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KULM WETLAND MANAGEMENT DISTRICT

Kulm, North Dakota

ANNUAL NARRATIVE REPORT

Calendar Year 1985

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

KULM WETLAND MANAGEMENT DISTRICT

Kulm, North Dakota

ANNUAL NARRATIVE REPORT

Calendar Year 1985

Review and Approvals

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INTRODUCTION

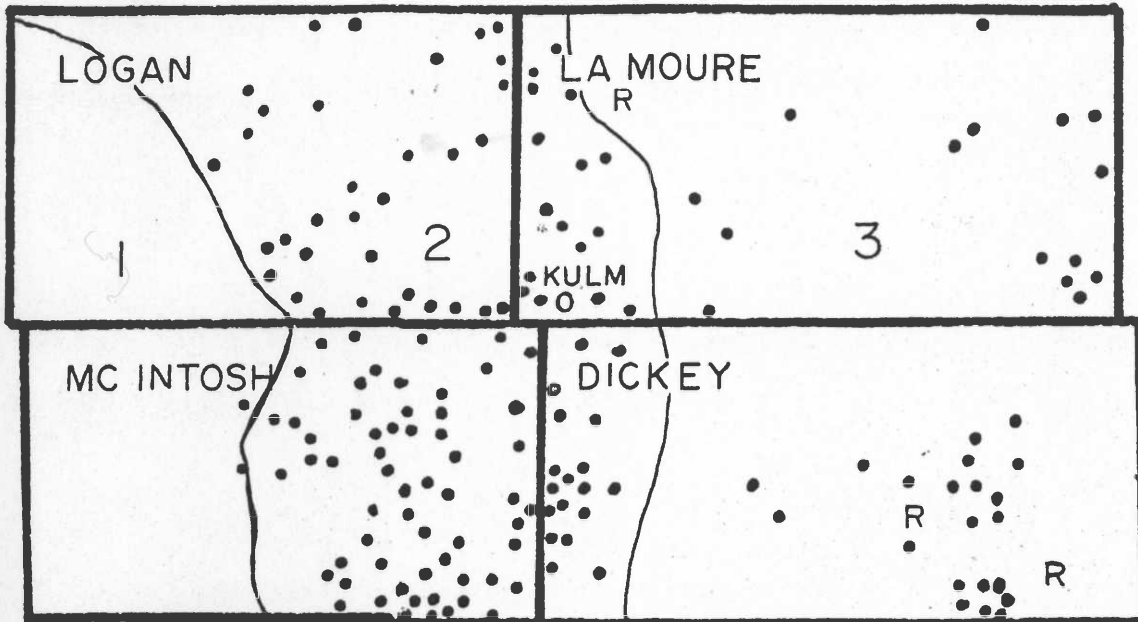
The Kulm Wetland Management District is located in southeastern North Dakota lying in the famed Prairie Pothole Region. This region has a variety of glacial land forms, the most well known being the numerous shallow wetland basins so vital to waterfowl/wildlife production. The District covers 4278 sq. miles and is comprised of four counties - McIntosh, Logan, Dickey, and LaMoure; 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 Coteau and the Coteau Slope. The Drift Plain is located in most of Dickey and LaMoure counties except where it meets the Missouri escarpment which is located in the extreme western part of Dickey and LaMoure counties. The Drift Plain is characterized by flat to gently rolling ground moraine. Where the Drift Prairie meets the Missouri escarpment there is 300-400' elevation change which raises up to the Missouri Coteau. Elevations range up to 2250 feet above sea level in western Dickey county. Moving up into the Missouri Coteau we find an area characterized by non-integrated drainage and thick glacial drift more commonly described as knob and kettle country. The Coteau Slope is best described as flat to rolling thin glacial drift with an integrated drainage that flows westward to the Missouri River. The wetland basins in the Missouri Coteau average larger and deeper than those on the Drift Plain and hence are somewhat more permanent. (Photo 1). District lands include 42,065 acres of fee land making up our Waterfowl Production Areas (WPA's), 98,174 wetland easement acres, and 3 easement refuges totalling 4,108 acres. There have 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 Missouri 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 (Figure 1). Approximately 60 percent of fee lands are upland with the remaining 40 percent 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.

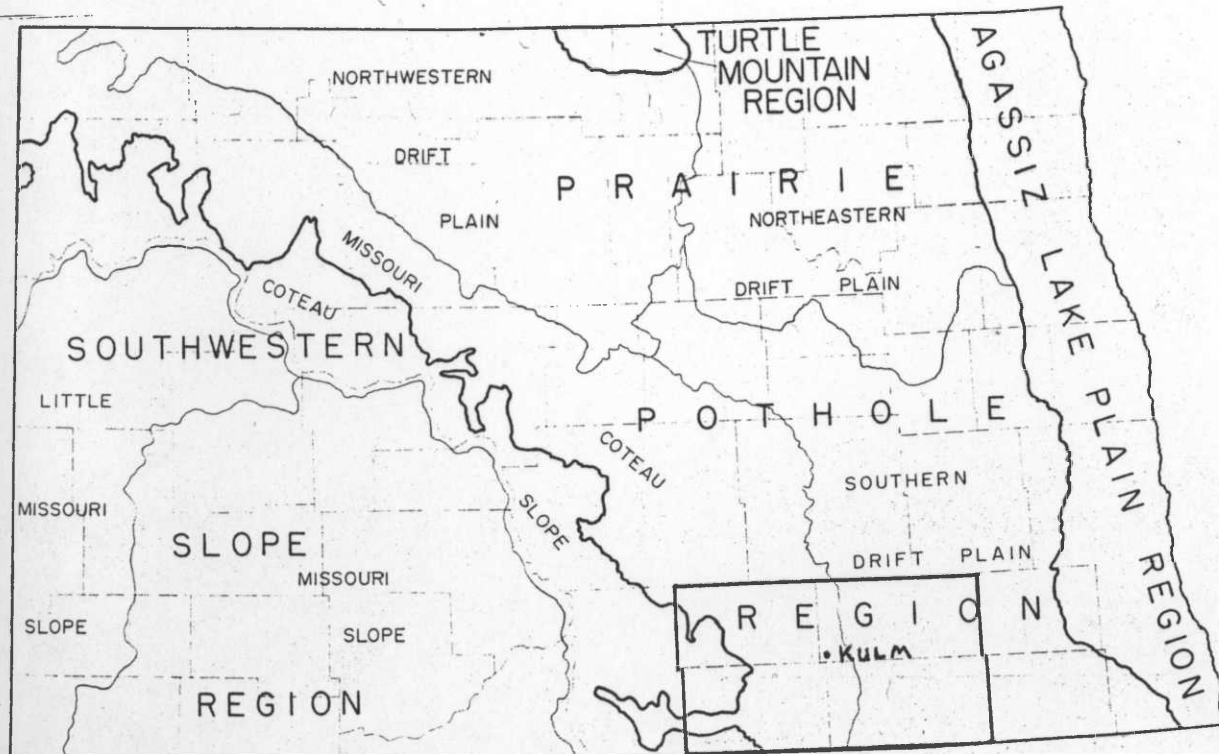


Photo 1. Missouri Coteau typified by rolling hills, grasslands, and isolated wetlands, Rutschke WPA, 6/85 - RAH

KULM WETLAND MANAGEMENT DISTRICT



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



NORTH DAKOTA

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NATIONAL WILDLIFE EASEMENT REFUGES

A. HIGHLIGHTS

Waterfowl management easement acquisition continued this year and a total of 1,323 wetland acres were purchased. (Section C.2)

Three Ducks Unlimited projects were initiated in the District this year, two projects involving peninsula cut-offs and island construction and one project being an electric predator barrier fence. (Section G.3)

Two electric predator barrier fences were completed by the staff this year in an attempt to increase local production. (Section G.3)

Major land management activities included controlled grazing on 2546 acres, haying 1786 acres, farming 920 acres, prescribed burning 807 acres, seeding grass on 496 acres, and building 5.7 miles of fence. One hundred and four special use permits were issued in 1985. (Section F)

A waterfowl nesting/predator trapping study was initiated this year. One hundred forty one predators were trapped and Mayfield nesting success was 16.8% on untrapped areas and 55.6% on trapped areas. Mayfield nest success on islands checked ran 59%. (Section G.3 and G.15)

Involvement in the Giant Canada goose restoration program was continued this year; we released seventy-six geese on district WPA's and put out nesting tubs and bales. (Section G.2)

No disease problems or necrotic enteritis occurred this year. (Section G.17)

Compliance was accomplished on 34 of 38 wetland easement violations that were found in the 1984 flights. This year we flew easements in early November and have 60 possible violations to ground check. (Section F.13)

Two wildfires occurred in the District this year burning 313 acres. (Section F.9)

B. CLIMATIC CONDITIONS

Climatic conditions continue to be a major factor in the management of migratory waterfowl within the district; dry conditions prevailed again. We haven't had a truly flood roaring wet year since 1979 but 1985 was exceptionally dry with many type IV basins being totally dry. Low water conditions of course mean minimal waterfowl breeding pairs, poor brood water conditions (Photo 2) and low duck production. Total precipitation for the year was 16.95" with 27" of snow.

The winter of 1984-1985 was very mild resulting in little hardship for resident wildlife but the winter of 1985-1986 has started with very cold temperatures, high winds and lots of snow. This may result in some difficult times for resident species but hopefully the snowpack will aid in filling wetland basins next spring.

Monthly high and low temperatures for 1985 are as follows:

	<u>H</u>	<u>L</u>
Jan.	30	-34
Feb.	48	-30
March	58	-5
Apr.	84	18
May	90	30
June	85	33
July	95	45
Aug.	86	35
Sept.	80	25
Oct.	64	14
Nov.	44	-28
Dec.	28	-25

Range -34 to 95



Photo 2. Blue-winged teal brood in search of water, Herman WPA, 6/85 - LA

C. LAND ACQUISITION

1. Fee Title

Acquisition of fee land for WPA's in North Dakota has been non-existent since 1978 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 is 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 allow management of complete wetland complexes. The Garrison issue may be coming to a decision point soon and the new Governor has been in office for a year now and is often working close with conservation groups and Regional Office FWS staff. Also a North Dakota migratory bird acquisition plan has been formulated to address the State's concerns and list county by county goals. We remain hopeful.

Currently the Kulm District manages 42,065 acres of fee title land in the four county area. The table below lists our currently managed acres and our goal for fee acquisition.

<u>FEE ACQUISITION</u>			
<u>County</u>	<u>Fee Land and PDL Acres</u>	<u>Acquired in 1985</u>	<u>Goal Established to be Purchased</u>
Dickey	9,209	0	11,900
LaMoure	4,800	0	8,450
Logan	10,654	0	12,900
McIntosh	17,402	0	20,300
Totals	42,065	0	53,550

2. Easements

Wetland easement acquisition continued into its second year since the shutdown in 1978. Several wetland tracts have been optioned within the District. Biological evaluations were completed on 20 new tracts and 24 new purchases were accomplished by our ND Realty staff. The table below illustrates our current acreages, new purchases, and goal acres. The District is now responsible for management and surveillance of 98,174 wetland easement acres, divided among 1293 contracts.

<u>EASEMENT ACQUISITION</u>					
<u>County</u>	<u>Purchased in 1985</u>	<u>Cost</u>	<u>Average Cost/acre</u>	<u>Total Acres</u>	<u>Goal Acres</u>
Logan	123 acres	14,350	120.73	34,566	48,375
McIntosh	237 acres	14,425	60.86	27,522	47,767
Dickey	161 acres	6,800	42.24	23,655	37,300
LaMoure	802 acres	115,115	143.53	12,431	28,615
Totals	1,323 acres	151,190	114.28	98,174	162,057
	24 tracts				

D. PLANNING2. Management Plan

Updating of Resource Inventory Planning Cards was completed for most of Dickey and LaMoure counties. 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 completed 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.

