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KULM WETLAND MANAGEMENT DISTRICT

Kulm, North Dakota

ANNUAL NARRATIVE REPORT

Calendar Year 1982

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

KULM WETLAND MANAGEMENT DISTRICT
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NATIONAL WILDLIFE REFUGE SYSTEM
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Left to right - 1, 4, 5, 6, 3

Personnel

1. Larry D. West, Refuge Manager, GS-11, PFT
2. Fran Maiss, Assistant Refuge Manager, GS-9, transferred 8/23/82
3. Roger A. Hollevoet, Assistant Refuge Manager, GS-9, PFT - EOD 11/29/82
4. John W. Jones, Biological Technician, GS-9, PFT.
5. Edna A. Okerlund, Refuge Assistant, GS-5, PFT
6. James A. Steinmetz, Maintenance Worker, WG-7, PFT
7. Sherwood Lundgren, Biological Aid, GS-4, Career Seasonal
8. Dave Rutschke, Biological Aid, GS-2, EOD 4/26/82 - 10/29/82
9. Harold Hettich, Biological Aid, GS-2, EOD 4/26/82 - 10/29/82
10. Randy Klusman, Biological Aid, GS-2, EOD 6/1/82 - 8/21/82
11. Kelly King, Biological Aid, GS-2, EOD 6/1/82 - 9/3/82
12. Gary Brovold, Biological Aid, GS-2, EOD 6/1/82 - 8/21/82
13. Rory Roloff, Biological Aid, GS-2, EOD 4/3/82 - 8/21/82
14. David Ham, YCC, EOD 6/1/82 - 8/21/82
15. Todd Schlenker, YCC, EOD 6/1/82 - 8/21/82

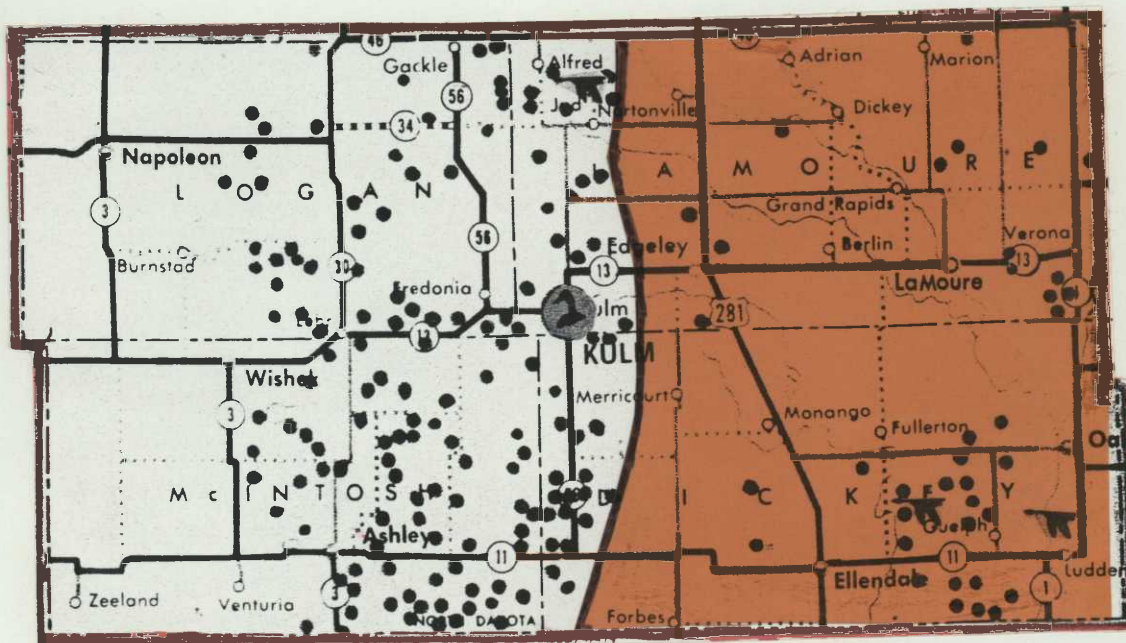
Review and Approvals

Larry D. West 4/1/83
 Submitted By Date
Wall B. Henry
 Regional Office Review Date



#2 - Summer Help - Left to Right - 9, 8, 12, 11, 15, 13, 10, 14





KULM WETLAND MANAGEMENT DISTRICT



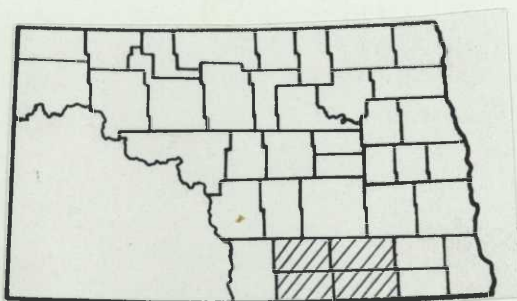
Missouri Coteau

Drift Prairie

LEGEND

-  District Headquarters
-  WPA's
-  Easement Refuge
-  Escarpment

NORTH DAKOTA



- Kulm WMD - 4 counties - 4,360 square miles
- 42,352 acres in 300 tracts on 186 WPA's
- 93,129 wetland acres under 1,307 easements

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A. HIGHLIGHTS

Wetland conditions in the Kulm Wetland Management District were much improved in 1982 after drought in 1981. (Sections B. and F.2.)

Easement violations in the district this year approximately tripled the average for the last 10 years. (Section F.13.)

Seven wetlands were restored, 902 acres were seeded for nesting cover, and 19 per cent of the district's grasslands received a burning, grazing or haying treatment. (Section F.2., 4., 7., 8., 9.)

No botulism outbreaks occurred this year! This may not sound like a highlight but if you ever had to pick up thousands of dead and decaying ducks on hot August days you'd be thankful too. (Section G.17)

Assistant Fran Maiss opted for a home on the range at Charles M. Russell National Wildlife Refuge, and new Assistant Roger Hollevoet opted for refuges over Ecological Services. (Section E.1)

A mutually beneficial land exchange on the Koskiniemi (29) WPA was finalized. (Section C. 3.)

B. CLIMATIC CONDITIONS

A very cold winter of 1981-82 hit its glory in January with 29 days of below zero temperature and the lows averaging -15° F. The coldest temperature -32° F was recorded on January 10 and February 3. The wind chill factor was reported to be -96° F on January 10. The highest temperature this year was 97° F on August 2. Temperatures during November and December were unseasonably mild.

