns is altering many of our wetlands; creating wetlands with high silt loads, chemical loads and the problem of cattail or emergent vegetation choking out the wetland basin (photos 11,12). This unnatural

succession process lowers the value of the wetland for waterfowl and creates a lot of management nightmares for the wildlife manager. In 1984 we have intensively grazed wetlands, burned wetlands, hayed the basins and sheared cattails on ice; all with limited success. All these techniques remove the cattails, allowing for greater waterfowl use, but unfortunately these techniques are short lived as cattails move in quite rapidly.

Photo 11. Wetland basin at the Lee WPA in 1969.

Photo 12. Same wetland basin at the Lee WPA in 1984, now choked with cattails, 10/84 - RAH.

We did have good success on the Lee WPA when we removed cattails with a cat during the winter months. The basin was dry so the stalks were sheared off at the silt line. The following spring put three feet of water in the basin and there is no sign of a cattail in the openings one year later (photo 13).

Photo 13. Opening created in cattail choked slough using dozer in dry wetland basin, Lee WPA, 6/84 - RAH.

We are also trying a little experiment this year on three different cattail choked basins. Basin #1 was just fall burned, basin #2 was fall burned followed by a mowing of the burnt stalks and basin #3 was fall burned followed by a mowing of the stalks, and then will be spring crowd grazed (photo 14, 15, 16). We hope this latter treatment will be severe enough to really set back the cattails and open up the wetland long term for increased waterfowl use.

Photo 14. Cattail choked wetland, Hille WPA, 5/84 - RAH

Photo 15. Burning same choked wetland, Hille WPA, 11/7/84 - DAL

Photo 16. Mowing burnt cattail stalks at Hille slough after freeze up, 11/84 - SCL

3. Forests

There are about 328 acres of woodland scattered throughout the District's fee lands. Most of these are in the form of scattered woodlots, old farmsteads and shelterbelts. No specific management occurs on these areas, other than issuing occasional special use permits for firewood purposes. We have planted some shelter belts around our shop site and we continually cultivate these areas along with contracting weed badgering services for within the row weed control.

4. Croplands

Cropland management in the district consists primarily of converting decadant DNC, old stands of tame grass or go back lands into a good, somewhat permanent stand of herbaceous cover with the primary objective being optimal waterfowl/wildlife production. Other cropland management activities in the district involves the seeding of food plots for resident wildlife species. No fields in the district are specifically managed for migrational waterfowl feeding.

The food plot program is a small adventure and is handled through various sportsmens clubs and landowners. Some fields are done as a volunteer activity and some involve crop sharing. The total acreage involved is 82 acres on 6 WPA's but this goes a long way in the public relations department. The food plots are normally planted to corn and supply supplemental food for pheasants, Hungarian partridge, sharptail grouse and whitetail deer. The WPA's involved in food plot areas are:

WPA	ACRES
Knutson (123)	16
Maple River (11)	20
Lee, Sukut (10,151)	32
German (123a)	5
Kirschmann (18)	4
Kvigne (260)	5
TOTAL	82

The farming and establishment of herbaceous nesting cover is accomplished through cooperative and force account farming. Cooperative farming in the district this year involved 7 permittees and 504 acres of land on 8 WPA's. Most of our farming is done utilizing cooperative farming agreements but when smaller acres are involved we accomplish this by force account faming. Force account farming activity involved 5 WPA's totaling 40 acres. WPA's involved in some phase of farming in 1984 included:

WPA	ACRES	ACCOMPLISHED BY
Grabau (358)	20	Permittee
Liechty (184)	65	"
Bender (215)	92	"
Malm (29)	35	"
Boschee (368a)	89	"
Thurn (257)	59	"
Eszlinger (14,246a)	64	"
Kroll (116)	80	"
Lippert (115)	3	Force Account
Gackle (52)	18	"
Koepplin (142)	2	"
Young (353)	1	"
Patzer (250)	16	"
TOTAL	544	

The ultimate goal of farming on WPA's is to reseed the unit, develop a healthy, weed free stand of herbaceous cover and attract nesting birds that hatch successfully. The actual seeding of dense nesting cover, native grass or interseeding activity took place on 9 WPA's totaling 380 acres. Seeding was completed on these WPA's in 1984:

WPA	ACRES	BY	SEASON	SEED
Wolf (34)	60	FWS	Spring	DNC
Lippert (115)	3	FWS	Spring	DNC
Kempf (25)	70	FWS	Spring	DNC
Sackman (112)	50	FWS	Spring	DNC
Allison (259)	40	FWS	Spring	DNC
Kautz (156)	30	FWS	Spring	DNC
Malm (29)	100	Permittee	Spring	DNC
Patzer (250)	16	FWS	Fall	Green needlegrass/ alfalfa
Kautz (156)	11	FWS	Fall	alfalfa
TOTAL	380			

The last two fields listed in the above table are two new techniques tried in the District this year. The Patzer (250) WPA was seeded to green needlegrass and alfalfa. Hopefully this will provide desirable nesting cover and at the same time we hope the alfalfa will provide nutrients to sustain a healthy green needlegrass stand. The Kautz (156) WPA was interseeded with a range interseeder borrowed from the SCS. A field of brome was hayed and then interseeded with the alfalfa (photo 17).

Photo 17. Interseeding alfalfa into hayed brome field, 10/84 - JWJ.

5. Grasslands

Approximately 60% of the Kulm District acreage is upland with a grassland cover of native range, dense nesting cover (DNC) or tame grasses. The major emphasis of management consists of attempting to keep these grasslands in a condition conducive to good waterfowl production, in other words good height/density ratios and/or excellent range condition.

Management of the DNC and our tame grass areas utilize many of the same techniques. Primary methods utilized to maintain good height-density ratios are haying, hay and discing or haying and spiking, interseeding, burning and in cases where complete renovation is needed the area is broken out and farmed. Farming then prepares the seed bed for a new planting of DNC or native grasses.

The management of native grasses presents another challenge. A major problem with native rangelands within the Kulm WMD is invasion by cool season exotic grasses, primarily Kentucky bluegrass. Kentucky bluegrass is the first to grow in the spring and produces much low growing foliage. If native rangeland is left undisturbed for several years these early season plants will produce such an accumulation of litter that the growth of the native forbs and warm season grasses are severely inhibited. Thus the District's main objective of native grassland management is to suppress the growth of exotic cool season grasses and prevent excessive litter deposition which would inhibit growth of native grass species.

There are three primary management techniques used here for suppressing exotic cool season grasses within the mixed grass prairie; they consist of burning, cattle grazing, or a combination of the two.

The critical growth period for Kentucky bluegrass begins in early spring and continues for about a month. During this period green growth is accomplished through the utilization of nutrients stored in the plant's root reserves. Total removal of the green leaves at this time through fire, heavy grazing or both severely inhibits the plant's ability to regrow due to its diminished root reserves. The critical growth period for native cool season plants such as the needle grasses and wheatgrasses is approximately two to three weeks behind the exotics so they generally have the ability to regrow during the same year as the spring treatment, if the management timing is correct. There is a fine line here and we may be hurting cool season natives also. The warm season grasses such as bluestems and switchgrass are basically unmolested from these early treatments as their critical growth period starts in late May to early June.