Other management planning included such items as Annual Water Management Plans, Annual Land Synopsis Reports, Predator Trapping Plans, Fire Management Planning, and Re-setting of Waterfowl Objectives.

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.

Public participation was also involved in our Ducks Unlimited Proposals and our Predator Trapping Program either via the EA process or direct consultation.

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.

Environmental assessments were formulated and approved for our predator control measures and 2 Ducks Unlimited projects, but not without difficulty. The Regional Office allowed us many attempts at getting it their way before the EA's were accepted and approved. In addition to the EA's a varied array of permits were required such as section 404 permits, water rights, archaeological clearances and section 7 consultations.

5. Research and Investigations

Kulm NR 85 - "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 sixth 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 fifth year of avian nesting data and sixth year of vegetative data were collected. Ninety six duck nests were located in 1985 with apparent nest success being 34% and Mayfield success at 16.8%. There were 136 duck nests located in 1984 with a 11.2% Mayfield. Mayfield nest success in 1983 was 19.6% and was 11.3% in 1982.

Thirty Robel and 300 Daubenmire plant transects were completed. Three breeding bird transects and four nest searches were completed on each of the 15 fields. Photos were taken at 120 photo stations during the spring and summer. Grazing was carried out on 9 fields.

Preliminary data regarding duck nest numbers and the various grazing systems are as follows:

Waterfowl Nests/Treatment 1982 - 1985

<u>Grazing Treatment</u>	<u>Total Duck Nests</u>
Spring Crowd	73
Fall Crowd	71
Fall-Spring Crowd	99
Season Long	104
Control	105

1985 Nesting Results

<u>Grazing Treatment</u>	<u># Duck Nests</u>	<u>Mayfield Success</u>
Spring Crowd	16	8
Fall Crowd	19	21
Fall-Spring	23	14
Season Long	20	14
Control	<u>18</u>	<u>27</u>
Totals	96	16.8

Kulm NR-85 - "Island/Point Research Study" (924.A - 924.09)

John Lokemoen, NPWRC Research Biologist, began 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 district points (peninsulas) and islands was completed by district staff along with construction of electric fences for predator barriers at the Bovey and West Island WPA's. It will be interesting to see if and how dramatically waterfowl use, nesting and success may increase if the predator fences are successful. (See section G.3 for results from West Island WPA and island searches).

Small Unit Management Research - "Evaluation of management to increase mallard recruitment on selected Wetland Management Districts". This is a proposed detailed study by NPWRC which is not yet funded, but some office and field work in preparation for this research was completed by the WMD. Basically, the study will test the hypothesis that if nesting mallards are protected from predation either by some type of barrier or removal of predators, local population buildups resulting from homing will occur. The research is designed to determine (1) the magnitude of increase in recruitment that can be attained through use of specified available management techniques, (2) the level of population density that will result from increased recruitment, and (3) the ecological factors that will ultimately limit the size of a breeding population. In addition, the proposed study will serve as a verification of simulation techniques that may be used as operational decision-making tools.

First the entire district was evaluated for potential candidate areas that met certain criteria such as WPA's with an 80 acre block of former cropland, class II or III soils, no greater than 3 per cent slope, no wetlands in block, good surrounding wetland complex, typical of WMD, good road system, etc. Three WPA's in the Kulm WMD were selected. Through a random selection the Todd (16) was designated as a control, the Werth (166) was designated for predator trapping and the Klettke (304) was designated for an electric fence. A 95 acre field on the Klettke WPA was broken out, cultivated 4 times and sprayed with round-up using station funds in preparation for reseeding to DNC in the spring of 1986 and building a predator barrier fence.

1. Personnel

1 5 3 4 2

Photo 3. Kulm Permanent Staff - RAH

1985 Staff consisted of:

1. Larry West, Refuge Manager, GS-11, PFT
2. Roger Hollevoet, 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, CS, Resigned 5/17/85
7. Douglas Leschisin, Biological Aid, GS-4, Temporary, EOD 4/15/85-8/30/85
8. Mark Gruebele, Biological Aid, GS-4, Temporary, EOD 3/17/85-11/16/85
9. Lee Albright, Biological Aid, GS-4, Temporary, EOD 5/15/85-10/28/85
10. Randy Klusmann, Biological Aid, GS-4, Temporary, EOD 5/28/85-8/17/85
11. Gene Taszarek, Biological Aid, GS-3, Temporary, EOD 5/28/85-12/7/85
12. Gary Brovold, YCC Group Leader, GS-4, Temporary, EOD 5/28/85-8/17/85
13. Chris Lapp, SCA Volunteer, EOD 4/8/85-8/17/85
14. David Becker, SCA Volunteer, EOD 4/8/85-6/28/85
15. Cindy van Curler, YCC, EOD 5/27/85-7/3/85
16. Julie Forsman, YCC, EOD 6/6/85-7/3/85
17. Darin Johnson, YCC, EOD 6/16/85-7/3/85
18. Jason Krueger, YCC, EOD 6/6/85-7/3/85
19. Tim Haag, YCC, EOD 6/6/85-7/3/85

Personnel changes included the resignation of Sherwood Lundgren, WG-2 career seasonal laborer who has been with the station the past eight years. Sherwood performed a wide array of duties such as fencing, spraying noxious weeds, mowing roadsides, flying easements, and various small spraying operations. His wife found a full time job in Iowa as a firefighter and Sherwood is working at a boys' school. We are very happy for the both of them and will miss his dedication and knowledge of the District.

In January, 1985 Jim Steinmetz, maintenance worker, received a promotion from WG-7 to a WG-8.

Finally in order to fill the vacancy created by the resignation of Sherwood Lundgren we reclassified the position and advertised on the vacancy announcement as a GS-5/6 Biological Technician. In mid-December we hired Michael Johnson who was employed at Fish Springs, Utah as a Biological Aid. Mike's reporting date is scheduled for early January, 1986.



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Photo 4. Temporary Biologists and Volunteers - RAH



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Photo 5 YCC - DAL

Several temporaries were employed in 1985 in order for us to complete several projects. The 5 year staffing pattern for the wetland district is as follows:

	<u>Permanent</u>		<u>Temporary</u>	<u>Total FTE</u>
	<u>Full Time</u>	<u>Part Time</u>		
FY 85	5	1	6	7.5
FY 84	5	1	4	7.3
FY 83	5	1	4	
FY 82	4	2	6	
FY 81	3	3	5	

2. Youth Programs

A YCC program was funded again this year which helped us accomplish several varied work projects. Five youths and 1 adult group leader were all hired from local communities. The work force consisted of 3 boys, 2 girls and a teacher/coach group leader from the Kulm High School. The use of a teacher/coach for a group leader makes supervision of the youths a much easier task as he has good experience supervising and directing these young people.

This year's accomplishments by the YCC included:

- Building 5.7 miles of 3 strand barbed wire fence.
- Erected 120 feet of 8' high security chain link fence at the shop site.
- Assisted in construction of a 2 stall garage/storage building by laying the cement, putting up steel siding, and painting.
- Assisted in the repair of the main dam at Bonehill National Wildlife Refuge.
- Nest dragging activities
- Built new storage shelving in the shop
- Installed styrofoam insulation along the foundation around the shop and heated chemical storage building.
- Washing and cleaning vehicles
- Yard maintenance activities at the shop.

3. Other Manpower Programs

Three biologists and two general labor positions were utilized as temporary workers this year. Our biologists completed several major tasks such as prescribed burning, waterfowl pair counts, fence repair, predator trapping, easement flying and mapping, canvasback surveys, building predator fences, report writing, rip carding, nest dragging, island surveys, nesting studies, land inventories and posting WPA's. Our laborers were involved primarily with force account farming, putting up fence corners, rip-rapping dikes, roadside mowing, hauling gravel for shop site improvements, weed spraying, vehicle maintenance and construction activities. We hope to continue the use of summer labor if funds can be found and FTE limits aren't restrictive.

Other manpower programs included an agreement entered into with Evergreen State College of Washington State. This concerned a Co-op program

with one of their students. Roger Hollevoet was responsible for supervising, grading and evaluating the student's performance so he could obtain credit for his service at Kulm WMD.

4. Volunteer Program

The Student Conservation Association (SCA) Program to recruit volunteers was utilized for the second consecutive year. We recruited 2 volunteers, Dave Becker, with a degree in wildlife from the University of Minnesota and Chris Lapp, a sophomore in Wildlife from Evergreen State College in Washington. Costs involved with the program included a subsistence payment (\$35/week) and transportation to and from their residences to the headquarters on their starting and ending dates. The program cost is shared with the SCA on 85/15 basis. The tour of duty for our volunteers was from 4/8/85-6/28/85 (twelve weeks) which cost the station a total of \$1871.83. A 50' surplus trailer is utilized for living quarters which provides economical living now and in future years. An attractive feature of the program is that the SCA volunteers do not go against our FTE ceilings. Work elements that the volunteers completed or assisted in included spring pasture fence repair, predator trapping, prescribed burning (after required training), waterfowl pair counts, erecting duck nesting baskets, completed a nesting structure use analysis, canvasback surveys, nest dragging, and easement mapping.

5. Funding

The Kulm Wetland Management District is responsible for the administration and management of 306 tracts of fee land managed as 182 WPA's totalling 42,065 acres. In addition to the management of fee tracts the District is responsible for administration, surveillance, and enforcement of 1,293 wetland easement contracts which protect 98,174 wetland acres. Added to the above responsibilities is the management and administration of three National Wildlife Easement Refuges totalling 4,108 acres. These resources are located in a four county district that covers 4,278 square miles. 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, unique displays, boardwalks, or steamboat rides, 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 line 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, move into new areas of management, perform predator management and across the board "intensive management", along with the need of public education and people management. All this 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. Without adequate funding we create a lack of management responsiveness and protection of our wildlife and habitat resources; enough said.

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

	<u>1200</u>	<u>6800</u>	<u>ARMM</u>	<u>2800</u>
1985	175	14	98	
1984	185	9	53	55
1983	185	10		
1982	163			102.8
1981	171			

6. Safety

Safety orientations were given to all of our temporary staff, YCC'ers and volunteers which included safe equipment handling, fire safety, driving exams, review of service policy and use of safety equipment. Several temporaries were also assigned to participate in safety meetings.

Only one lost time accident occurred in 1985. Assistant Manager Hollevoet was unloading grass seed and when carrying a large amount of seed he stepped into some torn up concrete and jammed the lower vertebrate in his back. This resulted in the vertebrate tipping or tilting at an angle out of place and a resulting slippage of the disc, placing pressure on several nerves. Traction was required to lessen the effects of the injury but the accident appears to have created some permanent effects, the pain and stiffness is persistent.

Several station safety meetings were held throughout the year and the topics included the following:

- January - High Blood Pressure
- February - High Blood Pressure
- March - Driving Safety
- April - Prescribed Burning Safety
- Fire Safety
- Driving Awareness
- May - ATC Safety and Techniques of Handling
- June - YCC Safety Orientation
- Rabies
- July - Outdoor Survival
- August - Hypothermia
- September - Tornadoes
- October - Snowmobile Safety
- November - Backhoe Safety
- December - Chemical Storage and Handling

7. Technical Assistance

Technical assistance is given in varying fashions to local landowners on cattail control, blackbird problems, grasses suited for wetland plantings,

control of leafy spurge, and various habitat problems. Some other specific assistance that we were involved in included the following:

- Assistance was given to the SCS on three projects they were working on to better improve or preserve conditions for wildlife.
- We gave assistance to the ND Highway Department on wetlands and wetland easements that may be affected by a 15 mile highway renovation project from Edgeley to Kulm.
- Hollevoet met with Leo Kirsch and Phil Arnold to tour the Corps of Engineers Pipestem Dam project and give advice on sharptail grouse management. Hollevoet then gave a presentation to the Stutsman County Wildlife Club on sharptail grouse biology and management.
- Jones helped judge the Southeast Central District Science Fair which involved nine area schools.
- Hollevoet has given various Firefighter Training sessions to the Kulm Volunteer Fire Department.