Total precipitation for the year was 25.35 inches with 22.9 inches of rain and 39 inches of snow (2.45 inches precipitation). Significant periods of rain were May 9-16, 5.8 inches; June 6-9, 2.45 inches; July 8, 4.10 inches; October 5-7, 5.65 inches. Only 4 inches of rain fell in the 84-day period between July 9 and September 30.

C. LAND ACQUISITION

1. Fee Title

Due to the governor's refusal to approve any land sales no attempt to acquire land in the district was made in 1982. This is unfortunate, as we have been contacted by over 30 people who would like to sell the Kulm WMD about 10,000 acres. Approximately 4,500 acres would adjoin existing WPA's. The effect if any of the recent Supreme Court ruling on the U.S. Fish and Wildlife Service (FWS) buying a few high priority tracts of land in North Dakota is not known at the time of this writing. Currently the Kulm WMD is managing 300 tracts in 186 management units totalling 42,352 acres in Dickey (D), LaMoure

(LAM), Logan (L) and McIntosh (McI) counties.

2. Easements

No easements were taken in 1982 due to the prohibitive restrictions placed on them by a state law in 1977:

Six 20 year easement contracts covering 374 wetland acres expired in 1982. The only remaining 20 year easement in the district expires March 12, 1983.

Currently the Kulm WMD is administering 1,307 easements encompassing 98,129 acres more or less. The area of the scattered easement tracts that must be searched annually for wetland easement violations, is approximately 1,300 square miles of 4,360 square miles in the four counties of the district.

3. Other

A mutually beneficial exchange on the Koskiniemi (29) WPA in Logan County was completed on July 29, 1982. A 40 acre roundout (17 acres upland 23 acres wetland) was gained by the FWS in exchange for 20 acres of tame grass to Clayton and Twila Remboldt. The exchange resolved a chronic trespass grazing problem and the unsightly alternative Mr. Remboldt had come up with to prevent cattle trespass of putting a dozen junk cars into the slough.

D. PLANNING

5. Research and Investigations

Kulm NR 82 - "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 D. Kruse and James Piehl of the Northern Prairie Wildlife Research Center entered its third of seven 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 and Southern Drift Plain 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 second year of avian nesting data and third year of vegetative data were collected. This study should provide very important information effecting future management of native rangeland in the Dakotas by the FWS.

KULM NR 82 "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. District personnel monitor the amount of drainage occurring on these expired easements

3.
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 82 - "Upland Breeding Bird Communities
of North Dakota Waterfowl Production Areas in
Relation to Land Treatment

The field work for this cooperative study between Iowa State University and the Northern Prairie Wildlife Research Center was completed in 1982.

The objectives of the study are to determine the effects of three land treatment types (DNC, idled native prairie and grazed native prairie) on bird species composition and density of upland bird communities on Waterfowl Production Areas. Data on DNC and idled native prairie are being collected on WPA's within the Arrowwood WMD and data on grazed native prairie are being gathered on WPA's within the Kulm WMD.

The study is being conducted by Rochelle B. Renken, graduate student of Iowa State University with Kenneth F. Higgins of NPWRC and James J. Dinsmore of ISU as advisors.

E. ADMINISTRATION

1. Personnel

Assistant Manager Fran Maiss transferred to the Fort Peck Wildlife Station of the Charles M. Russell National Wildlife Refuge in Montana (8/23/82). He was replaced by Roger Hollevoet (11/29/82) who has worked on the Devils Lake WMD, on the Oahe Reservoir as a Land Management/Environmental Resource Biologist with the Corps of Engineers, and as a wildlife biologist at the Manhattan, Kansas and Pierre, South Dakota ES Field offices.

Maintenance Worker Jim Steinmetz' appointment was changed from career seasonal to PFT (3/21/82).

The following chart depicts the Kulm WMD staffing pattern for the past five years.

	<u>Permanent</u>		
	<u>Full Time</u>	<u>Part Time</u>	<u>Temporary</u>
FY - 82	4	2	6
FY - 81	3	3	5
FY - 80	3	3	7
FY - 79	3	1	9
FY - 78	3	1	7

2. Youth Programs

The Kulm WMD employed one non-residential YACC enrollee until the program terminated March 26, 1982. One non-residential YCC was employed June 1 to August 21, 1982. A second YCC employed by Northern Prairie Wildlife Research Center finished out the summer by working with the Kulm fencing crew after their field work was completed in early July.

3. Other Manpower Programs

Six temporary workers were employed during the summer months primarily for fencing under a BLHP project. All live near Kulm and have considerable experience at this type of work. They have become very efficient and take pride in the finished product. One rather obstinent neighbor was so impressed by their rapidity and efficiency at removing dilapidated fence and putting in a neat, tight new one that he seems to have forgotten that he used to dislike "the wildlife".

5. Funding

Fixed costs, mainly permanent salary, absorbed approximately 80% of the allotted budget after the 7% budget cut this station received on March 17, 1982. Considering that most expenditures for equipment and supplies had already been made as planned in the Annual Work Plan, we would have been in the red for spending on anything other than fixed costs by about June 1. Approval of a BLHP project for equipment and fencing rescued us via redistribution of fence material already purchased and Biological Aid salaries. Mid-year budget cuts and getting no sure word on special projects until the year is nearly gone is no way to run a railroad or a wetland district.

Another funding problem we've had is that we have just enough to fund our necessary work projects and don't have enough for orderly replacement of equipment or to handle anything unexpected. All our vehicles were purchased during BLHP and are now four to six years old. Many are well used from fencing and spraying work and replacement of one or two per year should have already begun.

The following chart depicts the Kulm WMD funding pattern for the past six years.

<u>Year</u>	<u>1210</u>	<u>CM</u>	<u>1220</u>	<u>1240</u>	<u>BLHP</u>
1982	\$161,000			2,000	\$102,860
1981	169,000			2,000	
1980	150,000				67,000
1979	126,000	16,000			186,000
1978	112,000	6,000	2,200	1,000	36,000
1977	70,000	8,000	1,000	1,000	13,000

6. Safety

The Kulm WMD had monthly safety meetings throughout the entire year and safety is also incorporated into weekly staff meetings.

One lost time accident occurred on March 7 when Assistant Manager Fran Maiss was checking nest baskets. While replacing a basket his thumb was caught between the support pipe on the basket and the support pole when he lost control of it in the wind. The shearing action of the pipes coming together split the skin on his thumb in a manner similar to facial cuts suffered by boxers. The leather gloves he wore probably prevented a worse injury. Stitches were required and he returned to work immediately.

F. HABITAT MANAGEMENT

1. General

The FWS owns in fee title approximately 16,900 acres of wetlands and 25,400 acres of upland which includes 15,100 acres-native, 6,800 acres-dense nesting cover (DNC), 2,000 acres-tame grasses and 1,500 acres-cropland.