Fall regrowth in September/October is a second critical growth period that occurs in Kentucky bluegrass. Fall regrowth is also dependent upon the utilization of root preserves. One can take advantage of the selectivity of grazing animals by fall grazing during which time the livestock will graze almost exclusively on Kentucky bluegrass while leaving the cured out native grasses alone, thereby depleting the root reserves of this exotic grass prior to the winter. Then the following spring the area can again be crowd grazed or burned to further deplete the root reserves and hopefully severely damage the plant.

The combination of a burn/graze may have some added benefits. After a burn there is a nice even regrowth of vegetation which creates a better distribution of cattle over the range, eliminating ungrazed portions. At the same time you get all the benefits of a burn which enhances the native species. This double pressure on the cool seasons puts excessive pressure on their root reserves and opens the door for oncoming natives.

7. Grazing

Uplands make up approximately 60% of the District's acreages. There are about 11,000 acres of native grasses and another 7,000 acres of tame grasses (nonDNC). Native grasses alone compose 26% of the District. This grass must be managed to promote a healthy stand conducive to attracting nesting birds and offering secure cover. One of the methods used to maintain this cover is grazing, primarily spring crowd grazing (photo 18). Other methods utilized are fall crowd grazing, fall/spring crowd grazing, burn/graze and on one 1200 acre WPA composed of all natives we used a deferred rest rotation method utilizing crowd grazing techniques.

Photo 18. Good response of warm season grasses following spring crowd grazing. Grazed May 1 - June 1, 1984. Photo in August 1984, Lee WPA - RAH.

Spring crowd grazing is normally carried out from May 1 - June 1 but dates are flexible and may be expanded anywhere between April 1 and June 15, depending on amount of litter, weather, type of exotic grasses and the permittee. Desired stocking rates should be between 1 and 1.5 aum's/acre. Lighter grazing does not produce the desired results of stunting cool season exotics and litter removal.

Burn/graze pastures are stocked lighter as the fire has accomplished complete litter removal. Burned pastures are grazed much more evenly and eliminate cattle overworking some areas and avoiding other portions of the pasture. This double hit on the cool season exotics appears to set them back very well. We have stocked these pastures at .5 to .8 aum's/acre.

Fall crowd grazing or fall/spring crowd grazing is used minimally but seems to be effective on cleaning up severely matted pastures. Again heavy stocking rates in the fall should be incorporated.

Grazing treatments totalled 2804 acres on 27 WPA's in 1984. This brought in a total of $17,919.93 in receipts based on $6.50/aum.

The following chart shows the units grazed and the resulting stock rates. It is crucial to keep in touch with the grazing cooperator to make sure the 1 AUM/acre rate is achieved. We have found that many of the cooperators traditionally stock our pastures light, an unbelievable phenomenon as their own pastures are normally slicked clean.

WPA	ACRES	#ANIMALS	DATES	AUM's	STOCKING RATE AUM's/AC
LaMoure Co.					
Enzinger (3)	60	42 c/c, 2 bulls	5/1-6/9	58	.97
Logan Co.					
Mayer (408)	63	8 cows, 60 yrlgs	5/1-6/15	68.9	1.1
Koskiniemi (29)	62	84 c/c	5/18-6/6	56	.9
Moldenhauer (384)	45	45 c/c	5/1-6/1	45	1.0
Mundt (75)	133	50 cows, 75 yrlgs	5/1-6/15	146.9	1.1
Kautz (156)	28	23 yrlgs	5/15-6/27	24.2	.9
Muonio (109)	60	35 cows, 20 yrlgs	5/-6/10	68.3	1.1
Larson (12)	140	94 c/c	5/17-6/18	100.3	.7
Knecht (397)	58	58 c/c	5/2-6/2	58.	1.0
Brinkman (173)	129	105 c/c	5/3-6/18	161	1.2
Hunnel (11)	62	62 cows, 21 yrlgs	5/1-6/8	96.9	1.6
Wilen (84a)	140	105 c/c	5/1-6/10	132.6	.95
Dickey Co.					
Lazy M (340)	249	170 yrlgs	5/10-8/31	201.44	.81
Lee (28)	95	94 yrlgs	5/2-6/1	71.	.75
McIntosh Co.					
Bender (215)	110	44 c/c, 2 bulls	4/15-6/15	96	.9
Hoffman (121)	56	57 c/c	5/16-6/21	70	1.25
Dalke (65)	125	80 c/c	5/13-6/25	117	.9
Weisz (20)	35	47 steers	5/2-6/2	40	1.1
George (135a,263a)	70	116 yrlgs	5/1-6/1	87	1.24
Meidinger (436)	50	80 yrlgs	5/3-6/10	76	1.5
Kesselberry (203a)	169	117 c/c	5/7-6/20	175	1.0
Marzolf (87)	125	90 c/c	4/1-6/10	158	1.3
Wolf (176)	129	100 c/c	5/18-6/8	73.3	.6
Fey (144)	150	100 cows	9/15-11/1	209.3	1.4
TOTAL	2,343				

NORTHERN PRAIRIE WILDLIFE RESEARCH CENTER's GRAZING STUDY (See Section D.5)

WPA	ACRES	ANIMAL UNITS	GRAZING SYSTEM
Geiszler (210)	92	26.25	Season Long
Geiszler (210)	67	48.75	Fall Crowd
Rutschke (362)	58	67.5	Fall Crowd
Erlenbusch (12)	86	25.	Season Long
Lazy M (340)	71	19.55	Season Long
Lazy M (340)	87	67.15	Fall Crowd
TOTAL	461		

8. Haying

Haying is listed as a taboo in many wildlife management books but if delayed past normal nesting dates and performed in the right fields it can be an effective tool for rejuvenation of grassland habitats (photo 19).

Photo 19. Immediate response of alfalfa in hayed DNC field. Hayed 7/10/84, photo 8/25/84, Berlin Church WPA - RAH.

Haying activities in the District are normally performed in weedy fields, heavily littered DNC fields, tame grasslands or some native stands. Many times we ask cooperators to hay fields using sickle bars and rakes for a complete cleanup of litter as opposed to using a swather. Most of the haying is accomplished through Special Use Permits.

In addition to haying alone we will spike or disc the field in order to break up choked root systems, aerate the soil, add humus, and plant some of the seed produced in the field. This discing or spiking is often followed with a drag or a harrow. This seems to spur new life into decadant DNC fields and tame grasslands (photo 20).

Photo 20. A decadent DNC field hayed and disced in July 1983 now a robust DNC field in summer 1984. Ziegenhagel WPA - RAH.