F. HABITAT MANAGEMENT

1. General

Waterfowl Production Areas within the Kulm Wetland District are composed of a diversity of habitat types and are generally interspersed. Overall 60% of the areas are uplands and 40% is wetland. This desirable mixture of wetland types, soils, and a variety of 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, planning management procedures, maintenance and/or preservation of these habitats, attempted control or alteration of limiting factors, enforcement of laws and statutes, and implementation of proven and new wildlife/habitat management techniques. Typical management activities include prescribed burning, grazing, various haying methods, mechanical and/or chemical treatment and seeding. The use of these techniques vary from year to year depending on weather, biological preference, staff views, new trends, priorities, and RO ideas. The primary or typical management techniques used in the 1980's throughout the District is outlined in the following table.

KULM WETLAND MANAGEMENT DISTRICT ACTIVITY SUMMARY, 1980-1985

	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>
Grazing (acres)	3734	5313	4539	2783	2804	2546
Haying (acres)	404	536	521	323	796	1786
Farming (acres)	2065	1345	1548	1182	626	920
Burning (acres)	0	75	335	286	689	807
Fencing (miles)	42.25	22.75	17.25	13.1	7.00	5.7

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 gramma, 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, quackgrass, 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 semi-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)

	<u>Logan</u>	<u>McIntosh</u>	<u>LaMoure</u>	<u>Dickey</u>	<u>District</u>	<u>Total</u>
Wetlands:					<u>Acres</u>	<u>Percent</u>
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	<u>1,288</u>	<u>2,226</u>	<u>277</u>	<u>1,088</u>	<u>4,879</u>	<u>11</u>
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	<u>51</u>	<u>226</u>	<u>21</u>	<u>30</u>	<u>328</u>	<u>1</u>
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%

2. Wetlands

There are a variety of wetland types with various shapes, sizes and vegetative communities in the District, but these can be categorized into four general types. Two percent of our wetlands are type I's (370 acres), 17% are type III's (2,867 acres), 51% are type IV's (8,352 acres) and 30% are type V's (4,879 acres).

Wetlands play an extremely important role in the management, preservation, and production of many or most prairie wildlife species, especially waterfowl. The primary objective then, of managing and owning these wetlands is to provide habitat for first migratory waterfowl along with with other migratory and resident wildlife species. Often the best management of these prairie wetlands is to conform to natural conditions and to protect these areas from the adverse activities of man. When these natural wetlands are impacted adversely or put into an advance successional stage, then other manipulative management may be required. In North Dakota 60% of our wetlands have been lost to drainage and development. This makes our remaining wetlands of much higher importance. Currently we are still losing wetlands at a rate of 20,000 acres/year in North Dakota.

In the Kulm Wetland District and throughout the Dakotas we are not only concerned with the complete destruction of wetlands but also the many adverse impacts that are influencing these basins. These include agricultural chemical run-off and high siltation rates. As a result of this, many of our basins are becoming choked with vegetation making them less desirable to migratory waterfowl use. Because of the continuing loss of wetlands or impacts on existing wetlands we gear some of our management to combat or lessen these impacts.

One such management activity is the use of tracked bulldozers to create new wetlands (photo 6), remove silt from existing wetlands (photo 7), shear or damage cattail stands in existing wetlands (photo 8), construct ditch plugs draining basins, create deeper openings in existing dry wetlands, or a combination of techniques (photos 9,10,11). Another management activity commonly used in cattail choked basins is prescribed burning (photo 12). The following list summarizes our 1985 management activities in wetlands:

<u>WPA</u>	<u>Activity</u>
Klettke	3-wetland ditch plugs
Klettke	4-wetlands with silt removal
Klettke	2-dams to create wetlands, 1 culvert
Bender	1-ditch plug
Boschee	1-opening, 1-island, mowed & cultivated 34 acres
Fey	3- pair openings in cattails
Hille	3-openings, 1 island, mowed 55 acres
Patzer	3-openings, 1-island
Grueneich	5-openings
Lee	Burned 3 acres of cattail, mowed 15 acres
Patzer	Burned 66 acres of cattail, mowed regrowth
Wolf	Burned 55 acres of cattail
Kautz	Burned 19 acres of cattail
Knecht	1-ditch plug
Kramlich	1-ditch plug



Photo 6. Wetland created after determining proper levels and constructing an earthen dam with overflow culvert, Kautz WPA, 85 - RAH



Photo 7. Silt removal in wetland basin to open and deepen the basin allowing for increased waterfowl use, Klettke WPA, Oct. 85 - LDW.



Photo 8. Openings in cattail choked wetland created by using bulldozer on ice, Krueger WPA, May, 1985 - DAL.



Photo 9. Wetland Management - eighty percent of this wetland was hayed and in those areas that were not hayed pair openings were constructed in the emergent vegetation, Fey WPA, Oct. 85 - MG.



Photo 10. Intensive Wetland Management - Basin was burned in Feb. 85, hayed in Aug. 85, and pair opening and island constructed in Oct. 85, Patzer WPA, 10/85 - MG

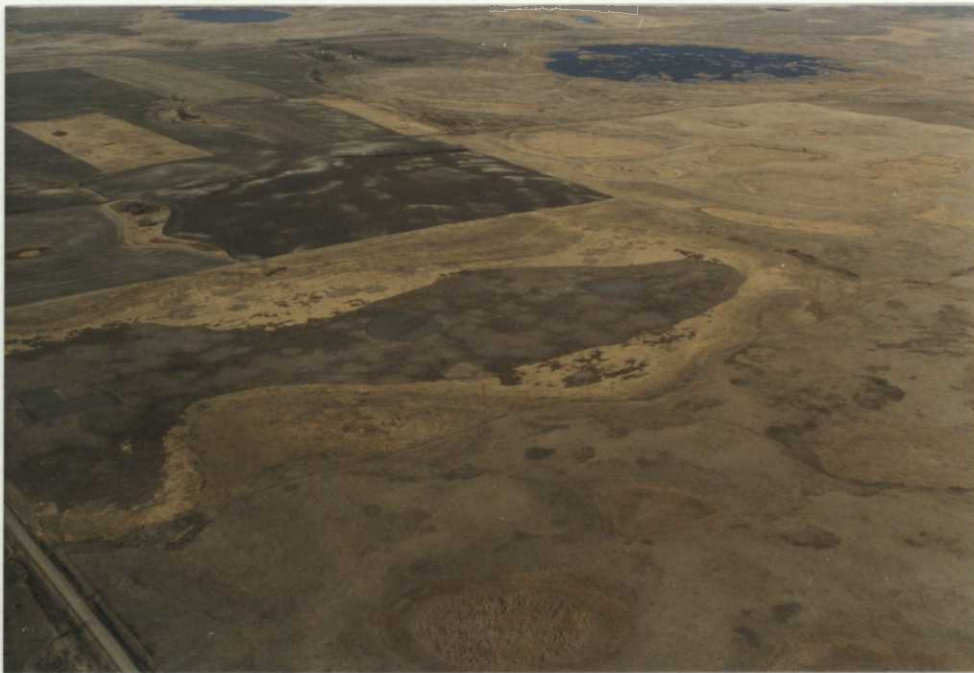


Photo 11. Intensive wetland management; wetland burned Nov. 84, mowed Aug. 85, pair opening, brood pond and nesting island constructed Oct. 85, Hille WPA, 10/85 - LA



Photo 12. Burning cattails to improve wetland appearance and waterfowl use the following spring, Opp WPA, 5/85 - DAL

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 weed badgering services for within the row weed control.

In addition to this we used the traveling tree spade to transplant 21 trees onto our shop site. Sixteen evergreens were planted as an esthetic screen planting (Photo 13) and five trees were planted in a clump planting made up of both deciduous and coniferous trees. These plantings constitute a forest in North Dakota.



Photo 13. Regional tree spade was utilized to plant this conifer screen planting at our shop site. Trees were obtained at no cost, 4/85 - RAH.

4. Croplands

Cropland development is primarily a result of grassland management decisions; that being the need to break up old decadant stands of DNC or tame grasses with the thought in mind to revegetate the area with a new high quality stand of DNC, natives or tame grasses. This new stand will hopefully provide a higher quality cover for ground nesting birds and other wildlife species. There are no croplands developed in the district for the purpose of feeding migratory waterfowl. The only other cropland management activity that occurs is the development of the district's food plot program which provides winter food for various resident species.

The food plot program is a small adventure and is handled through various sportsmen's clubs and landowners. Some fields are done as a volunteer activity and some involve crop sharing. The total acreage involved is 81 acres on 7 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:

<u>WPA</u>	<u>Acres</u>
Malm (29)	4
Knutson (123)	16
Maple River (11)	20
Lee Sukut (151)	27
German (123a)	5
Kirschmann (13)	4
Kvigne (260)	5
	<u>81</u>

The farming and establishment of herbaceous nesting cover is accomplished through cooperative and force account farming. Cooperative farming in the district this year involved 11 permittees and 701 acres of land on 12 WPA's. Most of our farming is done utilizing cooperative farming agreements but when smaller acres are involved we accomplish this by force account farming. Force account farming activity involved 4 WPA's totaling 138 acres.

Our cooperative farming agreements are generally for a 3 year period. In year 1 the cooperator is allowed to remove and utilize the hay and then summerfallow the ground the remaining season. Year 2 allows the cooperator to plant a crop and retain 99% of the crop while our share of 1% remains standing. In year 3 the cooperator must plant his crop and in addition he must plant our grass seed. He then receives 75% of the crop and we take 25%. The three year program is a shorter program that we usually like to go with so we can get the area back to grass as soon as possible. WPA's in some phase of farming program in 1985 are as follows:

<u>WPA</u>	<u>County</u>	<u>Acres</u>	<u>Accomplished By</u>
Miller	Logan	30	Permittee
Klein	"	20	"
Grabau	"	20	"
Boschee	"	89	"
Kroll	"	80	"
Muonio	"	10	Force Account
Wolf	McIntosh	38	Permittee
Thurn	"	59	"
Eszlinger	"	64	"
Bender	"	92	"
Laney	LaMoure	24	"
Allison	"	120	"
Liechty	"	65 (no till)	"
Patzer	"	17	Force Account
Gackle	"	16	"
Klettke	Dickey	95	"
	Total	839	

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 may hatch successfully. The actual seeding of dense nesting cover, native grass or interseeding activity (Photo 14,15) took place on 15 WPA's totaling 496 acres.

A technique new to us was tried this year for seeding green needlegrass. Under the advice of Fred Schumacher, a grass seed vendor near Kindred, North Dakota we packed and seeded fields on August 14 which had been force account fallowed. The mixture was 15 lbs bulk (10.95 PLS lbs/acre) green needlegrass and 8 lbs bulk of flax (23 lbs/acre setting and drill). We were told that this timing would have less weed competition than a spring seeding; the flax would provide wind and water erosion protection; that if the green needle came up at all that it was hardy enough to survive the winter and if it didn't get a fall rain it would survive and come up next spring. We are not used to going out and seeing such definite rows of native grass seedlings weeks rather than years after planting (Photo 16).



Photo 14. Interseeding alfalfa into a tame grass field that was hayed, disced and dragged, Wishek WPA, May, 1985 - RAH.



Photo 15. Alfalfa seedlings coming up nicely in tame grass field at the George WPA which was hayed, spiked, and interseeded. July 1985. RAH



Photo 16. Flax/green needlegrass mix planted in August, 1985. Photo taken a few weeks later in Sept., Gackle WPA, 9/85 - RAH.

Seeding was completed on these WPA's in 1985.