2. Wetlands

Wetlands within the Kulm WMD are almost all natural prairie potholes where water levels fluctuate due to natural cycles and which there is no water level manipulation. Even the dams on the Maple River, Bone Hill Creek and Dakota Lake easement refuges must be managed under natural cycles at present.

Better wetland conditions for breeding waterfowl occurred in 1982 than in 1981. Estimates made of the number of wetland basins on WPA's containing water were 66 per cent during the first week of May and 97 per cent during the third week of May. This compares to only 28 per cent in the spring of 1981.

Three completely dry sloughs with at least 10 years accumulation of cattail litter were burned in October of 1981. All three were without residual vegetation after burns and had fair to good run-off in early May as in photo #3, though the water was not very deep (1 foot). Cattail is still present, but the per cent of the area covered by cattail appears to be less. River white-top and slough sledge appear to have responded favorably to this treatment and they were the most visible plants in these sloughs in 1982. The Olson (53) WPA was also chisel plowed on half of the basin approximately 4 days after the burn. Whitetop which is the preferred mallard brood rearing habitat in central North Dakota was most visible in the chisel plowed area. (Photo #4)



#3 - Shallow flooding of burned slough, Hamann (203)D, as it appeared after spring run-off. May 82. FM



#4 - Olson (53a) WPA vegetation response to burn. (Before burn appearance was similar to photo #8). Lightest colored vegetation is slough sedge, darker yellow area on far side is river white-top, scattered grey areas are cattail. Feb. 83. LDW

Only one slough burn was attempted this fall (Oct. 82, Patzer 249) as basins were too wet for a complete burn. Residual vegetation has been reported to supply oxygen to the roots and keep them alive even when flooded. NFWRC personnel have told us that 10 inches of water over the roots and no dead plant material to keep the roots alive is a general rule of thumb for killing cattails in this area.

Seven wetlands were restored by plugging ditches that drained sloughs on land subsequently purchased by the Service. These were on: Bertsch (43) - 1 dam; Mund (134) - 2 dams; Mundt (75) - 2 dams; Patzer (249) - 2 dams. Dams were riprapped with existing rock piles taken from the WPA's.



#5 - Level lines were run at the Mund (134) WPA to be certain that the check dam would not flood water through a culvert and onto private land.
June 82. LDW



#6 - Dam was constructed at previous ditch cut (left-center)
with the loan of a dozer and operator from Sand Lake NWR.
July 82. LDW



#7 - A four inch rain July 8 filled the restored wetland
and four broods were seen there on July 14. July 32. LDW

Bio. Tech John Jones began a trial on the Boschee (368) WPA to see if pair use or over water nesting would be increased in a slough with very little open water by making temporary openings. The openings were made in August with a Honda 3-wheel cycle. It only took approximately 3 hours and one gallon of gas to make 37 pair ponds.



#8 - Three-wheeled cycle making openings in cattails. Aug. 82. JJ



#9 - Aerial view of openings on the Boschee (368) WPA. Nov. 82. JJ

4. Croplands

The goal of our farming program is proper seed bed preparation and weed control for the establishment of DNC or natives. Twenty-nine permittees were involved in farming and/or seeding DNC on 1,548 acres.

A total of 638 acres were seeded to DNC in 1982. Two hundred seventeen acres on four WPA's were seeded to DNC with a nurse crop in early spring and 421 acres on seven WPA's were dormant seeded to DNC in late October. The DNC mixture contained five pounds of intermediate wheatgrass, four pounds of tall wheatgrass, two pounds of ranger variety alfalfa and one pound of rambler variety alfalfa.

1982 DNC Seeding

<u>WPA</u>	<u>Acres</u>	<u>Season</u>
Grueneich (359a)D	48	Spring
Herman (374)D	125	Fall
White (184)D	45	Fall
Linnard (242)LaM	23	Fall
Patzer (250)	3	Fall
Kroll (116)L	85	Fall
Kappes (287)McI	54	Spring
Sackman (100)McI	49	Spring
Thurn (257)McI	66	Spring
Werth (438)McI	20	Fall
Wolf (34,35)McI	120	Fall
	<u>638</u>	

A 104 acre DNC field (Enger (32a) in which no alfalfa came up and about which many weed complaints were received was hayed and interseeded with alfalfa by station personnel on October 20. The Wolf (34,35) WPA was interseeded with tall and intermediate wheatgrass. A cooperater was given the late July hay as payment for the seeding operation. Forty acres on the Sukut (151) D in the Drift Prairie were seeded to native grass by refuge personnel in the spring. The native seed mixture consisted of three pounds of big bluestem, two pounds of sideoats gramma, one pound of green needlegrass, one pound of slender wheatgrass, one pound of intermediate wheatgrass and three pounds of switchgrass, pure live seed per acre. A total of 123 acres of degenerate tame grass fields were broken out in 1982 for future cropping and seeding.

Within the district there are five WPA's containing wildlife food plots totaling 34 acres of corn. These plots support resident populations of wintering whitetail deer, pheasant and Hungarian partridge. They are all farmed and maintained by local sportsmens groups or individuals interested in helping wildlife. The public relations benefits from these areas is well worth the few acres involved.

5. Grasslands

General native grassland communities of the district include the Eastern Mixed-grass Prairie and the Tall-grass Prairie. The approximate dividing line for these is the Escarpment which is an abrupt 300-400 foot rise in elevation between the Missouri Coteau and the Drift Prairie. Only approximately 55 per cent of the four counties in the district is in the Missouri Coteau and mixed-grass community, but this area contains 80 per cent of the district's FWS land. Thus management in this district must be largely geared to the mixed-grass prairie.

Over 35 per cent (15,100 acres) of the Kulm WMD fee title acreage is native rangeland or restored native grasslands. A major emphasis of management in the district consists of attempting to keep these rangelands vigorous, with overall range trends moving upwards toward good to excellent range condition. It is assumed that such range conditions produce the most desirable nesting habitat.

The main problem with native rangelands within the Kulm WMD is invasion by two cool season exotic grasses, Kentucky bluegrass and smooth brome. These grasses are the first to grow in the spring and produce 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 two main management techniques for suppressing exotic cool season grasses within the mixed grass prairie. They consist of burning and grazing by cattle.

The critical growth period for Kentucky bluegrass and smooth brome begins with initial spring green up 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 or heavy grazing pressure 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 needlegrasses 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. The warm season grasses such as bluestems and switchgrass are basically unmolested during their critical growth period which starts in late May to early June.