A total of 796 acres was hayed in 1984. This is 473 more acres than the previous year. These 796 acres of hay yielded $2,417.50 in receipts. On some units there is no charge for the hay if it is exceptionally weedy or if the cooperator discs or spikes the field following haying. A list of WPA's hayed in 1984 is as follows:

WPA	Cover Type	Acres	Cost
Dickey Co.			
Young (353)	Wormwood/DNC	5	N/C
Wishek (24a)	Tame grass/natives/alfalfa	26	Disc/drag
Graham (31)	Tame grass/natives	11	$3.00/acre
Herman (374)	DNC/wormwood	24	6.00/acre
Hille (14b)	DNC	16	4.00/acre
Gruneich (359)	DNC/wormwood/mustard	18	7.00/acre
Klettke (304a)	DNC	17	5.00/acre
Ernst (354)	Type III wetland	3	N/C
McIntosh Co.			
Dewald (100a)	Tame and native grasses	31	3.50/acre
Meidinger (229,436)	Natives/wetland	38	2.50/acre
Berlin Church (130b)	DNC	12	7.00/acre
Mund (133)	Wormwood/native seeding	36	2.50/acre
Jenner (289,239)	DNC/wetland	28	3.50/acre

George (263a)	DNC	29	Spike/drag
Bollinger (214a)	DNC	19	4.50/acre
WIC (214a)	Tame grass/alfalfa	35	4.50/acre
Ziegenhagel (65a)	Tame grass	33	4.00/acre
Berlin Church (10a)	Alfalfa/weeds	3	6.00/acre
Rothfusz (257a)	Tame grass/alfalfa	30	5.00/acre
Wolf (56,18)	Brome/natives/wetland	36	3.50/acre
Klein (33)	DNC	26	Spike/drag
Ziegenhagel (281)	Bluegrass/DNC	70	Spike/drag
Logan Co.			
Moldenhauer (384)	Quack/natives	22	N/C
Knecht (397)	Type III wetland	10	5.00/acre
Abell (145)	Brome/alfalfa	60	4.00/acre
Schmidt (336)	DNC	25	4.00/acre
Mund (143)	DNC/brome	12	5.00/acre
Fandrich (52)	Brome/alfalfa/native	15	4.00/acre
Miller (171)	Natives	22	5.00/acre
Muonio (109)	Brome	24	4.00/acre
Knecht (397)	Wetland	10	5.00/acre
LaMoure Co.			
Allison (259)	Wild Oats/DNC/wetland	30	N/C
Cornell (15)	Brome/bluegrass/native	20	4.00/acre
	TOTAL	796	$2,417.50

9. Fire Management

Prescribed burning activities have been increasing in the Kulm District from 0 acres in 1980, 75 acres in 1981, 335 acres in 1982, 286 acres in in 1983 to a new high, 689 acres in 1984.

Prescribed burning is currently utilized on approximately four to ten areas per year within the district. Future management of the district's grasslands and wetlands using fire is to be expanded. Approximately ten to fifteen units will be maintained annually with fire.

Prescribed fire is used as a management tool to sustain or improve uplands and wetlands for waterfowl/wildlife production and maintenance. Fire is utilized to reduce litter, improve stand height/density, recycle nutrients, alter plant species composition, create openings in choked wetlands, increase seed production, aid in weed abatement, reduce fuel levels, aid in fighting wildfires, reduce competition in new seedings, etc. In a nutshell, prescribed burning is utilized for rejuvenation, improvement, and maintenance of the district's native grasslands, tame grass, DNC, and wetlands in order to meet the station's objectives (photo 21).

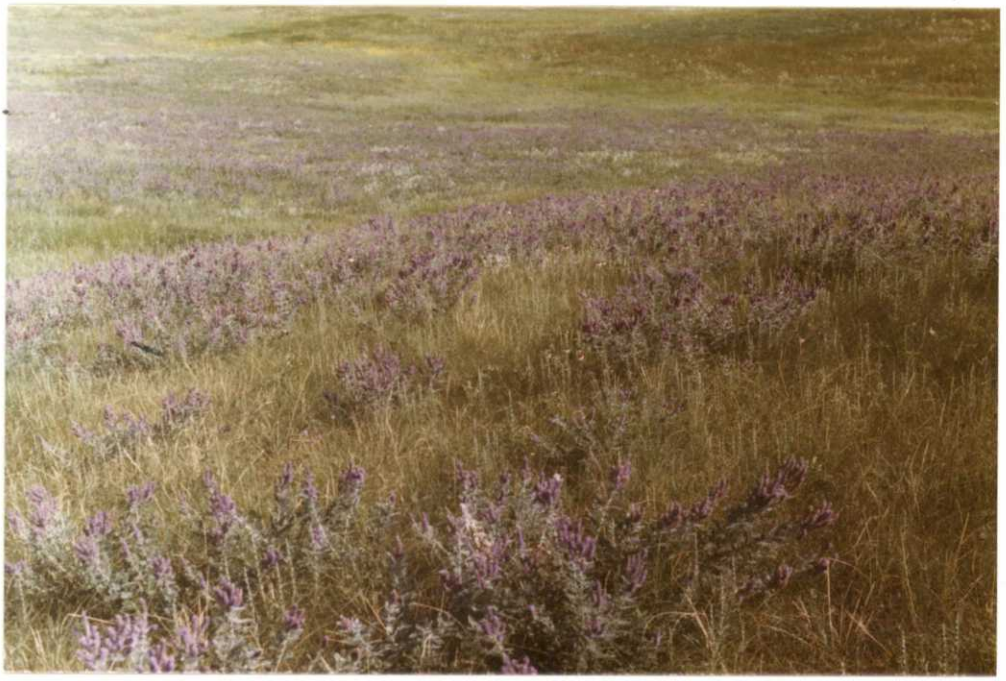

Photo 21. Excellent response of prairie wildflowers following spring prescribed burn, Cornell WPA, June 1984 - JWJ.

Areas burned consist of both upland and wetland sites. Burning is utilized on native grassland tracts that have become decadant or choked and matted with residual growth, areas being invaded by cool season exotics, sites planned for harvesting of seed, and areas that need an overall improvement in height/density ratios and nutrients (photo 22). Burning in DNC, (photo 23) tame grasses, and recently planted fields is to remove excessive litter, control noxious weeds, enhance stagnant stands, and remove unwanted competition from pioneering annuals.

Photo 22. Backfiring to build blacklines at the Hille WPA which was heavily littered with residual vegetation, 11/7/84 - DAL

Photo 23. DNC which was burned in early April, excellent response showing good height/density of grasses for upland nesters, Lee WPA, Aug. 1984 - RAH

Wetlands are burned to open the wetland basins and alter species composition; often in combination with another tool such as mowing, grazing, or discing. Wetlands burned are primarily cattail choked basins (photo 24). The majority of these basins are types III & IV (PEM1C and PEM1F).

Photo 24. Cattail choked basins produced long flame lengths and a big puff of smoke resulting from years of fuel build up. Lee WPA, Dec., 1984 - LDW.

No wildfires occurred on district lands this year. Close coordination is kept with the local fire department as the assistant manager is a member of the department.