<u>WPA</u>	<u>County</u>	<u>Acres</u>	<u>By</u>	<u>Season</u>	<u>Seed</u>
George	McIntosh	29	FWS	Spring	Interseed alfalfa
Wishek	Dickey	26	FWS	"	" "
Koepplin	McIntosh	2	FWS	"	DNC
Young	Dickey	1	FWS	"	"
Bender	McIntosh	92	Permittee	Fall	"
Kempf	McIntosh	60	FWS	"	"
Ernst	Dickey	21	FWS	"	Interseed alfalfa
Kessel	McIntosh	80	FWS	"	Wheatgrass mix
Ziegenhagel	McIntosh	45	FWS	"	Interseed alfalfa
Dewald	McIntosh	30	FWS	"	" "
Wolf	McIntosh	25	FWS	"	Interseed DNC
Moldenhauer	Logan	22	FWS	Spring	DNC
Malm	LaMoure	30	FWS	"	DNC
Gackle	LaMoure	16	FWS	Fall	Green needlegrass
Pazter	LaNoure	17	FWS	"	" "
	Total	496			

Land use activities and alterations have caused drastic changes to the country's grassland ecology and hence the prairie habitat. Agriculture has destroyed much of the area's native prairie replacing it with acres of cropland, acres that are often unprotected and subject to severe wind and water erosion. Although this cropland is often very fertile for agricultural production they are relatively sterile and at times bleak for use by upland nesting waterfowl and other wildlife. Land that has not been broken by the plow is often overgrazed or hayed annually, leaving opportunities for successful nesting very limited. These land use practices make existing grasslands managed for wildlife look like an oasis, and that is exactly how we value the waterfowl production areas within the Kulm Wetland District.

Approximately 60% of the Kulm District acreage is upland composed of native prairie, native seedings, 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 utilize many of the same techniques. Primary methods utilized to maintain good height-density ratios are periodic haying, hay and discing or haying and spiking, interseeding, prescribed burning (Photo 17) 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.



Photo 17. Research Biologist Arnie Kruse inspecting alfalfa response in an earlier burned DNC field. Burned in early April, photo in early June, Mund WPA. - RAH.

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, such as brome, quack, and primarily Kentucky bluegrass. Kentucky bluegrass is the first to grow in the spring and produces a low dense mat of vegetation. 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 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 four primary management techniques used here for suppressing exotic cool season grasses or excessive litter accumulations within the mixed grass prairie; they consist of burning, cattle grazing, a combination of the two, or a haying operation.

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 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 is approximately two to three weeks behind the exotics so they generally have the ability to regrow 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 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. Prescribed fire can be used in the same way. Then the following spring the area can again be crowd grazed or burned if enough vegetation is present 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 (photo 18). 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 the root reserves and opens the door for on-coming natives.



Photo 18. Cattle grazing following a spring burn creates an even distribution of cattle and double pressure placed on the exotics, Clay WPA, May, 1985 - DAL.

7. Grazing

There are approximately 11,000 acres of native grasses and 7,000 acres of tame grasses (Non-DNC) located in the District. These areas, if left alone for a long period of time, become heavily littered and ultimately degrade to a point of lowered value to waterfowl/wildlife species. These areas must be managed properly to promote a healthy vegetative stand conducive to attracting nesting birds and offering secure cover. One such management tool that can be used to manage these grasslands if used properly, is grazing. One should remember, however, that we're in the business of managing wildlife, not feeding cows, and sometimes it looks like we're just feeding cows. Therefore grazing practices utilized for wildlife management should be managed/controlled for grassland cover gains to provide optimal cover for nesting waterfowl.

In the Kulm Wetland District spring crowd grazing is the primary grazing method used in the management of grasslands scheduled for grazing. Other grazing techniques utilized include fall crowd grazing, fall/spring crowd grazing, burn/graze combination and on a limited basis rotation grazing utilizing crowd grazing techniques.

Spring crowd grazing is normally carried out from May-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. From past experiences it might be more desirable to shoot for as high as 2 aum's/acre to get the best results. We plan on trying this technique.

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 2546 acres on 36 WPA's in 1985. This brought in a total of \$14,337.58 in receipts based on \$6.50/aum.

The following chart shows the units grazed and the resulting stocking rates. It is crucial to keep in touch with the grazing cooperator to make sure the 1 aum/acre or higher 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.

1985 GRAZING SCHEDULE

<u>WPA</u>	<u>Acres</u>	<u>Dates</u>	<u>AUM's</u>	<u>Stocking Rate Aum's/acre</u>
<u>McIntosh</u>				
Bauman (308a)	116	4/27-6/15	128.5	1.1
Sackman (112)	33	5/10-6/10	45.1	1.4
Brinkman (315)	71	4/15-6/7	97.2	1.4
Dalke (65)	81	4/18-6/8	121.3	1.5
Koepplin-Aman (142,437)	45	4/15-5/15	52.5	1.2
Kramlich (216)	53	9/1-10/15	70	1.3
	<u>399</u>			
<u>LaMoure</u>				
Jackson (157)	53	5/2-5/25	42.4	.8
Enzinger (13)	70	5/2-6/12	86.7	1.2
Carlson (208)	70	5/1-6/5	86.2	1.2
Cornell (15)	47	4/22-5/30	78	1.7
Wendt (165)	25	5/1-6/10	26	1.0
Riss (151)	40	5/11-6/6	41	1.0
Malm (29)	49	5/1-6/11	48.4	.9
Allison (259)	50	5/1-5/31	60	1.2
	<u>404</u>			
<u>Dickey</u>				
Clay (17)-Burn/graze	31	5/18-6/12	21-Burn/graze	.7
Lazy M (340)	143	6/15-9/1	43	.3
	<u>174</u>			
<u>Logan</u>				
Kautz (156)	70	5/2-6/11	48.75	.7
Larson (12)	105	5/1-6/15	105	1.0
Buchholz (65)	75	5/1-6/10	80	1.1
Kroll (116)	86	5/1-6/10	93	1.1
Abell (145a)	18	5/1-6/10	21	1.2
Koskiniemi (29)	32	5/1-5/31	24	.8
Lahr (396)	61	5/1-5/30	50	.8
Brunner (101)	133	5/1/6/15	98	.7
Karious (243)	63	5/1-6/12	45.5	.7
Ammon (14)	140	5/1-6/12	105.8	.8
Mund (143)	100	5/4-6/12	91	.9
	<u>883</u>			

NORTHERN PRAIRIE WILDLIFE RESEARCH CENTER GRAZING STUDY

<u>WPA</u>	<u>ACRES</u>	<u>GRAZING SYSTEM</u>
Lazy M (340)	55	Spring Crowd
Lazy M (340)	71	Season Long
Lazy M (340)	68	Fall/Spring
Geiszler (277)	74	Spring Crowd
Geiszler (210)	92	Season Long
Geiszler (210)	80	Fall/Spring
Erlenbusch (12)	76	Spring Crowd
Erlenbusch (12)	86	Season Long
Erlenbusch (12)	84	Fall/Spring
	<u>686</u>	

8. Haying

Haying is not a preferred wildlife management tool in many schools of thought but if delayed past normal nesting dates and performed in the right fields it can be an effective tool for rejuvenation of grassland habitats. This year we took advantage of the drought and high demand for forage to manage some problem areas and remove litter from several wetlands.

Haying activities in the District are normally performed in weedy fields, heavily littered DNC fields (Photo 19), tame grasslands, dry wetlands 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.



Photo 19. Management by haying. Right side was hayed in July, 1984 and left side July, 1985. Note immediate response of alfalfa on new cutting. Small blocks may be cut to avoid removing all the cover in one year. Herman WPA, August, 1985 - RAH

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 our new life into decadant DNC fields and tame grasslands. Additionally we often spray for weeds if necessary or interseed into the aerated stand to improve stand compositions. We have interseeded alfalfa, wheatgrass or DNC in order to thicken up poor quality stands rather than enter into a complete farming rotation.

A total of 1,786 acres were hayed in 1985. These 1,786 acres of hay yielded \$8,854.50 in receipts. On some units there is no charge for the hay if it is exceptionally weedy or if the cooperators discs or spikes the field following haying. Bear in mind that this haying was done between mid-July and mid-August during a drought and in no case was more than 25 percent of the cover removed from a WPA. A list of WPA's hayed in 1985 is as follows:

<u>WPA</u>	<u>Acres</u>	<u>Vegetative Type</u>	<u>Cost</u>
<u>McIntosh</u>			
Brinkman (214e,195a)	22	Tame and natives	\$4/acre
Kempf (25)	67	Annuals & sweetclover, Failed DNC	2/acre
Kessel (250)	78	Tame grasses, wormwood	3/acre
Rothfusz (257a)	14	Wetland	5/acre
Ziegenhagel (109,281)	58	DNC, bluegrass	Spike/drag, 1.50/ac
Fischer (234)	4	Wetland	No charge
Jenner (289)	88	Wetland/native fringe	5/acre
Bovey (21)	40	Wetlands & bluegrass	4/acre
Sackman (112)	53	Alfalfa/sweetclover	7/acre
Klein (33)	70	Natives	4/acre
Eszlinger (246a)	15	Alfalfa/wormwood	4/acre
Eszlinger (246a)	29	DNC & wetland	5/acre
Sackman (112)	27	DNC	8/acre
Berlin Church (130, 220,106)	83	Wetland fringe	3/acre
Bender (215)	30	Wetland fringe	3/acre
Werth (438)	18	DNC	8/acre
Dewald (23a)	29	DNC	Spike/drag
Werth (166)	14	DNC/wetland	8/acre
Werth (438)	19	DNC	8/acre
Koepplin (142a)	25	Natives	4/acre
Dewald (100a)	17	Tame grasses	4/acre
Berlin Church (130a,214b)	53	DNC, Brome/wetland	Spike/drag, 3/acre
Wolf (34,176a)	69	DNC/wetland fringe	4/acre
Wolf-Isaak (34)	52	DNC/wormwood	5/acre
Meidinger (436)	24	DNC	8/acre
Fey (144)	65	Wetland	3/acre
Mund (133)	55	Native & wetland	5/acre
Lux (193,204)	40	Wetland	5/acre
Meidinger (436)	13	Wetland	7/acre
WIC (277a)	4	Wetland	5/acre
Schneider (53)	20	Tame DNC	5/acre
	<u>1,195</u>		

<u>WPA</u>	<u>Acres</u>	<u>Vegetative Type</u>	<u>Cost</u>
<u>Logan Co.</u>			
Kautz (156)	15	Quack/wheatgrass	\$7/acre
Muonio (109)	22	Brome/wetland	7/acre
Krueger (23a)	22	Brome	6/acre
Kautz (156)	22	Brome	7/acre
Knecht (397)	12	White top/cattails	6/acre
Knecht (391)	10	White top cattails	6/acre
Wentz (122b)	11	Sweetclover	Exchange for field work
Knecht (397)	6	Brome	5/acre
Boschee (368)	10	White top	Mowing
Moldenhauer (384)	30	Quack, brome, wheatgrass	6/acre
Moldenhauer (384)	18	Quack, brome	7/acre
Ketterling (51)	5	Brome/alfalfa	5/acre
Kusler (148a)	25	White top	4/acre
Wentz (122)	12	White top cattails	N/C
Muonio (109)	15	Quack/wheatgrass	7/acre
Klein (33)	22	Crested wheatgrass	N/C
	<u>257</u>		

<u>Dickey Co.</u>			
Gruneich (360,359)	12	DNC	\$9/acre
Graham (16,31)	45	Tame & natives	4/acre
Herman (374)	35	DNC/wormwood	10/acre
Hille/Brosz (228)	47	DNC/wetlands	9/acre
Ernst (308,354)	34	Brome	6/acre
Ernst/Reinke (354a)	21	Wheatgrass/wormwood	7/acre
Schneider (112)	30	Wetland/native fringe	4/acre
Enger (32)	14	Wetland/native fringe	3/acre
Ernst (308)	22	Tame grass	4/acre
	<u>260</u>		

<u>LaMoure Co.</u>			
Todd (16)	21	Wetland	\$5/acre
Borth (14)	30	DNC	5/acre
Kannowski (10)	8	Wetland	5/acre
Schock (249a)	15	Wetland	4/acre
	<u>74</u>		

Total acres: 1,786

Total Receipts: \$8,854.50

9. Fire Management

Prior to any fire management activities this year several hoops had to be jumped through. First of all our annual prescribed burning plans had to be approved along with approval from the ND Department of Health. Next we had to train our three temporary employees and two volunteers prior to letting them on the fire line. Assistant Manager Hollevoet presented two courses, the S-130 and S-190 Firefighting Techniques and Fire Behavior courses.