Fall regrowth is a second critical growth period that occurs in Kentucky bluegrass during September and October. Fall regrowth is dependent upon the utilization of root reserves. 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 (1 AUM/acre) or burned to further deplete the root reserves and hopefully kill the plant.

The techniques of spring crowd grazing, back to back fall-spring grazing and fall crowd grazing and their effects on range condition and waterfowl nesting success are presently incorporated in the NPWRC burning-grazing research project occurring within the Kulm WMD. Some interesting preliminary information from this seven year study indicates that mallards are thus far showing a preference for and higher nest success in brush species such as buck brush than in native grasses.

Non-native grasslands within the Kulm WMD include 6,800 acres of DNC and about 2,000 acres of tame grasslands. Degenerate stands are periodically rejuvenated through haying, haying followed by chisel plowing or cropping and reseeding.



#10 - Rejuvenated nine year old DNC field in gravel-like soil on the Geohring-Bender (268) WPA, McI that was hayed and chisel plowed in 1981. Aug. 82. LDW

A 16 acre field of solid quackgrass on the Moldenhauer (384) WPA was hayed in August of 1982 so that a trial of using round-up and seeding DNC directly into the hopefully dead quackgrass can be attempted this spring. The benefits possible will be getting it seeded to DNC with only one year's nesting season lost rather than three with cooperative farming agreements; few farmers are interested in cooperative farming this size field; upland duck nesting should be greater; there should be no erosion problems and this technique may be applicable to other light soiled hilly tame grass fields the Service bought that should never have been cropped.

7. Grazing

Prescribed grazing treatments totalled 3,870 acres on 34 WPA's in 1981. Spring crowd grazing from May 1 to May 31 at approximately 1 AUM per acre followed by three years rest is the primary grazing treatment used. If there is no Kentucky bluegrass problem a longer rest period is used. Only one area the Lazy M (340)D remains in the old four pasture rest rotation system. This is to be phased out in 1983.



#11 - Olson (53) WPA LaM after spring crowd graze (May 1 to June 10, 1982 0.9 AUM/acre). Approximately 1,000 lbs of "native" seed was combined by Valley City WMD personnel on 10 acres of this area. Aug. 82. LDW

The following charts give the pertinent information on the units grazed in 1982.

UNITS GRAZED IN 1982

<u>WPA</u>	<u>Acres</u>	<u>#Cows with calves</u>	<u>Dates</u>	<u>Stocking Rate AUM's/Acre</u>
Klein (92) L	85	85	4/24-5/25	1.3
Larson (12) L	138	85	5/1-6/16	0.9
Muonio (399) L	69	35	5/1-5/22	0.4
Spitzer (380) L	15	13 + 6 yrlgs	5/12-5/22	0.5
Mayer (408) L	63	28 yrlgs	5/8-6/19	0.5
Sperling (168) L	62	55	5/1-6/1	0.9
Moldenhauer (384) L	77	77	5/1-6/1	1.0
Knecht (397) L	123	85	5/1-6/9	0.9
Kirschmann (18) K	62	40	5/14-6/14	0.7
Opp (178) L	43	39	5/1-6/13	1.1
Schweigert (299) L	52	28	5/1-6/10	0.7
Buchholz (10) L	70	28	5/1-6/10	0.5
Mund (143) McI	110	75	5/1-6/10	0.9
Allison (259) LaM	100	41	4/28-6/21	0.7
Olson (53) LaM	60	46	5/1-6/10	1.5
Carlson (208) LaM	48	78	5/8-6/8	1.6
Cornell (15) LaM	47	41	5/1-6/1	0.9
Abell (145) L	70	60	5/6-5/29	0.7
		30	5/29-6/13	0.2
				0.9
Quandt (210) D	72	58	4/15-6/15	1.6
Kappes (287) McI	47	50	4/26-7/1	2.3
Redlin (11a) D	91	87	4/26-6/1	1.2
Werth (166a) McI	142	48 + 55 yrlgs	5/1-6/10	0.8
PDL (1)(15)(31a)	92	70	5/1-6/10	1.0
Weisz (62)	78	60	5/7-6/7	0.8
Knopp (241) Schock(27)D	100	98 yrlgs	4/15-6/15	1.5
Clay (17) D	30	20	5/8-6/8	0.7
Knecht (397) L	123	55	5/1-6/10	0.6
Ruff (179a) McI	130	60	5/7-6/18	0.7
Werth (166) McI	50	34	5/2-6/14	1.0
Pfeifle (177) McI	215	58	5/3-5/22	0.2
Entzinger (13) La M	70	56	5/2-6/10	1.0
Schweigert (299) L	52	24	5/9-6/10	0.5
Fey (144) McI	78	28	5/18-7/26	0.6
Heine (356) D	78	60	5/1-6/10	1.0
		21 yrlgs	5/26-6/10	0.1
				1.1
Wendt (165) LaM	27	26	5/8-6/18	1.0
Koskiniemi (29) L	43	59	5/13-5/28	0.7
Hille (14a) Hartman(65)D	20	20	9/1-10/30	2.0
WIC (214) McI	55	30	5/5-6/20	0.8
Lazy M (340) D	960	121	6/15-10/11	0.5

NPWRC Grazing Research Project

<u>WPA</u>	<u>Acres</u>	<u># Cows with Calves</u>	<u>Dates</u>	<u>Stocking Rate AUM's/Acre</u>
Erlenbusch (12) D				
Field #2	86	5	6/1-9/30	0.4
Field #3	81	50 yrlgs	5/1-6/15	0.7
Field #4	76	55 yrlgs	5/1-6/15	0.8
Lazy M (340) D				
Field #1	71	8	6/15-10/11	0.2
Field #3	63	67 yrlgs	5/8-6/14	0.6
Field #4	55	55 yrlgs	5/8-6/14	0.4
Geiszler (210) McI				
Field #2	74	50	5/1-6/15	1.0
Field #5	89	50	5/1-6/15	0.9
Field #3	92	8	6/1-11/1	0.5

8. Haying

Haying was done between July 15 and August 1. Bales are required to be moved by August 15. Most areas were hayed to remove litter and rejuvenate old stands of grass, primarily brome. Three recently seeded DNC fields were hayed in hopes of getting them established without going through another coop farming cycle and because of weed complaints.

We have had some success in using haying to make weedy DNC fields visually acceptable to neighbors and county government without having to spray herbicides which kill the alfalfa. Regrowth after haying provides only a small amount of residual cover for early nesters the next spring, but good late season re-nesting cover is provided and normally there are no more weed complaints for many years. We assume this is because dead weed stalks have been removed from sight and the weeds and DNC can start even the next spring with the DNC growing faster and suppressing or obscuring weeds.