There were eight prescribed burns conducted in the district in 1984 on 689 acres. The following table lists this year's burn areas:

WPA	Time of Burn	Cover Type	Acres
Lee (10)	Spring	Brome/DNC	105
Maple River (11)	Spring	Quack/natives	110
Cornell (15)	Spring	Bluegrass/natives	168
Sackman (112)	Fall	Bluegrass/natives	10
Hille (228)	Fall	Natives/type III wetland	80
Patzer (250)	Fall	Type III wetland	1
Boschee (368)	Fall	Type III wetland	45
Lee (10)	Fall	DNC/Type IV wetland	170
		Total	689

10. Pest Control

The Kulm WMD is required by state law to control noxious weeds on its fee title areas. The main emphasis has been controlling leafy spurge, followed by Canada thistle and absinth wormwood.

Thistle can be fairly widespread throughout the district and wherever disturbed land is left untended, thistle tends to grow. Thus the main thistle problem occurs in newly seeded fields where DNC or native establishment takes one or more years. Since a good stand of DNC will generally crowd out any thistles present, the district does not attempt any control unless a complaint is lodged by a neighboring farmer. When a complaint is received the thistle patch is usually mowed prior to seed ripening. This prevents the spread of seed to neighboring private lands and generally satisfies the neighbors. Once DNC is established, thistle control is no longer necessary.

Leafy spurge is a much more tenacious weed and provides the biggest control headache. Left unchecked it can crowd out DNC, massively invade native rangeland and subject the government to verbal abuse by neighbors and county officials. The primary control of this plant has been to spray with Tordon 22K, 2,4-d, or both in mid-June, just prior to seed ripening with a follow-up spray in the fall to kill new seedlings. Since most areas of spurge infestation are small patches, Tordon is applied via a hand sprayer. This gives excellent control and restricts the kill to individually selected spurge plants. Even though a complete kill occurs in any given year, areas of known spurge infestations are checked annually as spurge seeds can be dormant and germinate up to eight years after the seeds are in the soil. Annual control is normally required, but in most cases the size of the spurge area is getting smaller. An average of 1.5-2.0 man months is spent conducting spot spurge control on 35 WPA's.

Absinth wormwood is on the increase and combatting this is usually accomplished with 2,4-D in addition to using fire and mowing techniques.

Two quack fields were sprayed with round-up this year, a 60 acre field at the Wolf WPA and a 16 acre field at the Moldenhauer WPA. The Wolf tract has been reseeded to DNC and the Moldenhauer tract needs further weed control. Quack was also controlled at the Sackman WPA in a newly seeded DNC field using a WIC herbicide applicator.

Total chemical use this year was 10 lbs. of tordon 2K, 15 gallons of Tordon 22K, 15 gallons of round-up, 35 gallons of 2,4-D and one gallon of pramitol.

In addition to control of weed problems 34.61 miles of roadsides were mowed this year in accordance with township regulations.

Other pest control consisted of limited trapping for raccoons and skunks on select WPA's.

13. WPA Easement Monitoring

Easement surveillance flights were conducted twice in 1984, once in April and once in November. Spring flights picked up a lot of violations that may be overlooked during fall flights. As a result of the double flights we had a large number of ground checks to make, numerous contacts and a large backlog of cases to handle. Other reasons for the increase in violations is that the farmers are growing early maturing crops and of course the PIK program. As a result the farmer has a lot of time on his hands in the fall so they start ditching to get that water off the land. A summary of 1984 violations follows:

Easement #	County	Activity	Status of Case
126x	McIntosh	Drain, fill	Open
128x,1	McIntosh	Fill	Open
68x	McIntosh	Fill	Open
300x	McIntosh	Fill	Open
286x	Dickey	Fill	Open
197x	Dickey	Fill	Open
248x	Dickey	Fill	Open
126x	Dickey	Fill,Burn	Open
189x	Dickey	Drainage	Open
180x	Dickey	Drainage	Open
155x	Dickey	Irrigation pumps, ditches	OPen
109x	Dickey	Drainage, fill	Open
143x	Dickey	Drainage	Open
63x	Dickey	Drainage, burn	Open
89x	Dickey	Drainage	Open
141x,1,2	Dickey	Fill, concentrating water	Open
332x,1-4	Dickey	Drainage	Open
216x	Dickey	Drainage	Closed
303x	Dickey	Drainage, fill	Closed
301x	Dickey	Drainage	Closed
219x	Logan	Fill, pumping, 3 tile drains, ditching	Closed
110x,1-3	Logan	Drainage, fill	Open
350x	Logan	Drainage	Closed
402x	Logan	Drainage	Closed
221x	Logan	Drainage	Open
272x	Logan	Drainage	Open
289x	Logan	Fill	Open
212x,1-3	LaMoure	Drainage	Closed
212x,1-3	LaMoure	Drainage	Open
212x,4	LaMoure	Drainage	Open
221x,1	LaMoure	Drainage	Closed

198x,1-3	LaMoure	Drainage	Open
140x	LaMoure	Drainage	Closed
74x	LaMoure	Drainage	Closed
93x,1-5	LaMoure	Drainage	Open
178x,1-2	LaMoure	Fill	Open
119x	LaMoure	Fill, drainage	Closed

TOTAL - 38 Violations

The easement load has grown rapidly and with manpower limitations to perform law enforcement duties and continue refuge operations our case load is getting ahead of us.

Several unique cases occurred this year. We had everything from ditches covered with manure, irrigation pumps, dewatering pumps, tile drains, building weirs, officers threatened with shotguns, large dikes built to keep water off, accused of starting a wildfire while watching a violator fill ditches (the fire started a mile away), people hiding in their houses to avoid us, plus all the normal ditching and filling activities. (photos 25-30). We had a record thirty eight violations this year and this was preceded by approximately 90 ground checks. We do not know when this unauthorized activity is going to subside but in the meantime we will have to do the best we can with the officers available.

Photo 25. A melting rockpile? No, a new dimension in easement monitoring in the Kulm WMD. This is a camouflaged exit of a tile drain destroying a large type IV wetland protected by easement. Something to be aware of during surveillance in the prairie pothole region, 5/84 - RAH.

Photo 26. A closer look at the same rock pile shows the tile drain exit which is efficiently draining the wetland, 5/84 - RAH.

Photo 27. Another type of tile drain exit; try spotting this from the air when flying easements. Nothing but a wet spot draining into a natural drainageway. Violator had to excavate all the tile and remove it, 5/84 - RAH.

Photo 28. Dike constructed to hold water out of the basin. The left side was then drained. A fill/drain violation. Violator had to remove entire dike and fill ditch, 5/84 - JWJ.

Photo 29. Floating pump rig to drain water from protected wetland; not easy to spot from the air, 5/84 - JWJ.

Photo 30. Collapsible pipe heading over the hill to facilitate drainage from floating pump, 4/84 - JWJ.

G. WILDLIFE

1. Wildlife Diversity

Most of our larger units contain a variety of cover types normally well interspersed, avoiding large monotypic blocks of cover. This is a general wildlife management technique which lends itself to a diversity of wildlife.