Written tests and field practicals were given and all passed (Photos 20,21). The next step was to take the step test, on a volunteer basis. The only permanent employee to pass was the assistant manager along with 3 temporaries and 2 volunteers. This gave us a six man approved burning crew. With this crew we set a new record for the number of acres burned in the District. We went from 0 acres in 1980 to 807 acres burned this year. This is not a great amount of acreage but considering the distance traveled for each burn and the other ongoing activities we are happy with this accomplishment.



Photo 20. Prescribed burning classes were given by Assistant Manager Hollevoet which included field experience and classroom work. Here participants learn about fire behavior and burning techniques. Young WPA, May, 1985 - RAH.



Photo 21. Participants all passed the fire training and were awarded certificates prior to active participation on the fire line, April, 1985 - RAH.

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.

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 (Photo 22), sites planned for harvesting of seed, and areas that need an overall improvement in height/density ratios and nutrients. Burning in DNC, 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. Ignition at the Lee WPA. A native seeding with brome invasion. May, 1985 - DAL.

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 choked basins (Photo 23). The majority of these basins are types III and IV (PEMIC and PEMIF).



Photo 23. Large cattail choked wetland being burned to reduce litter accumulations, open the basin and lower blackbird use; Wolf WPA, 10/85 - RAH

There were fourteen prescribed fires conducted in the district this year and two wildfires occurred on District WPA's. The two wildfires were both started on private lands and spread onto the WPA's. One of the fires was extinguished by a railroad contractor digging a backhoe ditch for a firebreak and letting the area burn out. The other fire was extinguished by District personnel and the Kulm Volunteer Fire Department. The following table lists this year's burning activities.

Prescribed Burns

<u>WPA</u>	<u>County</u>	<u>Burn Season</u>	<u>Cover Type</u>	<u>Acres</u>
Mund	McIntosh	Spring	DNC	56
Lake	"	"	"	40
Higgins	"	"	"	40
Kempf	"	"	Tame grasses	161
Wolf	"	Fall	Type III wetland	55
Clay	Dickey	Spring	Invaded natives & tames	35
Enger	"	Spring	Invaded natives	86
Lee	"	"	Seeded natives	149
Young	"	"	Natives	21
Lee	"	Winter	Type III wetland	3
Cornell	LaMoure	Spring	Invaded natives	51
Patzer	"	Winter	Type III wetland	66
Opp	Logan	Spring	Seeded natives	25
Kautz	Logan	Fall	Type III wetland	19
Total Prescribed Burn Acres				807

Wildfires

Barr	LaMoure	Spring	DNC, natives	148
Gackle	LaMoure	Spring	Natives, type III wetlands	<u>165</u>
			Total wildfire Acres	313

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 absinth wormwood and Canada thistle.

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 hopefully no longer necessary.

Leafy spurge is a 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 late May to mid-June, just prior to seed ripening with a follow-up spray in the fall to kill new seedlings. Several areas of spurge infestation are small patches so tordon is applied via a hand sprayer. This gives excellent control and restricts the kill to individually selected spurge plants. Tordon 2K beads are as effective on real small areas. The bulk of the areas, however, are done with our spray truck and booms. 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 many cases the size of the spurge area is getting smaller. Approximately one man month was spent conducting spurge control on 28 WPA's covering 420 acres of area sprayed. In addition to these 28 WPA's we had 4 units sprayed by contract. Two units totalling 121 acres were aerially sprayed costing us \$326.70 and two units totalling 165 acres were ground sprayed costing \$330.00. Total chemical cost for spurge control was \$4,821.22.

Absinth wormwood is on the increase and combatting this is usually accomplished with 2,4-D in addition to using fire and mowing techniques. Wormwood may be a major problem in the next few years as it is spreading rapidly.

One quack field was sprayed with round-up this year, a 16 acre field at the Moldenhauer WPA. After spraying was completed the area was reseeded to DNC. The Small Unit Management field on the Klettke WPA was fall sprayed with round-up at 1 quart per acre.

Other spraying activity included spraying 199 acres of grassland for wormwood and broadleaf control. All these areas were reseeded in the fall. Another 62 acre field was sprayed with 2,4-D following burning for wormwood control alone. (Photo 24).



Photo 24. Spraying wormwood with 2,4-D following a burn/garaze operation, Clay WPA, 6/85 - RAH

Total chemical use this year was 5 lbs of tordon 2K, 48 gallons of tordon 22K, 30 gallons of round-up, 78 gallons of 2,4-D.

In addition to chemical control, mechanical control resulted in 40.36 miles of roadsides being mowed this year in accordance with township regulations.

The following table summarizes our leafy spurge control efforts:

<u>WPA</u>	<u>Chemical</u>		<u>Acres</u>
LaMoure Co.	<u>Ester LV4, Tordon 22K</u>		
Laney (252)	1 qt/acre	1 qt/acre	31
Kannowski (10)	"	"	10
Wendt (165)	"	"	2
Leistikow (191)	"	"	6
Linnard (242)	"	"	16
Olson (53a)	"	"	.5
Patzer (250)	"	"	1
Lundgren (47)	"	"	1
Schmidt (203)	"	"	5
Haberman (176)	"	"	63
Carlson (208)	"	"	58
Knutson (123)	1 pt/acre	No tordon	103

<u>Dickey Co.</u>				36.
Maple River, Miller	1 qt/acre	1 qt/acre	3	
Sukut (151)	"	"	6	
Young (350, 351)	"	"	2	
Earnest (373)	"	"	2	
Hartman (65a)	"	"	2	
Rutschke (156)	"	"	1	
<u>Logan</u>				
Mayer (408)	"	"	19	
Wilen (84a)	"	"	1	
Knecht (397)	"	"	.5	
Mundt Lake (75)	"	"	.5	
Hochhalter (283)	"	"	.5	
Sperling (168)	"	"	.5	
Kauk (333)	"	"	.5	
Baltzer (70)	"	"	20	
<u>McIntosh Co.</u>				
Wishek (13)	"	"	3	
Dalke (65)	"	"	1	

11. Water Rights

In August of this year a survey was done on our Dakota Lakes NWR to check water conditions. It was observed at that time that the water level was well below our spillway level of which we have a water right providing water up to that level. Further investigation revealed several irrigation intakes were operating out of Dakota Lake Proper. We checked the water rights on 13 permits in the area and found we had the earliest priority date, 8/30/37. We notified the State Water Commission and asked them to exert their authority to accommodate our water rights. Late summer rains came and the lake filled prior to the arrival of the migrating snow goose flock.

13. Easement Monitoring

Easement surveillance is an annual task involving both aerial and ground surveillance. We flew all four counties twice in 1984 (spring and fall) and followed up by flying the counties the fall of 1985 with the exception of Logan county; we flew that county twice in 1985. We ended up with 60 possible violations that need to be ground checked. Early snows following this year's flights put a halt to ground checks in 1985. These will have to be initiated in the spring of 1986.

Easement contacts are becoming more tense and increasingly dangerous with the number of foreclosures occurring and farm activist groups stirring up the farm community. We never receive a warm welcome. (Photo 25). None the less easement compliance and wetland restoration activities were quite successful this year. (Photo 26). Last year we had a record 38 violations and only four remain unresolved, two of these are even older cases. We felt these 4 required more than the ordinary landowner compliance route because of the complexities involved. Negotiations have started on these 4 cases and the Regional Office has been notified of our intentions. The remaining cases are summarized below.



Photo 25. Typical response from landowner when we inform them of an easement violation. LA



Photo 26. Restored wetland basin on easement 219x following plugging of the ditch, 6/85 - JWJ.

Case # 155x:

The case involves a 5.5 acre type IV wetland that has an irrigation pumping facility in it that has been in place since 1977. The landowner pumps 900 GPM out of the wetland in order to irrigate his corn. The landowner has a ND State Water Right to pump ground water (not surface water) but his ground water well only puts out 700 GPM. In order to facilitate proper amounts of water to his irrigation system he pumps the 700 GPM of water out of his well into the subject wetland. From the wetland basin in turn 900 GPM are pumped into the irrigation system. The 700 GPM from the well is allowed to pump a specific period of time to build up before the 900 GPM is removed for the irrigation system. This office has made a cursory review of this operation and plans to issue the landowner a Special Use Permit with several special conditions to preserve the integrity of the wetland. Preliminary contact has been made with the landowner's father and wife and he should be aware that something will have to be done. To conclude; here is what we propose to do with the situation. 1) Notify the State Water Commission and have the landowner apply for a proper State Water Right permit to pump ground water, transfer the water to the wetland, and then be able to pump surface water. 2) If a proper State Water Right is granted this office will then issue a Special Use Permit with appropriate special conditions to protect the wetland.

Case # 141x,1-2:

In this case the Fish and Wildlife Service paid an individual for an easement in 1968 to protect wetlands then in late 1984 the SCS funded and transformed one of the basins covered by the easement into a dairy cattle waste lagoon with 4 large dikes put within the basin. Now the SCS District conservationist has agreed to mitigate or compensate for the loss of the basin by using Federal funds to build a new wetland. Doesn't sound economical but here in the field we want some type of action taken to replace the lost basin and if this sounds feasible to the Regional Office we will arrange to allow a new basin completed as mitigation. We do believe such action should be reported to the SCS officials but right now our concern is the easement contract.

Case # 109x,1:

A minimum of work has been completed on this easement, mainly because of the confusion about the landowner's responsibility. This violation was found in the fall of 1984 and work began in the following spring. When we made our investigation of who the landowner was we kept on getting different names as the land was evidently being handed back and forth and no one had any official title? With continued investigation we finally found that FHA evidently owned the land and leased it to various individuals. Now the current landowner, who did not participate in the violation owns the land which is under easement with a violation existing on it. Our plans are to go to FHA and have them handle it. We don't know what kind of situation we may be getting into. We can't see going after the current landowner as he had nothing to do with it or no knowledge of the easement.

Case # 212x,1-3:

This individual's land was first found to have a violation on it in the fall of 1983. Since that time, following several meetings and demands, all the ditches have been closed, and the three affected wetlands have been restored. Then in the spring of 1985 we found two additional ditches on this individual's property, both directly behind his farmstead. We again contacted the individual but his excuses were convincing this time so we decided to try to help him out. He had recently constructed a new home on his farmstead and wetland #1 was causing his drainage field to back the sewer into his home creating potential health problems to his family. Wetland #2 was stopping him from getting to his livestock yard in early spring. After a couple of meetings we jointly proposed a trade of wetlands. We checked the two proposed wetlands for trade and they were agreeable to this office. Our realty office in Bismarck has since become involved and they are convinced it is a good deal and on a dollar for dollar basis will benefit the government. We plan on pursuing this exchange.

G. WILDLIFE

1. Wildlife Diversity

Many of our units are composed of a variety of habitat types and these cover types are normally well interspersed on the unit. Our Waterfowl Production Areas are also distributed among private lands with varying degrees of land use intensity, from native prairie used as pasture to hayland to intensively cropped agricultural land. This diversity of habitats and their distribution yields a high degree of species variation and density.

This is evident from looking at the variety of resident and migratory wildlife utilizing the District's Waterfowl Production Areas.

2. Endangered and Threatened Species

Two bald eagles were observed on District lands this year. One on the Wishek WPA on 3/18/85 and one on the Kramlich WPA on 3/19/85, both in McIntosh County.