The alfalfa fields on the Quashnick (349) D and Klettke (304) D WPA's were again hayed at the request of NPWRC personnel. These fields are hayed and nest dragged annually for a comparison of waterfowl nesting success with nearby DNC fields.

Value received for 521 acres hayed was \$2,013. The following table shows pertinent data relating to the units hayed.

<u>WPA</u>	<u>Acres Hayed</u>	<u>Type of Hay</u>
Schneider (64)	20	brome-quack
Quashnick (349) D	20	alfalfa
Grueneich (359) (360) D	50	DNC (wormwood complaint)
Grueneich (359a) D	25	alfalfa
Klettke (304) D	22	quack-alfalfa
Enger (32a) D	100	wheatgrass (alfalfa interseeded)
Lahlum (138) LaM	18	brome
Patzer (250) LaM	5	DNC (thistle complaint)
Wetzel (253a) LaM	15	brome
Fandrich (52a) L	50	brome-native
Schmidt (336) L	15	brome-quack
Moldenhauer (384) L	16	quack (weed complaint)
Wolf (34)(35) McI	110	DNC
Werth (166) McI	30	DNC (thistle complaint)
Werth (438) McI	25	Alfalfa
Total	521	

9. Fire Management

Prescribed burns were completed on seven units in the spring of 1982. The most ever on this district. Burns were completed between April 26 and May 19.

<u>WPA</u>	<u>Acres</u>	<u>Management</u>
Barr (54a) LaM	60	Control Kentucky bluegrass and rejuvenate natives
Kautz (156) L	25	Native seed production for harvest (green needle)
Kessel (250)	30	Competition control (new seeding)
Kessel (250) McI	70	Competition control
Grueneich (359) D	20	Weed control (wormwood)
Knutson (123) LaM	120	Rejuvenate seeded natives
Goehring (23c) McI	10	Weed control (wormwood)

Besides the normal burns for rejuvenation and control of competing grasses and weeds, a burn to stimulate seed production on the Kautz (156) L was attempted so that green needle grass could be harvested with the Valley City IMD combine. This did not work. We assume that the green needle grass was still suffering from the previous year's drought and was hurt by the fire even though green shoots had only just begun in early May. Very few seed heads were produced and foliage did not respond well despite adequate rains after the burn.



#12 - Backfiring from wetline on the Kautz (156) L. May 1982. LDW.

An attempt to use fire to control wormwood was also tried. This worked well only in spots where the fuel was great enough to consume the four to eight inch wormwood sprouts. In areas where wormwood severely infested the field its chemical inhibiting effect on other plants did not allow growth of enough fuel to carry the fire and control was not accomplished.

A DNC field on the Kessel (250) had a good catch, but Kochia and other annual weeds were suppressing portions of the DNC and it was burned in early May with good results.



#13 - DNC burned in early May to reduce suppression by annual weeds. July 1982. LDW.

One lightning fire burned about five acres on the Ziegenhagel (109) WPA. This fire was put out by the Lehr Volunteer Fire Department before we knew about it at a cost of \$75.00.

10. Pest Control

The Kulm WMD is required by state law to control noxious weeds on its fee title areas. The main emphasis in 1982 has been on controlling leafy spurge and Canada and Russian thistle.

Thistle seed is 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 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. This year thistle was mowed on 2 WPA's.

Leafy spurge is a much more tenacious weed and provides the biggest control headache. Left unchecked it can crowd out DNC, massively invade native range-land and subject the government to verbal abuse by neighbors, county officials and casual passers-by.

The primary control of this plant has been to spray with Tordon 22K or 2, 4-D in mid-June, just prior to seed ripening with a followup 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 of this potent chemical 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 dissemination. Annual control is normally required, but in most cases the size of the spurge area is getting smaller.

In 1982 2.5 man months were spent conducting spot spurge control on 32 WPA's.

State law requires the district to mow the roadside ditches along all of the WPA's. On WPA's where farming, grazing or haying is permitted, the cooperators are required to mow the roadside for the district. On WPA's where no use has been permitted, payment is made to neighboring farmers to mow the road shoulder. In 1982 \$890.00 was spent for mowing 13.75 miles of WPA roadside ditches. Twenty-six miles were mowed by FWS personnel.

13. WPA Easement Monitoring

We hope that the trend of only five to ten easement violations per year will return very soon! The 24 cases involving about 60 wetlands we've handled this year with 19 cases still open has overburdened the staff this winter and will probably continue to affect accomplishment of other work this coming year. Two violators were turned in by their neighbors.

All easements were flown in November or December and 59 possible violations were spotted. All "possibles" have been researched and ground checked thanks to the open winter we've had. Contacts have been made and compliance dates resolved for all but one landowner that winters in California.



#14 - Easement violation 202x had drain or fill activity on twelve of fourteen wetlands in the quarter.
Nov. 82. LDW.

Parts of LaMoure and Dickey Counties were flown in the spring of 1982 to check for violations not spotted or that occurred after the 1981 fall flight. No new violations were found.

The following violations were restored in 1982:

<u>Easement</u>	<u>Violation</u>	<u>Disposition</u>
(112x) D	2 scraper ditches & fill (spring 81)	Restored 5/26/82 (\$100)
(190x) LaM	1 scraper ditch (fall 81)	Restored 8/14/82
(117x) L	2 scraper ditches (fall 81)	Restored 5/16/82
(62x) L	2 scraper ditches (fall 81)	Restored 6/4/82
(175x) L	2 scraper ditches & fill (fall 81)	Restored 9/7/82



#15 - Cal Henry Bismarck Engineering Technician surveying mitigation wetland which had to be constructed by owner after he drained a wetland 100 yards from his house, claiming that it flooded his basement. Easement 112x. July 82. LDW.

The following violations were found in the fall of 1982 or earlier and are open cases.