2. Endangered and Threatened Species

Bald eagles were the only endangered species observed by staff members this year. A list of sightings is as follows:

Date	# and Age	Location
3/16/84	1-Immature	Hille WPA
10/23/84	1-Immature	Geiszler WPA
10/26/84	1-Adult	Carlson WPA
10/28/84	1-Immature	Rutschke WPA
11/5/84	2-Adults 1-Immature	East of Napoleon
11/6/84	3-Adults	Green Lake
12/2/84	1-Adult	Dalke WPA

3. Waterfowl

Major spring migration started early with staff observing mallards at the Lee WPA as early as March 14, 1984. The main movement of ducks ranged from the first week through the middle of April. Significant fall migrations occurred for whitefronts and Canadas 10/14/84-10/17/84. Record numbers of snows moved into the Kulm area on 10/24/84-10/30/84. Numbers of snows in the entire district peaked at approximately 200,000-300,000 birds. Most of the district (excluding large lakes) was froze up by the end of the first week of November.

Pair counts were continued this year utilizing two survey methods; the 4 square mile survey (5 blocks) and the Random Quarter Section Survey. Production estimates from these counts is as follows:

MODEL* PREDICTIONS OF RECRUITS PRODUCED
UTILIZING THE 4 SQUARE MILE SURVEY TECHNIQUE - KULM WMD

Species	Private Land	Easement Land	Federal	Total
Mallard	13,944	2801	686	17,431
BWT	55,489	9783	3263	68,535
Pintail	21,378	4180	1290	26,848
Gadwall	30,624	4863	1689	37,176
Shoveler	18.709	2977	1036	22,722
Total	140,144	24,604	7964	172,712

*Note - Model used average wetland conditions in calculations rather than good.

PRODUCTION ON FEDERAL WPA LAND (18% PRODUCTIVITY RATE)
UTILIZING THE RANDOM QUARTER SECTION COUNT - KULM WMD

Species	Estimated Total Ducks Produced
Mallard	1417
Pintail	592
Gadwall	720
Blue-winged Teal	1948
Green-winged Teal	29
Shoveler	419
Redhead	930
Canvasback	108
Ruddy	251
Widgeon	7
Scaup	123
Total	6544

PRODUCTION ON FEDERAL WPA LAND
UTILIZING THE RANDOM QUARTER SECTION COUNT (45% PRODUCTIVITY RATE) -
KULM WMD

Species	Estimated Total Ducks Produced
Mallard	3542
Pintail	1480
Gadwall	1801
Blue-winged Teal	4870
Green-winged Teal	72
Shoveler	1048
Redhead	2325
Canvasback	270
Ruddy	626
Widgeon	16
Scaup	308
Total	16,358

The predictions from the 4 square mile count and the 45% productivity rate random quarter count ran pretty true for all species but the mallard-interesting?

Summer Canada goose populations appear on the upward swing; no counts or production estimates have been attempted.

Relevant management activities performed for waterfowl production within the district include:

- Submission of nine DU/FWS cooperative agreements for waterfowl management, two of which have been approved
- Put up 46 nesting baskets, 18 nesting bales and 2 goose tubs (photos 31-32).
- Began construction of electric predator fences at the Bovey WPA and West Island WPA (photo 33).
- Completed an island and peninsula inventory to select priority sites for management.
- Initiated nest dragging activities within the district to evaluate nest success.
- Conducted predator removal activities at selected WPA's.
- Manipulated cover types to improve habitat on approximately 5200 acres.

Photo 31. Volunteer worker Livingston putting up a nesting basket to aid in predator free nesting, 6/84 - SP.

Photo 32. Mammalian predators are not commonly found harassing nesters using nesting bales. We have found up to 3 nests per bale, 5/84 - SP.

Photo 33. Initial construction of electric fence at Bovey WPA using 1" mesh buried one foot in the soil and to a height of 5 feet. Electric wires will be placed directly in front and on top, 10/84 - RAH.

4. Marsh and Waterbirds

Little or no survey work has been done on these species in the past. Until demand warrants, only incidental information can be taken on a district of this size. Our volunteers began an initial search of nesting colonies on 5 WPA's to gain some information regarding these species. Eared grebes, black-crowned night herons, and cormorants were the most frequently observed species. Several other species were also observed. We plan to expand our information on colonial nesting species if manpower is available.

5. Shorebirds, Gulls, Terns, and Allied Species

Our volunteers also kept records on these groups of species while monitoring WPA's. Frequent species observations were made on black terns, avocets, Wilson's phalaropes, and common terns.

6. Raptors

Two burrowing owls were observed by staff members this year, one at the Geiszler WPA on 7/14/84 and one on the Knecht WPA on 7/31/84.

We had a sizable hawk migration through the district this year in early October.

The great horned owl population must be at a high peak as we are getting numerous complaints about the bird. Nearly every grove of trees has an owl and they are evidently killing all the farmstead turkeys, chickens, etc. (it's always something). A lot of nests were observed this spring (photo 34).

Photo 34. Great horned owl population appears to be growing, creating a lot of complaints from landowners and sportsmen, 5/84 - SCL.

8. Game Mammals

The District's WPA's are active producers of game mammals (photo 35). WPA's offer excellent cover for production and forage but are also extremely important during the stressful winter months. The limiting factors for most game mammals in North Dakota is lack of winter food and cover and WPA's offer both. Primary game produced include white-tailed deer, raccoon, red fox, mink, muskrat, coyote and badger. Mule deer occur on a few of our units.

The white-tailed deer population has soared the last few years (photo 36). Mild winters, good cover, lots of sunflowers, and corn may be the main reasons for this population boost. Triplets are a common occurrence during early summer and almost every doe has twins. Hunting success has been very high.

Photo 35. District WPA's offer excellent cover for fawning grounds, 6/84 - SCL

Photo 36. Mild winters, good cover, lots of sunflowers and corn = high deer populations in many parts of the Kulm WMD, 3/84 - EL

10. Other Resident Wildlife

Upland game bird hunting is an important sport in North Dakota. Three upland game species in the District are ring-necked pheasants, sharp-tailed grouse, and Hungarian partridge. Observation by the staff is about the only direct means we have of gauging population numbers and these are opinions only. No attempt is made to complete census on these species.

Pheasant numbers were fair-good in the drift prairie and it appears the bird is expanding westerly in isolated pockets of the coteau. Hungarian partridge are scattered throughout the District and are seen only incidentally. Sharptail numbers appear up this year with good populations in isolated areas. Two dancing grounds were located on the Krueger and Baltzer WPA's with 17 birds and 11 birds counted, respectively.

Seed corn was delivered by our staff to several sportsmens' groups to use for development of food plots. The corn was received from the ND Game and Fish Department.