Nesting piping plovers were located at our West Island WPA. One nest was located. (Photo 27).



Photo 27. Piping plover nest discovered at West Island WPA, Spring 85 - LDW.

3. Waterfowl

Waterfowl Production and maintenance is a primary objective of the Kulm Wetland Management District. In an attempt to meet this objective we must continually inventory the various habitats, manage and preserve important habitats, census populations, attempt to lessen the affects of limiting factors, enforce laws, and try new and proven management ideas.

This was another exceptionally dry year in the District. Spring pair ponds were way down and many brood ponds went dry. During our annual random quarter section pair counts in May/June only 31% of the basins were wet. Our counts revealed an estimated 40% decrease in ducks produced in 1985 from the previous year. The 4 square mile counts were not utilized this year. Estimated production for 1985 can be found in the following table based on our random quarter section pair counts. As found in the table blue-winged teal, gadwall and mallard are our primary producers in the District. Looking at these three species and comparing to last year's data we find that blue-winged teal production was down 38%, gadwall were up 4% and mallard production was down 68%. Also important to note is that pintail production was down 52% from 1984. Production figures for 1985 are (Note the use of 18% productivity rate to more closely duplicate what's really happening vs the standard use of 45% productivity):

1985 Estimated Waterfowl Production Based on 31% Basin Acres Wet

<u>Species</u>	<u>Total Pairs</u>	<u>Total Wetland Acres Counted</u>	<u>Prs/Wetland Acre</u>	<u>Wetland Acres (31% Wet)</u>
Mallard	75	524	0.143	5220
Pintail	46		0.088	
Gadwall	122		0.234	
Blue Winged Teal	169		0.323	
Green Winged Teal	7		0.013	
Shoveler	68		0.130	
Redhead	68		0.130	
Canvasback	19		0.036	
Ruddy	25		0.048	
Scaup	17		0.032	
Total	616			

	<u>Projected Pairs</u>	<u>Average Productivity Rate</u>	<u>Brood Successful to Flight Stage</u>	<u>(Hammond) Standard Size Brood to Flight</u>	<u>Estimated Total Ducks Produced</u>
Mallard	747	0.18	134	6	807
Pintail	458		82	6	495
Gadwall	1215		219	6	1313
Blue Winged Teal	1684		303	7	2121
Green Winged Teal	70		13	7	88
Shoveler	677		122	6	732
Redhead	677		122	6	732
Canvasback	189		34	5	136
Ruddy	249		45	4	179
Scaup	169		30	6	183
Total	6135		1104		6786

Spring migration was first noted by the staff this year on March 15, 1985 with a sighting of 8 buffleheads, 10 pintails, and 60 Canada geese at the Bovey WPA. An interesting sighting occurred on 4/10/85 with the observance of 200 white-fronted geese at the Bender WPA. They stayed there for four days. Fall migration peaked with a major movement of snow geese and tundra swans through and out of the District on November 8 through November 10.

Relevant management activities for waterfowl production other than discussed in the preceding habitat management section was quite exciting and varied. We continued to put up duck nesting baskets, goose tubs and nesting bales on selected WPA's throughout the District. (Photos 28,29). We now have 82 duck nesting baskets in place, 9 goose tubs, and 26 nesting bales. We only have 5% use of the baskets with a 50% nesting success rate. (Photo 30). On the bales, however, there was a 46% use rate with 100% nesting success. (Photos 31,32). We have purchased an additional 30 bales this year, received another 20 from the Kulm Rod and Gun Club, and received 12 from an interested landowner. They will be put out this winter.



Photo 28. Bio. Aid Leschisin putting up a duck nesting basket at Hille slough WPA. July, 1985 - RAH.



Photo 29. Goose tub put up at the Ernst WPA in early spring which had a successful Canada goose nest the first year, June 1985 - RAH.



Photo 30. Bio. Aid Leschisin checking nest basket during use/success study, Hille WPA, 7/85 - RAH.



Photo 31. Checking the use and nesting success of our nesting structures was often an arduous task, Wishek WPA, 7/85 - RAH



Photo 32. Forty six percent of our bales were used by nesting waterfowl. This bale had a Canada goose and a mallard nest, both successful, Ernst WPA, 5/85 - RAH

We completed construction of two predator barrier fences to protect upland nesting waterfowl in 1985. (Photos 33,34,35). One was completed on a peninsula at the Bovey WPA and one at West Island WPA. The Bovey WPA went dry this year and no nests were located. In the West Island predator enclosure 36 duck nests were located on 57 acres (1.6 acres/nest) with an apparent success rate of 86.1% and a Mayfield rate of 72.1%. We will continue to monitor these areas in the upcoming years.



Photo 33. Constructing electric predator barrier fences on into the wetland to prevent predators from simply walking around it, West Island WPA, 4/85 - MG



Photo 34. Gate designed into electric fence to facilitate access, West Island WPA, 7/85 - LDW



Photo 35. Completed electric predator barrier fence with cattle fence to protect from cattle on adjacent private land, West Island WPA, 6/85 - LDW.

Ducks Unlimited (DU) has initiated 3 construction projects in October of this year. One is at the Brinkman WPA and consists of 1 peninsula cut-off and adding fill to make a 6 acre island. In addition to this they will be making four new islands, 3 being .9 acres in size and one .1 acre island totalling 8.8 acres of new nesting islands. (Photos 36-39). Project number two is at the Wentz WPA. This project will involve peninsula cut-offs and construction of four .1 acre islands. This will result in the creation of 14.2 acres of nesting islands at the Wentz. The third DU sponsored project has been initiated at the Klettke WPA and is part of the Small Unit Management research project. This is an electric predator barrier fence project and will protect 65 acres of DNC to create a secure "upland nesting island for waterfowl. (Photo 40).



Photo 36. Ducks Unlimited (DU) contractor digging peninsula cut-off trench in frozen lake bed at the Brinkman WPA, 12/85 - RAH.



Photo 37. DU project with large selection of equipment digging trenches and filling trucks for nesting islands, Brinkman WPA, 12/85 - RAH



Photo 38. Adding fill to nesting island in frozen lake bed, Brinkman WPA, 12/85 - RAH.



Photo 39. Construction was often difficult and messy when various natural springs were encountered during excavation of peninsula cut-off, note standing water at 10-15^o below temperatures, Brinkman WPA, 12/85 - RAH.



Photo 40. Ducks Unlimited contractor erecting electric predator fence for use in Northern Prairie Wildlife Research Center upcoming research project, Klettke WPA, 10/85 - LDW.

We expanded our trapping and nesting studies this year and came up with some interesting data. We conducted predator removal activities on 10 WPA's capturing 141 animals and nest search activities on 18 upland areas and 28 islands. (Photos 41,42).



Photo 41. Prepared for war, no, just island nest searching by hand dragging cable. Several islands were searched by manual dragging, 6/85 - LDW.



Photo 42. Several hundred acres were nest searched using three 3-wheeled cycles pulling a one hundred foot chain on areas trapped and not trapped. Various readings and recordings were noted at each nest site, 6/85 - DAL.

On the upland nest search areas twelve were controls or non-treated and 6 of the areas had predator removal activities. In addition to this NPWRC dragged 3 WPA's in their study. We had a Mayfield nest success of 16.8% on the non trapped areas compared with 55.6% Mayfield success on the trapped areas. Islands had a combined Mayfield success rate of 59.3%. The following tables are a summary of our trapping activities and nest dragging results.

1985 Trapping Summary of Kulm WMD !!

<u>WPA</u>	<u>Raccoon</u>	<u>Skunk</u>	<u>Franklin Ground Squirrel</u>	<u>Fox</u>	<u>Badger</u>	<u>Feral Cat</u>	<u>Totals</u>
Bovey	9	4	-	2	-	-	15
Brinkman	1	2	1	-	-	-	4
Ernst	6	6	-	1	2	-	15
Kautz	19	14	3	-	-	-	36
Kramlich	6	6	-	-	-	-	12
Krueger	7	6	-	-	-	1	14
Moldenhauer	3	9	6	1	-	-	19
Mund	2	2	3	-	-	-	7
Mundt Lake	5	4	1	-	-	-	10
Olson	-	-	-	1	-	-	1
West Island	<u>1</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>-</u>	<u>-</u>	<u>8</u>
TOTALS	59	57	15	7	2	1	141

(Trapping Summary Con't)

Trap Types Used/Captured Animals

51.

<u>Species</u>	<u>Live Trap</u>	<u>Conibear Trap (220)</u>	<u>Leghold</u>	<u>Other</u>
Raccoon	38	19	-	2
Skunk	27	26	3	1
Franklins Ground Squirrel	-	14	-	1
Fox	-	1	-	6
Badger	-	-	2	-
Feral Cat	-	<u>1</u>	-	-
TOTALS	65	61	5	10

Sex of Trapped Animals

<u>Species</u>	<u>Male</u>	<u>Female</u>	<u>Unknown or Not Checked</u>
Raccoon	36	17	6
Skunk	28	20	9
Franklins Ground Squirrel	4	4	7
Fox	2	3	2
Badger	-	1	1
Feral Cat	-	<u>1</u>	-
TOTALS	70	46	25

COMPARISON OF DUCK NESTING - KULM - 1985

	<u>All Islands</u>	<u>NPWRC Research Pastures</u>	<u>Uplands (Not trapped)</u>	<u>Trapped Uplands</u>
#Fields or Islands	28	15	12	6
Acres Searched	98	1076	599	269
#Nests	119	96	44	23
Acres Per nest	0.8	11.2	13.6	11.7
Mayfield Success	59.3	16.8	16.8	55.6

DUCK NESTING SUCCESS - KULM WMD - 1985

	<u>All Islands</u>		<u>Uplands (Not Trapped)</u>		<u>Trapped Uplands</u>		<u>NPWRC Research Pastures</u>	
	<u># Nests</u>	<u>% Success Apparent/Mayfield*</u>	<u># Nests</u>	<u>% Success Apparent/Mayfield</u>	<u># Nests</u>	<u>% Success Apparent/Mayfield</u>	<u># Nests</u>	<u>% Success Apparent/Mayfield</u>
Gadwall	64	64.1/72.9	17	30.8/8.7	12	75.0/52.7	12	58.3/40.3
Blue-winged teal	12	58.3/26.7	17	41.1/28.2	6	100.0/100.0	69	52.3/17.3
Mallard	25	64.0/49.8	4	25.0/12.8	3	33.0/7.8	6	16.7/8.5
Shoveler	3	66.7/100.0	4	75.0/55.1	0	-----	8	0/0
Pintail	7	85.7/72.7	2	0.0/0.0	1	100.0/100.0	1	100.0/100.0
Lesser Scaup	7	71.4/58.9	0	-----	1	100.0/100.0	0	-----
Wigeon	1	100.0/100.0	0	-----	0	-----	0	-----
ALL DUCKS	119	65.5/59.0	44	36.4/16.8	23	78.3/55.6	96	34.0/16.8

* Nests found "terminated" were not used for Mayfield figures.

Other waterfowl management surveys or inventories conducted this year included an island inventory and canvasback habitat use survey. An inventory of our island habitats revealed we have 44 natural islands in the District and 3 constructed islands. After our Ducks Unlimited projects are completed in the winter of 1985-86 we will have a total of 16 constructed islands in the District.

A canvasback habitat use survey was conducted by the field staff this year. This consisted of incidental sightings while going to and from various work projects. There was a total of 42 sightings. The data we gathered from this roadside survey is tabulated below.