<u>Easement</u>	<u>Violation</u>	<u>Disposition</u>
(202x) D	Drained & fill 1 quarter (fall 82)	Compliance date 5/20/82 set (\$100)
(75x,1) D	2 scraper ditches & fill (fall 82)	Compliance date 5/20/82
(261x) D	Drained & fill 2 quarters (fall 82)	Compliance date 6/10/83 set (\$100)
(252x) D	Drained & fill 5 wetlands (fall 82)	Compliance date 5/20/83 set (\$100)
(253x) D	Drained & fill 3 wetlands (fall 82)	Compliance date 5/20/83 set (\$100)
(144x) LaM	Plow furrow 3 wetlands (fall 82)	Compliance date 5/20/83 set (\$100)
(88x,1) LaM	Fill 1 wetland (fall 81)	Compliance by 10/15/83 or court
(350x) L	Old ditch cleaned beyond delineation map (fall 82)	Undetermined. Court challenge to complete the drain possible
(293x) L	Ditch cleanout (fall 82)	Owner wintering in California
(74x) L	1 ditch & fill	Compliance date 5/20/83 set
(59x) L	1 scraper ditch (fall 81)	Compliance by 6/1/83 or court (\$100)
(50x) L	2 scraper ditches & fill (fall 82)	Compliance by 6/1/83
(81x) L	Buried rocks in wetland (fall 82)	Restored contour 9/15/83, but will monitor for drainage from burial
(32x) L	1 ditch & fill (fall 82)	Compliance date 6/1/83 set
(388x) McI	1 ditch & fill (fall 82)	Compliance date 5/20/83 set
(374x) McI	Tree pile in wetland (fall 82)	Compliance date 3/3/83 set
(245x) McI	2 ditches & fill (fall 82)	Compliance date 5/15/83 set (\$100)
(220x) McI	Fill-rocks (fall 82)	Compliance date 9/1/83 set
(68x) McI	Fill-rocks (fall 82)	Compliance date 5/15/83 set

G. WILDLIFE2. Endangered and/or Threatened Species

Several sightings of Bald Eagle were recorded in 1982 during late fall movements through the district. There is apparently very little stopover use in this area.

Unconfirmed public sightings of whooping cranes were reported this year. Two stopping briefly in LaMoure and two flying over southwest McIntosh county have some credibility. Other reports turned out to be sandhill cranes and a great blue heron.

3. Waterfowl

Water conditions were good in the spring of 1982 (66% wet in early May and 97% in late May) and production was estimated to be 35,434 ducks on WPA's.

The random quarter section pair count was used to obtain an estimate of the number of breeding duck pairs in the district during the third week of May. Refuge personnel inventoried 1,689 wetland acres on 34 WPA's out of 16,840 wetland acres owned in fee title. Thus the production projections are based on an inventory of 10 per cent of the WPA wetland acres. Pair counts reflected a breeding population more closely aligned with the number of wetlands available in early May rather than in late May. Apparently most ducks had moved elsewhere by the time the extra water arrived in mid May. The number of pairs projected for the district from the count was 12,967. This is 7,470 more pairs than were counted in 1981 when the district was only 28 per cent wet and 3,311 fewer pairs than 1979 a year that basins were estimated to be 100 per cent wet.

1982 Duck Production on WPA's

<u>Species</u>	<u>Breeding Pairs (%)</u>	<u>Ducks Produced*</u>
Mallard	1,176 (9.1)	3,174
Pintail	1,241 (9.5)	3,348
Gadwall	1,274 (9.8)	3,433
Blue-winged teal	3,838 (29.6)	12,089
Green-winged teal	147 (1.1)	462
Shoveler	1,372 (10.6)	3,702
Redhead	2,123 (16.5)	5,730
Canvasback	163 (1.2)	365
Ruddy	1,421 (11)	2,556
Widgeon	32 (0.2)	74
Scaup	180 (1.4)	486
	<u>12,967 (100)</u>	<u>35,434</u>

*Ducks produced = Pairs x .45 productivity rate x Hammond standard size brood to flight.

No production estimates from easement acreage is attempted. Perhaps this will be available next year if we are able to do pair counts on some of Cowardin's Mallard Model four square mile plots.

Canada geese showed a slight toe-hold in the district this year with 3 broods being sighted on WPA's and a few more broods on easement and private land. To help get the ball rolling 15 hay bales (weedy) donated by a local farmer were wrapped with woven wire and placed on the ice this winter on eight WPA's. Public participation and support makes this program look promising.



#16 - One of 15 round bales wrapped in woven wire and placed on ice in December. Aug. 82. LDW

This year the fall snow goose migration along the James River was down from last year's peak population in the district of 200,000 to about 50,000 for a short time in early November.

4. Marsh and Water Birds

American bittern and black-crowned heron use and nesting increased due to the better water conditions. Double-crested cormorants again did not nest at the former colony site on the Graham (31) WPA.

6. Raptors

The most frequently observed raptors such as marsh hawks, American Kestrels and great horned owls appeared to be present in normal numbers.

In early November large numbers of migrating raptors were in the Kulm district. The main species were rough-legged, red-tailed, Swainsons and ferruginous hawks.

An injured snowy owl and kestrel were taken to the Bismarck zoo for care.

8. Game Mammals

Within the entire Kulm WMD white-tailed deer have continued to increase despite a very rough winter of 1981-82. Deer use can be found on every WPA that has even a small acreage of upland cover. WPA's were favorite hunting spots during the state gun season and 1982 hunter success was extremely high. Overall hunter success was 87 per cent in zone II-H, and 77.4 per cent in II-I with a "low" of 76.1 per cent in zone II-G-2.



#17 - WPA's are fawning grounds for a large portion of the deer herd in the four counties of the district.
June 82. JJ

A special white-tailed deer archery season was again allowed on the Maple River NWR, after the deer gun season closed. This hunt is an effective tool to disperse deer concentrations and reduce depredations on neighboring croplands. Peak population on the 400 acre parcel open to bow hunting was about 30 deer, compared to over 300 in years past when it was closed to hunting.

Bow hunting success like gun success was quite high this year during the four month season for persistent bowhunters.

During the winter months trapping and hunting of small mammal furbearers is a major activity of many farmers after the field season is over. Our WPA trappers are very territorial and a few minor conflicts had occurred. We were expecting more, but when the first fox pelts sold for only around \$30, interest waned rapidly. Trapping pressure was thus reduced this year, higher predator populations are expected in the spring of 1983.

A slight increase in the number of coyotes was observed this year, but ADC personnel continue to aerial hunt them on WPA's whenever a farmer thinks a coyote might get a sheep or calf. This spring they wiped out a den and adults on the Lazy M (340) WPA because a farmer heard coyotes. No depredations had occurred. Data on the increases in duck nesting success where coyotes are present indicates that this ADC activity is lowering duck production in the district without compensation.

10. Other Resident Wildlife

Severe cold in January and February of 1982 caused a pheasant die-off and resulted in a fall population that was only about one third of last year. The reduced hunting pressure on the remaining birds and mild winter of 1982-83 should help them bounce back. Hungarian partridge and sharp-tailed grouse populations were approximately the same as last year.

15. Animal Control

No scare devices for waterfowl or blackbird depredations were provided by Animal Damage Control to be loaned or given out this year. Flack was heavy at times, but a news release, other federal cutbacks, a sympathetic ear and only minor depredation problems helped to get us through the summer.