12. Wildlife Propagation and Stocking

Giant Canada goose releases were completed again this year (photo 37). The birds were obtained from the N.D. Game and Fish Department as part of the Giant Canada Goose Restoration Program. Sixty-seven giants were released; the Moldenhauer WPA received 30 juveniles and 4 adults and the Brinkman WPA received 30 juveniles and 3 adults. We hope to continue this program in future years. In order to aid in the goose restoration project we have been putting up goose tubs and nesting bales (photo 38).

Photo 37. Manager West and Hollevoet releasing giant Canada geese at the Moldenhauer WPA as part of the giant Canada goose restoration program, 7/84 - DAL.

Photo 38. Nesting bale being placed on ice for nesting Canada geese and other waterfowl at the Brinkman WPA, 1/85 - JWJ.

Twenty five rehabilitated Canada geese were released by the Wahpeton zoo near our Carlson WPA in hopes of establishing some breeders in that area.

Ring-necked pheasants were released by local sportsman's groups and the N.D. Game and Fish Department at the Retzlaff and Heine WPA's in Dickey County; both sites received 50 birds.

15. Animal Control

All depradation complaints are turned over to our ADC personnel. Primary complaints center around blackbirds and coyotes.

Waterfowl production and predation is currently a hot issue in the region. The Kulm district has initiated some predation management activities on a small scale. Electric fences were constructed at two WPA's (Bovey and West Island) and predator trapping occurred at another two WPA's (Lee and Mund). Most of our predator work has been directed at skunks and raccoons but with construction of the electric predator barriers red fox will also be effected and trapped. The Red fox is an efficient predator and can kill and carry quite a load in his jaws. A red fox was observed on one of our units carrying a duck and when pursued he laid down quite a mouthful (see photo 39). He was apparently on the way to cache the food or bring it to a den site.

Photo 39. Entire contents carried in a Red Foxs' mouth at one time, quite a load of groceries. Animal was observed carring something and when startled he dropped his shopping cart contents and left in a hurry, 5/84 - SCL

The electric barrier fences are a primarily passive system of animal control to protect nesting hens and their eggs from our main predation problem species, the red fox, striped skunk, Franklin's ground squirrels, and mink. The concept is that once these animals are removed from within these "nesting refuges" in the early spring other predators that will try will be deterred from going back in by: the physical barrier (one inch mesh x five feet tall with one foot buried), the electric (high voltage-low amperage) high tensil wire offset on the side if they climb and on the top if they jump and the alkali water barrier. The goal is the safe nesting of an island without the cost of construction or cover establishment.

The West Island electric-barrier fence project is a rather unique cooperative effort. The FWS only owns the western one-third of the island (photo 40). The remainder is owned privately. We negotiated an agreement with the help of Bob Morgan of ND Game and Fish Commission and John Lokemoen of Northern Prairie Wildlife Research Center (NPWRC) to lease the land under the state habitat program.

Photo 40. Island to be developed as nesting paradise through elimination of grazing and construction of electric predator fences at land bridges to create a predator free environment, West Island WPA, 4/84 - JWJ

Ducks Unlimited has entered into agreement with us to fund materials for construction of the fence. NPWRC will include it in their Island/Point research to monitor the resulting nest success or failure. The local Animal Damage Control field agent has agreed to help us with setting up the trapping effort and instructing employees or aerial hunting if necessary. The "fun" part will be done by this station when we try to build the fence in the muck and mire this spring.

17. Disease Prevention and Control

The District made several searches on areas with past botulism problems. We were fortunate enough to find nothing. This is the third year in a row with no botulism die-offs occurring in the District; the last one occurred on Lake McKenna in 1981.

A snow goose die-off occurred in the district again this year; same place, same number and kind of birds, same time period, just one year later. A total of 1,003 dead snow geese were collected and incinerated (photo 41). Eighty per cent were adults. Last year 90% were adults. The die-off took place at Twin Lakes located 4 miles northeast of Lamoure, ND.

Photo 41. 1003 snow geese were collected and burned at the Twin Lakes die-off caused by a toxic irritant, 11/84 - RAH

Dr. Richard Stroud of the National Wildlife Health Laboratory, performed and reported necropsy results on the snow geese. Like last year, the geese had necrotic enteritis. The proventriculus of each bird had evidence of irritation on the surface. The material found in the gizzard and the proventriculus of the geese is somewhat variable. A couple of birds had corn, one had wheat and another had grass. No normal feces are present in the intestines of the birds giving the appearance that everything had been washed out.

Surfaces of the intestinal tract appear irritated and burned out. Dr. Stroud reported finding all kinds of sloughed tissue and bacteria in the gut. This is a secondary response in the gut to what has initially been taking place on the surface of the gut's lining.

Dr. Stroud is of the opinion that we are dealing with a toxic irritant. The whole gut of the birds are reamed out. The mouth of the birds are congested and red looking.

Mice were fed extracts of the contents in the bird's stomach and they died also.

Initial suspected reasons for the die-offs include: 1. atrzine on corn; 2. granulated treflan on corn; and 3. broadcasting of fertilizer pellets. Later hypothesis relates the water quality, bacteria or alkalinity, of the lake to be a suspected cause of death. The final diagnosis was necrotic enteritis and the cause (suspect) being clostridium perfringens toxin with secondary bacterial invasion of necrotic tissue.

H. PUBLIC USE

1. General

The staff meets at least annually with all county commissioners and on occasion with township boards, members of weed boards, or water management board members. Discussion normally centers around weed control, taxes or revenue payments, drainage, easements, and the good neighbor policy.

2. Outdoor Classrooms - Students

Biological Technician John Jones again participated in the Soil Conservation Service's environmental education tours. A wildlife program was presented to all seventh graders in LaMoure, McIntosh, Dickey, Logan, Ransom and Sargent counties (450 students). Waterfowl identification, waterfowl biology and the importance of wetlands in waterfowl production are the areas emphasized. This program also gives us a chance to communicate with ASCS, SCS, county agents and teachers. The outdoor classroom was located on our Lazy M WPA in Dickey county.

7. Other Interpretive Programs

Several activities occur annually which explains FWS activities and/or aid in public relations. A list of such activities follows:

- Jones acted as a science fair judge at Gackle High School
- Hollevoet and Jones participated in local hunter/safety education classes and graduated 15 students
- Jones was a guest speaker at the SCS awards banquet in Ashley
- Hollevoet gave a presentation to 65 students on FWS activities and career potentital at the Oakes Multi-vocational Center
- Hollevoet presented training sessions on fire safety and equipment
- West and Hollevoet showed several films at local Rod and Gun clubs
- Hollevoet presented training sessions on fire safety and equipment at the Kulm Fire Department

- Jones participated in the annual Lion's Club activities

- A new station leaflet was completed by West and Hollevoet and printed with RO assistance

- Hollevoet and Jones attended the ND Game and Fish Advisory meeting in Gackle, ND

- West and Hollevoet prepared several news releases

- Sixty copies of "Managing Prairie Ducks" published by the Natural History Society at Minnesota were sent to various "movers and shakers" in this District

8. Hunting

Primary hunting pressure in the district was for waterfowl, pheasants, white-tailed deer, sharptail grouse, red fox, and coyote; pretty much in that order. A great deal of hunting for these species occurs on District WPA's. Success was excellent for white-tailed deer; good to very good for waterfowl, and fair for the rest of the species.