SUMMARY - CANVASBACK HABITAT USE

<u>Land Ownership</u>	<u># of Sightings</u>	<u>Adjacent Land Use Type *</u>	<u># of Sightings</u>
Private	20	Fallowed or	0
State	0	Plowed Field	
Federal	19	Stubble	0
Easement	3	Ungrazed grassland	10
		Grassland pasture	8
<u>Wetland Type</u>	<u># of Sightings</u>	Haycrops	4
1	0	Grain Crops	3
3	8	Sunflowers	0
4	28		
5	6		

* Not reported on
17 of 42 sightings

<u>Wetland Size (Acres)</u>	<u># of Sightings</u>	<u>Bird Description</u>	<u># of Sightings</u>
0-3	6	Pairs	28
3-6	6	Lone drakes	23
6-12	8	Group of drakes	6
12-30	12	Lone Hens	1
30-60	6	Hen w/brood	5
60+	4		

<u>Dominant Emergent Vegetation</u>	<u># of Sightings</u>	<u>Proportion of Water Surface Covered by Emergents (%)</u>	<u># of Sightings</u>
None	0	10	14
Whitetop	2	25	16
Cattail	13	50	5
Bulrush	18	75	4
Mixed Bulrush-cattail	9	85	3
		100	0

Little or no survey work is done on these species. Until demand warrants, only incidental information can be taken on a district this size. Casual observation is the only survey method currently used; eared grebes, black-crowned night herons and cormorants were the most frequently observed species. One cormorants nesting island was devastated when low water conditions allowed predator access. (Photo 43). Several other species were also observed. We plan to expand our information on colonial nesting species if manpower is available.



Photo 43. Cormorant nesting colony which was totally destroyed when low water conditions allowed access to the island by predators, Wentz WPA, 6/85 - DAL.

8. Game Mammals

The District's WPA's are very important to the production and survival of many game mammals in the area. WPA's offer excellent cover for production, resting and forage and 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. Of high importance are the wetlands that provide crucial cover during hunting season along with winter survival cover. 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 reaching record populations. Mild winters, good cover, and lots of sunflowers and corn may be the main reasons for this population boost. (Photo 44).

Triplets are a common occurrence during early summer and almost every doe has twins. Hunting success has been very high. Winter yards have 50-100 head of white-tails scattered on various WPA's that offer secure cover.



Photo 44. District Waterfowl Production Areas provide excellent fawning grounds for white-tail deer populations, Klettke WPA, 6/85 - RAH.

10. Other Resident Wildlife

Upland game bird hunting is an important sport in North Dakota and FWS WPA's are an important factor to its success by offering excellent nesting cover and public hunting. 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 currently use in gauging population numbers and these are opinions only. Currently no attempt is made to complete any census on these species.

Pheasant numbers are continually increasing with several years of mild winters and it appears the bird is expanding westerly in isolated pockets of the coteau. Hunting success was above normal. Hungarian partridge are scattered throughout the District and appear to be doing very well. Sharptail numbers appear slightly down from last year but there are good populations in isolated areas.

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

We continued our involvement in the Giant Canada goose restoration program in cooperation with the ND Game and Fish Department. Giant Canadas were trapped at Audubon NWR by the ND Game and Fish Department and transferred to Kulm for release. Two of our Bio Aids assisted in the trapping and transported the geese back. (Photos 45,46). Seventy six geese were released; the Kautz WPA received 37 birds and the Kesselberry Lake WPA received 39. We hope to continue this program in future years. In order to aid in the expansion of the breeding populations we have been putting up goose tubs and nesting bales.



Photo 45. Giant geese trapped at Audubon prior to banding and transporting, 7/85 - MG.



Photo 46. Giant Canadas being released at Kesselberry Lake WPA, 7/85 - RAH.

A summary of the past three year's releases of Giant Canada Geese is listed below.

<u>Year</u>	<u>WPA</u>	<u># of Geese Released</u>
1983	Lake McKenna	35
1983	Wolf	46
1984	Moldenhauer	34
1984	Brinkman	33
1984	Carlson (from Wahpeton)	25
1985	Kautz	37
1985	Kesselberry Lake	39

14. Scientific Collections

The University of Minnesota had a capture team in the District trying to catch red fox pups in the den. They plan on utilizing the live pups in an upcoming project dealing with stress and trapping. Wetland district staff assisted the team with maps and locations of known dens. (Photo 47).



Photo 47. University of Minnesota fox pup trapping team catching pups to be used in trapping/stress research, - LDW.

15. Animal Control

Waterfowl production, a primary objective of the wetland district, is being hampered by many factors. Wetland losses and impacts, native prairie and hayland conversion or just total habitat destruction are the primary causes for low production figures. In conjunction with this habitat loss

predation losses are high for nesting waterfowl as predator and prey are concentrated on the remaining habitat. The Regional Office along with research personnel and field people believe that predation management may be necessary to increase waterfowl production to a more desirable level. To test this theory we prepared an environmental assessment and predator trapping/nesting study and after approvals applied our techniques in the field. We trapped predators (photo 48) on 10 WPA's using live traps, conibears, and leg holds and captured a total of 141 animals (see section G.3 for more information. We then nest searched 868 acres of varied habitats on trapped and control areas. In addition to this NPWRC nest searched 1076 acres so we were able to get good control data on what nest success is in most parts of the District. Overall results showed Mayfield nest success to be 16.8% for all ducks combined in our non-trapped areas and Mayfield success ran 55.6% on the trapped areas (see Section G.3)



Photo 48. Predator trapping was accomplished using live traps, conibears, and leg hold traps. Raccoon and skunk were the two primary predators caught, 6/85 - DAL.

We also participated in "passive" animal control with the completion of two electric predator barrier fences and construction started on a third fence. These fences are made of solid 1" mesh and stand 5' tall and have one foot of mesh buried in the ground. Assembled on the outside are 4 strands of high tensile wire charged with a high voltage-low amperage charge that will greet any animal that desires to climb over or jump the structure with an unpleasant shock. These are constructed at the Bovey and West Island WPA's and the third is being sponsored by Ducks Unlimited and is being built at the Klettke WPA. (See photos 33-35).

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

Another blessing occurred this year as we had no snow goose die-off occurring at Twin Lakes near LaMoure. The two previous years we experienced a snow goose die-off which killed 1,000 birds each year. The reason for the die-offs was attributed to necrotic enteritis which was caused by a toxin, Clostridium perfringens type A. This year we worked closely with the resource contaminant biologist in the Bismarck Habitat office to monitor the area weekly and record field observations and unusual findings. During one of our weekly observations we immediately reported six sick birds and collected these for diagnosis at the Madison Health Lab. No other fatalities or sickness occurred after that and freeze-up came along and ended our worries. A necropsy report on two geese we sent in was later received from the National Wildlife Health Laboratory. There were no significant findings reported in either bird. The general diagnosis was nonsupportive enteritis; that is, the enteritis was of an undetermined origin. Clostridium perfringens Type A, suspected of being the cause of snow geese deaths in 1983 and 1984, was isolated from the intestine and liver of one bird. Vibrio cholera is an enteric pathogen which was also isolated and could, in combination with the Clostridium toxin, be responsible for the necrotic enteritis. Brain cholinesterase levels were normal indicating organophosphate/carbamates cannot be implicated as the cause of death.

H. PUBLIC USE

1. General

The Kulm Wetland Management District has a primary objective of waterfowl/wildlife production and maintenance. Most of our annual budget goes into the management of grassland or wetland habitats, population management activities, construction and maintenance, law enforcement and resource protection/preservation work. The bulk of our public relations and public use is centered around outdoor classrooms for students on environmental tours, talking and working with various sportsmens groups, meeting with county commissioners and township boards, hunting and trapping information, and the use of waterfowl production areas for wildlife observation and recreation. We have no interpretive exhibits or kiosks, camping is prohibited and we have no interpretive trails. The following sections highlight our public use/public relations activities.

2. Outdoor Classrooms - Students

Biological Technician John Jones 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, wildlife management and the importance of wetlands in waterfowl production are the

areas emphasized. (Photo 49). This program also gives us a chance to communicate with ASCS, SCS, county agents and teachers. The outdoor classrooms are located throughout the counties mentioned in State Parks, Recreation areas and Federal Waterfowl Production Areas. Participation in this annual event gives us the opportunity to communicate conservation issues to most of the youth in the District.



Photo 49. Approximately 450 7th grade students in a 6 county area were instructed wildlife conservation, waterfowl ID, and wetlands values during our involvement in environmental education tours, 4/85 - JWW.

7. Other Interpretive Programs

Most of our public use or public relations work is best described under the category of other programs. This typically includes giving presentations or assisting various sportsmen's groups, Lions Clubs, 4-H groups, schools and various other groups. In addition we are continually answering questions regarding farming, grazing, haying, wetland easements, burning, etc.

We also meet annually with all the county commissioners to discuss any potential needs or problems, weed control, revenue payments, drainage and easements. Meetings are also held with various township boards, county water management boards and weed control boards.

Participation and local involvement with community groups is also important to spread the word on Fish and Wildlife Service activities and conservation issues and the District Staff participates in several community efforts. West is president of the Kulm Rod and Gun Club;

Hollevoet is on the Land Management/Land Use committee of the Kulm Rod and Gun Club, a member and training officer of the Kulm Volunteer Fire Department, and a member of the Board of Directors at the Kulm Country Club; Jones is vice president of the Kulm Lions Club.

Another function important to the local communities is the hunter/safety education program. Hollevoet and Jones are certified hunter safety instructors and annually participate by holding a one week night course for interested students each March.

8. Hunting

Hunting activity is the primary recreation activity that occurs on the District's Waterfowl Production Areas. Major game species include waterfowl, white-tailed deer, pheasants, sharp-tailed grouse, partridge, red fox and coyote. Waterfowl production areas provide some of the best cover in the area and hunting can be excellent at times.

The drought conditions that occurred again this year resulted in waterfowl hunting to be near bust conditions. There were probably 90% fewer hunters in the District this year simply because there was no water and no ducks.

White-tailed deer and pheasant hunting was excellent for this part of the state. White-tail populations are at record levels and the pheasant population has been increasing the past several years. Waterfowl Production Areas get hit hard by walking hunters for these two species. Sharptail grouse hunters had to work hard for their birds but many of the working hunters were successful.

Coyote numbers are on the increase and furbearer hunting is a common sport during the winter months. With the increase in coyote numbers many hunters have the opportunity to take both red fox and coyote during their winter hunts.

10. Trapping

All of the District's WPA's are open to trapping and most of the units are in somebodies trapping district. Major species trapped are red fox, muskrat, mink, and coyote. Although the WPA's are open to trapping no vehicle use is allowed so only walking trappers which are few, trap the interior of the larger units. Fur prices were down this year and most trappers quit trying by early November.

For information on the District's Predator Management see Section G.15 and G. 3.

11. Wildlife Observation

No information or data is kept on this subject but through visual observation and reports we know that the District's WPA's are utilized quite frequently by numbers of people to observe ducks, geese, big game, upland game and many non-game species.

15. Off-road Vehicling

This is one unauthorized activity that is very hard to pin down. We have 182 WPA's scattered over four counties so enforcement of ORV use is almost impossible. We normally find the busted gate or fence and a set of tire tracks and that's it.

Most of our ORV activity comes from adjacent neighbors and farmers, partying high schoolers, deer hunters, poachers and of course we ourselves are to blame from weed spraying and fencing operations.

The tracks are an aesthetic eyesore, create predator lane's and just plain destroy habitat. We have tried to combat the problem with signs, fencing, gates and locks but if people want in they just go.

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) Game Law enforcement.

Wetland easement enforcement was previously discussed in section (f.13). Two time easement violators or violators with knowledge of the easement contract are fined \$100.00, depending on circumstance. There was one such ticket issued in 1985. WPA enforcement usually involves trespass grazing, trespass farming, dumping, off-road vehicle use and destruction of government property. These types of violations require a lot of surveillance and investigation but very few tickets are written; enough information is hard to find in order to finalize a case. Cases this year in this category included:

<u>Violation</u>	<u>County</u>	<u>Fine</u>
Cattle trespass	Logan	\$100.00
Cattle trespass	McIntosh	100.00
Cattle trespass	Logan	35.00

Drought conditions and no waterfowl meant few hunters in the District. The first two weeks we worked many hours and found a handful of hunters with that many ducks so we moved into other work categories. No game violations were written this year.