A trial of spring trapping small egg eating mammals other than foxes was attempted this year. Areas trapped were those where other work, such as fencing, was going on so that trips could be consolidated. The goal was simply to begin to get involved with the waterfowl depredation problem in an innocuous way, so that we will have a first hand knowledge and background from which we can deal with predator management issues.

Two types of traps were constructed and used by the staff. A live trap modeled after the "Coon Getter" made by Clint Smith of Miller, SD, and a conibear box trap set designed by DFA Odon Corr. A dozen coon-getter live traps were constructed on bad weather days for a materials cost of \$168 (\$14 each). Twelve box traps complete with 220 conibears would cost approximately \$120 (\$10 each). These cost the station only \$5 each because excess YACC plywood was used.

The results of this trial indicated that these traps baited with sardines were very selective and that the conibear trap would probably be the more practical of the two on a larger scale of use. Thirteen raccoons and three skunks were caught in the live traps and nine skunks and one raccoon were caught in the box traps. The number of days the box traps were used was only about half that of the live traps. No foxes were caught which agrees with DFA Corr's statement that in 10 years of use only one fox had been caught in the box trap and that was a pup.



#18 - Coon-getter live traps are great for raccoons, but we found no good way to get skunks out without them "letting go".
May 82. LDW

The amount of light let into these two types of traps is said to explain why they weren't equally successful for the two species. It has been suggested that a wire back for the box trap will increase the catch of raccoons. Conibear box traps which kill instantly did not have to be checked daily as did the live traps and there was practically no odor problem with the skunks in this trap.



#19 - Conibear box traps are highly recommended for areas with skunk problems.
May 82. LDW

17. Disease Prevention and Control

There were no botulism outbreaks this year. The 2200 acre Lake McKenna, scene of annual die-offs of 500 to 50,000 ducks, turned up no carcasses this year from four searches made from late July to mid September. Live trapped raccoons caught this spring were released on the lake in anticipation of a die-off to help clean up the carcasses. Water levels were fairly stable at a normal pool until they began to slowly drop in mid summer. October rains brought the pool up to normal levels. Reflooding in the spring of 1982 of areas that had been mud flats in 1981 caused us to anticipate botulism that fortunately didn't happen.

H. PUBLIC USE

1. General - Public Relations

The district staff meets at least annually with all the county commissioners. This gives them an opportunity to meet us in a non-hostile situation, ask questions, and receive information directly from us. Having a big revenue sharing check helps in no small measure. Weed control is almost always brought up. As long as we can continue to show a good faith effort at weed control the good PR we now have developed by trying to be responsive in this area should continue.

Local hiring of summer temporaries is another area where we feel we have received positive benefits. These long time members of the community are seen working for the "wildlife", so we must be OK. Their knowledge gained from working with us is imparted to family and friends and helps the FWS' presence to be understood and accepted in the community. Local hires haven't been much help with "better biology", but they sure build a good fence, as well as a bridge to the community.

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 (610 students). Waterfowl identification, waterfowl breeding 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.

7. Other Interpretive Programs

A series of wildlife films have been shown monthly to 20-50 members of the Kulm Rod and Gun Club. The film America's Wetlands was shown at their ladies night dinner with approximately 95 people in attendance. This film was also shown to the Napoleon and Gackle Wildlife Clubs.

8. Hunting

All WPA's are open to hunting of waterfowl and resident game. Water conditions were only fair at the opening of waterfowl season, but many more hunters

participated this year. A report in the Fargo Forum that Kulm was the place to hunt this year swamped us (relatively) with Fargo and Grand Forks hunters opening weekend. Hunters stayed well dispersed and good quality hunting resulted. Good hunting only lasted about one week. A front that brought heavy rains and added some needed water (5.65 inches in 3 days) to the wetlands also seemed to drive the ducks out. There was good water and it remained open for about a month longer, but the few ducks around stayed in the fields.

Pheasant hunting was also heavy on the drift prairie WPA's opening weekend, but with poor success, hunting pressure dropped off rapidly. Few pheasants were available after last winter's extreme cold. Deer hunting see G. 8. Game Mammals.

9. Fishing

Most fishing activity occurs on the Mundt (75) WPA in Logan County. It is stocked by the state with Northern pike and offers good fishing for an area where there are few lakes suitable for sustaining a fishable population. Improvements to the access road to this lake were begun in 1982 (see I.2).

10. Trapping

All WPA's are open to trapping and trapping permits are issued on easement refuges. There was a strong interest, particularly in fox trapping, but pressure dropped when the fur prices dropped. Interest in muskrat trapping was up slightly with a slight increase in the population.



#20 - Even though we've had heavy recreational fox trapping and hunting for several years in a row, due to high fur prices, scenes like this one on the Mayer (408) L WPA are all too common in the district. May 82. JJ

15. Off-Road Vehicling

Off-road vehicling (OVR) continues to diminish, but does not yet go away. The "No Vehicles" stickers on WPA signs have helped, but it only takes one leader to reopen a trail which soon turns into a road. We've concluded that certain chronic vehicle trespass areas need some form of habitat protection fence.

17. Law Enforcement (LE)

Besides easement enforcement which received the most of our law enforcement time, enforcement of waterfowl regulations and protection of habitat are the primary activities. Waterfowl LE is rather difficult on this 4,320 square mile district, because even though there are alot of hunters out there, hunting groups tend to go to their own separate sloughs rather than concentrate. LE thus requires alot of travel time from slough to slough, time observing and then checking hunters. Agent Bob Gelvin spent many days assisting us this year and his help was very valuable in carrying out the district LE program. Some of the cases made were: overbag (2), no duck stamp (2), no license (2), taking canvasback (2), unplugged gun (3), shooting snow geese from a moving vehicle (1), hunting in rest area (3), shooting within 1/4 mile of occupied buildings (1), (man stopped his truck in front of officer on main street in Ludden, ND, jumped out and shot a snow goose which splatted into the street).

Some other enforcement situations in the district were: vehicle and livestock trespass, dumping animal carcasses, etc. on WPA's, destroying boundary posts and signs with farm machinery, and cropland and haying encroachment.

I. EQUIPMENT AND FACILITIES

1. New Construction

The major construction effort in 1982 was the building of 5,520 rods (17.25 miles) of new three strand barbed wire fence on 14 WPA's. Fencing was much slower this year because removal of old fence material was often necessary and many of the units fenced were the difficult ones we had been putting off.

The following is a list of units on which new fence was built in 1981.