The white-tailed gun season resulted in several nice trophies being shot on WPA's. Large bodied deer were also numerous with the largest one to our knowledge weighing in at 290 lbs field dressed.

10. Trapping

All of the District WPA's are open to trapping and most of these areas are in somebody's trapping route. Numerous red fox, muskrat, mink and skunk are taken annually along with an occasional coyote. The coyote population in the District appears to be on a drastic upswing and according to many of the trappers the red fox is good in some areas and declining in others.

17. Law Enforcement

Law enforcement in the District can be put into three categories: 1) Wetland easement contract enforcement, 2) WPA regulation enforcement and 3) Migratory bird/game law enforcement.

Wetland easement enforcement was previously discussed in section f.13. WPA enforcement usually involves trespass grazing, trespass farming, trespass haying, dumping, off-road vehicle use, vehicle trespass and destruction of government property. These types of violations require a lot of surveillance and investigation but very few tickets are written because information adequate to finalize a case is hard to find.

The verbal threats from easement violators, and the problems with tax protesters and farm foreclosures were sumitted and approved by the RO as justification for second chance vests and shoulder holsters which were purchased this year for law enforcement work.

Game law enforcement is primarily accomplished throughout the waterfowl season and occasionally during deer season. We also assist state wardens with various cases. Both high visibility and undercover techniques are employed.

An unusual high number of hunting visits took place at Dakota Lake NWR due to a television crew showing large numbers of birds in the area and hunters with good success.

A summary of violations worked on in 1984 is as follows:

Violation	Number	Fine
Illegal transportation (improper tagging)	1	$50.00
Refuge trespass	3	25.00
Hunting on Refuge	4	Pink slipped, juveniles sent to State Court
Illegal hunting of geese	1	Tried in State Court-$350.00 fine, loss of shotgun, 2 yrs. suspension of hunting
Taking deer out of season	1	Tried in State Court-$350.00 fine, loss of rifle
Trapping over exposed bait (photo 42)	1	Tried in State Court-$100.00 fine, 5 days jail-jail suspended pending no violations for 2 years
Vehicle Trespass	1	25.00
Destruction of Government property	1	$500.00 fine-suspended pending no violations for 1 yr.

Photo 42. Rough-legged hawk caught in open bait set. Violator was fined $100.00 and had 5 days in jail suspended, 10/84 - JWJ

I. EQUIPMENT AND FACILITIES

1. New Construction

Seven miles of new 3 strand barbed wire fence was constructed in 1984. Fencing is completed for habitat protection or to facilitate grazing management (photo 43).

Areas fenced in 1984 were:

WPA	# of Miles
Maple River (11)	.56
Hille (14)	1.44
Lee (10)	1.1
Roth (435)	1.6
Jenner (289)	.5
Ruff (179a)	.75
Bovey (21)	.1
Boschee (368)	.13
Logan (3a)	.26
Lazy M (340)	.56
Total	7.00 miles

Photo 43. YCC constructed 7 miles of 3 strand barbed wire fence in 1984, 7/84 - JWJ

Maintenance worker Steinmetz, our summer crews, and YCC completed several small scale force account projects, that will greatly help fulfill station needs. These new construction activities include:

- Concrete vehicle wash rack with drain (photo 44)
- Fire equipment storage room
- Upper deck storage area and shelving
- An engine hoist
- Motor stand for use in vehicle overhaul
- A concrete filled seed bed packer for field preparation
- A trailer to haul two three wheel ATC's (photo 45)
- Cattle guard and boat ramp at Mundt Lake WPA

Photo 44. Construction of vehicle wash rack at shop site, 7/84 - JWJ

Photo 45. Two new 3 wheel ATC's purchased and transport trailer designed and constructed by maintenance man Steinmetz, 4/84 - LDW

2. Rehabilitation

Rehabilitation projects on facilities required a lot of man hours and equipment. A thank you is extended to Sand Lake Arrowwood, and Tewaukon Refuges for their help in letting us borrow equipment needed to complete these jobs.

The first major job was the raising of our 30' x 60' pole barn 24" higher to allow for proper drainage. A building mover raised the building for us, then we hauled 150 loads of gravel and clay in to raise the floor and surrounding ground. This will eliminate a soup hole in the spring and frozen doors in the winter (photos 46,47).

Sand Lake dozer and operator were utilized to completely rehabilitate our firing range. The backstop was built up and the range was dug out to allow filling with gravel. Once that was completed the trail leading into the firing range was graded and graveled.

Photo 46. Arrowwood NWR graciously loaned us their modern equipment in order to accomplish site filling around our 30' x 60' pole barn, 7/84 - LDW.

Photo 47. The Kulm staff then utilized our "modern" equipment to complete the leveling and finishing touches to the new landscaping, 7/84 - JWJ.

3. Major Maintenance

Spring fence checks were completed on units scheduled for grazing treatment in 1984. This allowed us to graze 2804 acres with minimal problems.

Rock piles and junk piles were buried on several WPA units to improve aesthetics, decrease predator denning sites, increase safety and aid in weed abatement. Areas where work was completed include:

WPA	Activity
Koskiniemi (29)	Buried 13 car bodies and 1 junk pile
Muonio (109)	Buried 1 junk pile, filled in 1 well
Krueger (23a)	Buried 1 junk pile and 3 rock piles
Nelson (174)	Buried 1 junk pile
Klipfel (274)	Buried 2 foundations, filled 2 basements, buried 1 junk pile
Meidinger (436)	Buried 2 junk piles

4. Equipment Utilization and Replacement

Major fleet maintenance this year included tire replacement for most of our fleet, two clutch replacements, two windshields replaced, body work on 2 vehicles and routine safety/maintenance activities. Maintenance man Steinmetz rehabilitated several of the tail gates on our pickups.During intensive use and hard work the tailgate invariably gets beat up. New

tailgates were constructed and installed which now allows easy opening of the tailgate, better looks, and improved gas mileage (photo 48).

Photo 48. New tailgates were made for several of our vehicles by maintenance man Steinmetz to replace badly worn and non-functional tailgates, 11/84 - RAH.

Equipment replacement this year included purchase of a new Miller wire welder, a herbicide sprayer and tank, a new 7710 Ford tractor with loader and New Holland mower, two Honda Big Red ATC's, and a used International cultivator.

5. Communications System

The old office phone system consisted of one local line and that was it. This system was removed and updated with the AT&T Merlin system. Instead of phones we now have "Voice Terminals" with a local line, an instrastate wats line, and an insterstate wats line. The system has several additional features and is a real benefit to office communications, along with reducing our monthly bills. A state radio was installed in one of our vehicles this year. This gives us 24 hr. contact and has facilitated our communications with FWS Special Agents and State conservation officers.

7. Energy Conservation

A dual fuel off peak heating system was installed at our shop in December. This consists of propane and electric heating systems working on an alternating time schedule. We pay a wholesale rate for electricity during off peak hours and the system automattically switches to propane during peak electricity demand periods. We expect payback in one or two heating seasons.

All bias ply tires were replaced by sets of radial tires as they wore out. The longer life and better mileage have proved to be well worth the small difference in price.

The bar type tail gates as in the above photo are said to reduce drag and increase mileage. Three have been installed on older trucks that needed a new tail gate anyway.

J. OTHER ITEMS

3. Items of Interest

- Dale Henry, ND Supervisor, made a follow-up station inspection in May, 1984
- Marv Plenert and Marv Duncan, RO conducted a full administrative review and audit of the station in August, 1984
- The shop site had a complete energy audit done by engineering consultants in August, 1984
- GSA conducted an unannounced inspection of our office in August, 1984
- GSA conducted a fire inspection in August, 1984
- The station worked on three congressional inquiries this year in an attempt to resolve conflicts
- West, Hollevoet and Jones attended a 40 hour LE refresher in April, 1984
- Manager West missed the February project leaders meeting in Denver due to the timely arrival of his baby girl on February 27. Hollevoet attended
- West and Hollevoet attended a meeting at Arrowwood NWR on June 12 regarding island and point research and management
- Okerlund attended the Pay/Pers and FAR training in Denver in April, 1984
- A position classification audit was conducted at the station in June, 1984
- The Federal Protection Service conducted an office security inspection in August, 1984
- Steinmetz attended a one day welding course in Sepetember, 1984
- Jones received his 20 year length of service pin (photo 49)

- Fifty flax bales were donated to us from the Olin Corporation in order to line our nesting baskets.

- We loaned our backhoe to Arrowwood NWR, Long Lake NWR, and the Valley City National Fish Hatchery. It was the only backhoe available at that time with certified ROPS.

- The District 10 law enforcement meeting of the ND Game and Fish Departement was held at the Kulm WMD office on July 27.

- West and Hollevoet attended the ND Project Leaders Workshop in Minot August 27-29.

- West attended an organization meeting for cooperation on projects with Ducks Unlimited at the DU headquarters in Bismarck on October 22.

- West attended a Waterfowl Production Workshop in Jamestown December 19 and 20.

Biological Technician John Jones receiving his 20 year length of service award from Manager West, 4/84 - RAH

4. Credits

This report was written by Assistant Manager Roger Hollevoet and edited by Manager Larry West. Edna Okerlund organized and typed the report.

K. FEEDBACK

In June, 1984 a Regional Office audit committee completed a personnel audit at this station regarding position classification and grade level. As a result of the audit it was revealed that four of our six man staff were basically doing work of a higher grade position. Since that time the managerial staff has increased the pay levels of our maintenance man and our laborer in order to equalize the pay with the work. At the time of this writing, however, no word has been received regarding the outcome of the audits, if changes will be made in the other two positions identified in the audit (manager and assistant manager), or if we made the proper adjustments in reclassifying our maintenance man and laborer position.

This audit is directly tied to a larger related issue. It is a fairly common fact that many of the agencies the FWS works with have a higher grade structure than our own. Within our own agency there are also several discrepancies; we have different grade structures and funding levels within the wildlife resources division between regions, and we have different grade levels and journeymen levels between divisions of the Service. This is not in the least confusing to us in the field. We bring it up all the time, yet the door is continually shut and we are kept in the dark on this issue. We anxiously await some information out here in the field. Field personnel are an important arm of the WR division and the FWS. Please keep us informed on this personnel matter.

The second issue we would like to discuss is the handling of summer hires, personnel changes and recruitment authority at this station. We have had excellent help and guidance from the Personnel Office in these matters. The staff in personnel that help us here at Kulm, ND deserve a thank you and we will mention that Kathy Donovan has been great help many times.

BONEHILL NATIONAL WILDLIFE REFUGE

Bonehill Refuge is an easement refuge near Jud, N.D. which totals 640 acres. Its value is primarily as a staging area for snow geese and other waterfowl. It also provides habitat for broods and over water nesters such as canvasbacks. The major staging area is created by a dam constructed on Bonehill Creek. This year a leak was discovered about half way down on the earthen dam which raised some immediate concern (Photo 50). The staff responded quickly and constructed a cofferdam as a temporary means to preserve the dam. On April 25 Marshal Fox of engineering visited the site and made a video tape to take back to Denver. The incident has been turned into the RO for funding. Hopefully the cofferdam will last this spring season.

A recent land use inventory of Bonehill NWR revealed the following land use patterns:

	Acreage	Percentage
Cropland	442	69%
Pasture	113	18%
Wetland	65	10%
Domestic	20	3%
Total	640	

Photo 50. Inspecting a leak discovered in Bonehill NWR dam, 4/84 - LDW

MAPLE RIVER NATIONAL WILDLIFE REFUGE

The Maple River National Wildlife Refuge, located near Fullerton, ND, is composed of 414 acres of fee land and 712 acres of easement lands for a total of 1126 acres. The area was historically a spring and fall waterfowl staging ground for many ducks and snow geese. Over the years the spillway has deteriorated and the overflow channel or diversion channel has become choked with Silt and cattails. As a result of this water no longer moves from the Maple River into the 80 acre wetland on the property, the waterbody on which the birds staged. Since no water is moving through the channel the staging wetland has become silt laden and choked with cattails, lowering its value for migratory waterfowl. Proposals have been submitted to rework the spillway, reopen the channel and open the lake; no funds have been received to date.

The Maple River proper and the area's wetlands are used by many species of dabbling ducks. The refuge has also become a haven for ring-necked pheasants and white-tailed deer. A late season pheasant hunt is allowed on the refuge as well as an archery deer season.

Management on the unit this year consisted of a prescribed furn on 110 acres, a food plot cooperative farming agreement covering 20 acres and construction of .56 miles of boundary fence with two parking areas. A locking devise was placed on the WCS to keep vandals from removing stop logs.

A land inventory was completed by our volunteers this year; the land use patterns for the refuge are as follows:

	Acres	Percentage
Cropland	662	58%
Wetland	148	13%
Pasture	42	4%
Grassland	232	21%
Riverine	38	3%
Domestic	4	1%
Total	1126	

DAKOTA LAKE NATIONAL WILDLIFE REFUGE

Dakota Lake National Wildlife Refuge is an easement refuge on the James River near Ludden, ND. The refuge is a traditional late season snow goose staging area holding 50,000 - 100,000 geese annually. This area receives very high goose hunter use along its boundaries and nearby fields. This year there was an abnormally high number of hunters in the area because of a lot of press coverage. Law enforcement activity is high and a lot of contacts are made.

A land inventory of Dakota Lake NWR was completed by our volunteers this year. The land use pattern is as follows:

	Acreage	Percentage
Cropland	1297.4	47%
Pasture	281.4	10%
Riverine/Lacustrine	671.4	24%
Hayland	302.4	11%
Wetland	152.4	6%
Domestic Use	51.0	2%
Total	2,756 Acres	