<u>WPA</u>	<u>Rods</u>	<u>WPA</u>	<u>Rods</u>
Hille (65)D	240	Larson (12)L	640
Lazy M (340)D	320	Muonio (109)L	560
Hamann (203)D	160	Mitschke (388)L	240
Cornell (15)LaM	80	Grabau (358)L	80
Kauk (333)L	160	Hochhalter (283)L	480
Koskiniemi (29)L	1200	Koeplin (142a)McI	320
Krueger (23,a)L	480	Brinkman (315) McI	560



#21 - Our farm-experienced summer temporaries earned their pay in the summer heat by removing 4.9 miles of old fence material, rehabilitating 10 miles, building 17.25 miles and inspecting and making minor repairs on 300 miles of fence and boundary. Aug. 82. JJ

A five man shooting range for firearms qualification was constructed near the shop site. A stock dugout was put in on the Kautz (156) WPA in Logan County.

2. Rehabilitation

Approximately 0.3 miles of road rehabilitation was done on the Mundt (65) WPA. The road leads to an important local fishing lake. There are very few fishing lakes in this area so the all weather road, though not complete all the way, has been quite a PR coup. The county has even agreed to maintain the road.

This road is at times quite sloppy and new trails branched out around bad spots or toward the lake wherever someone felt like driving. The main purpose of this work was to protect habitat by discouraging wandering vehicles with side slopes, signs and fenced parking areas. Labor to haul gravel was about the only cost of this project to the Kulm WMD, as Sand Lake provided dozer, operator and culverts, gravel was free and Logan County graded the road.



#22 - Mundt Lake Road was re-worked by Berle Meyers
with the Sand Lake dozer. June 82. LDW



#23 - Gravel was tail gate spread by Kulm personnel from an
existing gravel pit on the WPA and road was graded
by Logan County. Nov. 82. LDW

Extensive rehabilitation of inherited fence on the Lazy M (340) WPA was completed this year. This 1200 acre WPA is entirely native sod and had been fenced and cross fenced by former owners for more manageable grazing units. Kulm WMD has added fence for pastures included in the Northern Prairie Wildlife Research Centers grazing-burning study. New corners and brace posts were put in, old wood posts were replaced with steel, slough crossings were re-worked and new wire added in some areas. Sand Lake NWR filled our grain truck with steel posts and then with wood posts to help complete this job. Ten miles of fence were rehabed and one mile of new fence was built on this unit.

Two springs were re-opened for stock watering one on the Opp (178)L and the other on PDL(1c).

3. Major Maintenance

Spring fence checks and repairs were made on all units scheduled for grazing treatments. Approximately 300 miles of refuge boundary (out of 520 miles total) was field checked for bent, broken and tattered WPA signs and poles.

Five miles of old fence material on 6 WPA's were removed. Two dump sites were buried on the Boshee (368)L and Wendt (165)LaM WPA's. Basements were buried on the Baltzer (70)L and Bauman (308)McI.

Two dams on the Mund (134) WPA were riprapped with existing rock piles on the WPA.

4. Equipment Utilization and Replacement

An IHC 16HP Cub Cadet riding mower and a 1100 gallon tank and transfer pump are the only new equipment purchases out of O&M in 1982. The tank will give us onsite backup water for prescribed burning or herbicide spraying. This gives us 5 quick clean water refills for fire pumpers should the need arise.

A 1959 cable operated D-4 was excessed and picked up by Red Rocks Lake Indian Reservation in Minnesota. It was replaced with a BLHP funded all hydraulic International TD-8E. We got a good "going out of business sale" price of \$44,045, but we hope some future manager isn't stuck with something for which he can't get parts or repair. A compact pick-up was ordered with BLHP money in 1982.



#24 - BLHP dozer.

Oct. 82. JJ

We traded one of two Chevy Luv pick-ups to Madison WMD for a truck capable of safely carrying our John Deere spray rig and 300 gallon tank. This had been a safety and efficiency problem in 1981. We received a one ton stake body 4x4 with duals and 6 cylinder engine. It doesn't set any speed records on the highway, but has worked very well in the field. Six new tires were put on the truck and maintenance worker Steinmetz did a good job adapting the spray rig so the booms were at the proper height. Fortunately for Madison WMD the Luv we didn't trade had transmission problems shortly after the trade. Sand Lake NWR generously provided us with a pick-up for the summer to help transport the temporaries hired to BLHP fencing.

An excess utility tractor was picked up from Lake Andes for mowing roadsides and an excess dump truck was received from Northern Prairie Wildlife Research Center.

5. Communication Systems

End-of-year Pay Act money provided two handi-talkies and chargers for LE, prescribed burning, etc., a 100 watt mobile, and a 60 watt base station for the shop. The mobile with AC adapter that was in the shop was transferred to Lake Andes NWR. The new base will provide communication to employees out in the district rather than only headquarters to shop. It has too often happened during the outdoor work season that no one was in the office to receive calls for assistance when there was help available at the shop, but calls couldn't be received.

6. Energy Conservation

Our all electrically heated shop cost about \$3,000 for electricity in the winter of 1981-82. To combat this the six thermostats that were all mounted on the cold outside walls were disconnected and a single programmable Honeywell thermostat was installed. Thermostat settings automatically drop back to 50°F at night and all day on weekends. Three storm window inserts were purchased for the shop windows and two overhead ceiling fans were installed to circulate hot air trapped against the ceiling to the floor.

The shop site, which is located on a windy knoll with an estimated average annual wind speed of 16-18 mph at 80 feet above the ground, would be an ideal site for a wind energy system.

J. OTHER ITEMS

2. Items of Interest

Refuge Manager, Larry West, received his 10 year length of service pin.

West, Jones, Steinmetz and Lundgren attended a fire training course February 10 and 11 at Jamestown, North Dakota.

Maiss attended the Wing Bee February 22-26 at Fort Collins, Colorado.

West and Okerlund attended required warrant training February 24-26 in Bismarck, North Dakota.

West, Jones and Maiss attended the 40 hour LE refresher course March 22-26 at Pierre, South Dakota.

West attended EEO training April 20 in Bismarck, North Dakota.

Kulm WMD hosted the fall pre-hunting season LE workshop and firearm requalification for the southern North Dakota refuges and WMD's on September 17, 1982.

The Kulm WMD again fielded a slowpitch softball team to participate in the local league. "Wildlife" came in fourth in the regular season and third in the tournament. Innumerable near the fence big outs that caused this year's poor showing were blamed on arms numbed by pounding fence posts all day.

3. Credits

This report was written by Refuge Manager, Larry West. Tabular information was compiled and the first draft typing done by Refuge Assistant, Edna Okerlund. Final typing was done by Volunteer Rosemary West.