I. EQUIPMENT AND FACILITIES

1. New Construction

Construction activities are directed toward meeting station goals, needs, or requirements.

Five and seven tenths miles of new 3 strand barbed wire fence was constructed in 1985. Fencing is completed for habitat protection or to facilitate grazing management. Fencing this year took place at the following WPA's:

<u>WPA</u>	<u># of miles</u>
Henne	.25
Boschee	.125
Dewald	.75
Rutschke	.25
Knopp	.125
Meidinger	2.4
Ernst	.25
Reinke	1.25
Kannowski	.3
	<u>5.7 miles</u>

Other new construction activities included building of a sidewalk to the oil storage shed and the construction of a 24' x 30' double door heated storage garage to store all our chemicals and our fire trucks. A new road was constructed from our shop to our firing range as the previous road was on a side hill and erosion problems were developing. A chain link fence was constructed behind one of our pole barns to allow for more secure storage of materials, and storage shelving was constructed in the shop for better utilization of room.

Construction activities that were mentioned previously are the construction of 3 electric predator barrier fences, three waterfowl nesting islands and the 3 Ducks Unlimited sponsored projects (see Sections F&G).

2. Rehabilitation

The Kulm Wetland District moved into a new office this year. The Kulm Credit Union remodeled the building we shared with them because they needed more room. To solve the problem they remodeled the entire building and put us in the back with new offices. We actually lost square footage which made GSA happy but we now have more efficient space with a new look.

3. Major Maintenance

Spring fence checks and repair were completed on several of our Waterfowl Production Areas prior to the start of the spring crowd season. This activity permitted grazing on 2,546 acres of land with few problems.

We also repaired a leak caused by badgers in the dam at Bonehill NWR using our backhoe, digging a trench in the leak area and backfilling it.

4. Equipment Utilization and Replacement

Maintenance worker Jim Steinmetz performed several duties which permitted continuous and safe operation of our service fleet. These activities included:

- Replacing an engine and overhauling the transmission and clutch on our 1 ton spray truck.
- Made replacement tailgates for older vehicles.

- Assembled and installed rear window guards on all new pickups.
- Built ramps for loading and unloading 3 wheeled ATC's in pickups.
- Re-designed our equipment trailer from a tongue hitch into a gooseneck trailer.
- Installed fuel tanks with electric pumps on service truck.
- Routine maintenance on all our vehicles every 3,000 miles.

Major equipment replacement and acquisition this year included two S-10 4 wheel drive compact pickups, one compact jeep Cherokee wagoneer, a 13' 350 HP Panther airboat and trailer, (Photo 50), three 125cc Honda ATC's with trade in of two 110's, a 10' no-till Haybuster drill (Photo 51), 2 electric door openers for the shop doors, and four inch to the mile aerial photo coverage for the coteau portion of the District from NWI film.



Photo 50. New 13' Panther airboat with 350 HP engine purchased for wetland management work and disease control, Dakota Lake NWR, 8/85 - RAH.



Photo 51. Haybuster 107 no-till drill purchased for seeding activities in the District, LDW.

5. Communications Systems

Two small 40 watt State frequency radios and one new refuge radio were purchased this year to facilitate communications in the field and to provide added safety during our law enforcement operations.

7. Energy Conservation

We have lowered the cost of heating our shop by replacing our electric and propane hot air heating system with an overhead propane radiant heating system. The system actually keeps the concrete floor warm and warms objects through its heating capabilities. To aid in lowered fuel consumption we also weatherized the shop doors and laid styrofoam insulation underground around the entire shop foundation.

We have also installed an anemometer out at the shop to measure wind patterns to see if wind power might be a viable energy source alternative.

Another energy conservation measure we have taken is replacing our older full size trucks with compact S-10 size pickups that have economical six cylinder engines.

J. OTHER ITEMS

1. Cooperative Programs

One cooperative endeavor we participate in involves the ND Game and Fish Department, Ducks Unlimited, Northern Prairie Wildlife Research

Center, a private landowner and the Kulm Wetland Management District. The project is an electric predator fence of which Ducks Unlimited supplied the material for construction, the Kulm District put up the fence, maintains it, and owns and manages 14 acres on an existing island. The ND Game and Fish Department leases the remaining portion of the 50 acre island from a private landowner under the State's habitat program and Northern Prairie is conducting research on duck recruitment and densities on the protected area. The project is working well.

3. Items of Interest

- Okerlund attended an Administrative Workshop in Bismarck on April 22-23.
- We saved \$1,000.00 net in shipping costs by picking up our airboat ourselves instead of having the company ship it.
- West, Hollevoet and Jones attended the Southeastern Crime Conference at Grand Rapids, ND in July.
- Hollevoet was a member of the Mallard Symposium Planning Committee which was sponsored by the ND Chapter of the Wildlife Society.
- West and Hollevoet attended the course entitled "Supervision and Group Performance" on Aug. 26-30 in Bismarck.
- Edna Okerlund received a special achievement award for her long and continued high quality performance and exceeding the requirements of her job. Good Job! (Photo 52)



Photo 52. Refuge Assistant Edna Okerlund receiving a special achievement award from Manager West. Edna has been at Kulm since the station opened in 1971. The station could not operate without Edna's dedication and knowledge, 1/85 - RAH.

4. Credits

The entire report was written by Assistant Manager Roger Hollevoet. Edna Okerlund organized and typed the report.

K. FEEDBACK

Habitat destruction continues at an alarming rate in the number one duck producing state in the continental United States. Large acreages of native grassland were plowed down this fall, probably in response to pressure by lenders and to the upcoming farm bill, and wetland deterioration and destruction continues. The primary causes for wetland losses in North Dakota include drainage for crop production and discharges of materials into wetlands (e.g., herbicides, fertilizers, agricultural filling for development, siltation and sedimentation). Twenty thousand acres are reported to be lost in North Dakota annually.

What are the impacts of these losses? Well, recent drought in the Prairie Pothole Region has brought about national concern. The FWS reduced the duck harvest by 25% in an attempt to offset the reduced populations and received a lot of complaints from advocates of the stabilized regulations system. Yes, drought brought on these problems along with a reduced habitat base. Now, look into the future with the continued loss of wetlands. Loss of a large percentage of our wetland base is a real drought and much more dangerous however as it is a permanent drought. Then what do we cut the harvest by? The loss of wetlands and grassland habitat not only threatens our waterfowl populations but all prairie wildlife along with a long list of impacts to the land itself, groundwater depletions, flooding problems, accelerated erosion and pollution, etc.

Bit by bit, acre by acre, we seem to be losing the battle of habitat preservation in North Dakota and throughout the Prairie Pothole Region.

BONEHILL NATIONAL WILDLIFE REFUGE

Bonehill Refuge is an easement refuge near Jud, ND 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 canvas-backs. The major staging area is created by a dam constructed on Bonehill Creek. Last year a leak was discovered about half way down on the earthen dam which raised some immediate concern. 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. Instead of waiting for a Regional Office decision we took our crews to the area this year and our backhoe to trench out the weak area. We then backfilled and tamped the area.

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

	<u>Acreage</u>	<u>Percentage</u>
Cropland	442	69%
Pasture	113	18%
Wetland	65	10%
Domestic	<u>20</u>	3%
Toatal	640	

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.

Goose populations were low this year and only in the area for a short time. The bulk of the snow geese spent the fall in the northern part of the State and when winter winds moved in the birds packed up and moved right through our area.

Drought conditions and upstream diversion of water for irrigation severely lowered the lake level this year. Levels were well below the spillway level so we reported the incident to the State Water Commission. Late summer rains later came along with a release from an upstream dam to bring the water level up prior to the fall flight of birds. In future years we hope the State Water Commission will honor our water right and regulate upstream water users.

A land inventory of Dakota Lake NWR was completed last year. The land use pattern is as follows:

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

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. We since have showed the project to Ducks Unlimited and they love it, saying it's like a traditional DU project. EA's will be submitted and hopefully the project will be rolling sometime in 1986.

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 season.

Management on the unit this year consisted of a food plot cooperative farming agreement covering 20 acres.

A land use inventory was completed recently and the land use patterns for the refuge are as follows:

	<u>Acres</u>	<u>Percentage</u>
Cropland	662	58%
Wetland	148	13%
Pasture	42	4%
Grassland	232	21%
Riverine	38	3%
Domestic	<u>4</u>	1%
Total	1,126	

ULM
Wetland
Management
District





INTRODUCTION

The Kulm Wetland Management District lies in the heart of the prairie pothole region of the United States in south central North Dakota. Managed by the U.S. Fish and Wildlife Service, it provides wetland areas necessary for waterfowl feeding and spring nesting. During migration, hundreds of thousands of waterfowl use the marshes for feeding and resting during their long flights.

Kulm is a large district, containing about 42,000 acres of purchased lands which are called Waterfowl Production Areas (WPAs). Easements protect another 97,000 acres of wetlands from draining, filling and burning. The District also manages three refuges on private lands. These refuges are under easement to the U.S. Fish and Wildlife Service and are Dakota Lake, Bonehill Creek and Maple River. The sale of duck stamps to the Nation's hunters and wildlife conservationists financed purchase of these lands.



HISTORY

About 10,000 years ago, glaciers covering the upper Midwest began to melt, leaving behind a load of rock and dirt that created rocky rolling hills and numerous shallow lakes. In the Dakotas, this glaciated land has become known as the Missouri Coteau or hills of the Missouri. Grasses evolved and carpeted the land. Bison, pronghorn, elk, grizzly bear and wolves were found here in abundance. Millions of waterfowl and ground nesting birds thrived in the grasslands and small wetlands.

Early tribes, including the Sioux, found excellent hunting in the area. Later settlers found wildlife still quite abundant, but found life on the Coteau very difficult with the rocks, hills, wildfires, bitter cold and periods of drought to contend with. By the turn of the century the land was settled. As one door cracked open to today's intensive farming and ranching, another door began to close on the wildlife abundance of earlier days.

The thundering herds of bison, clouds of migrating waterfowl and vast expanses of grasslands that stretch from horizon to horizon will never be seen again. But through protection and management of remaining wetlands and habitat, a portion of the wildlife that was once produced and sustained by the prairie will be maintained for our children and for future generations to enjoy.

WETLAND VALUES AND FUNCTIONS

Wetlands are unique habitats. As areas for wildlife, they provide a diversity of habitat, food, cover and water. As a result of high wildlife use, wetlands provide a variety of educational and recreational benefits to people. Many wetlands in the district are toured by school groups and offer sites for scientific/educational study. Recreational opportunities include hunting and trapping, bird watching, photography, and the opportunity to enjoy the scenic beauty of a prairie setting.



Wetlands also provide significant values in the area of flood and erosion control and water quality. Wetlands retain water during high flow periods, slowing it down and allowing it to filter into the groundwater system. This replenishes wells, soil water and aquifers. Wetlands also collect many nutrients and sediments to aid in water purification, and provide the basis for important agricultural functions such as haying and grazing, especially during dry years.

The cycle of wetlands drying occasionally and then reflooding is important to keep wetlands productive. Dry periods expose pond bottoms to sun and air which help decompose vegetation into nutrients that can be used by plants and invertebrates. Without the dry cycles, decomposition of plants removes oxygen from the water. Low oxygen water reduces or eliminates the aquatic invertebrates that are the most important food for ducks in the spring.

MAJOR HABITAT TYPES

WPAs within the Kulm Wetland Management District offer diverse habitat that can be protected and managed to attract and produce migratory waterfowl, migratory non-game birds and resident wildlife.

Wetlands vary in size, permanence and wildlife they benefit. Temporary wetlands provide pairs of ducks with territories and with high protein foods needed for egg production. Wetlands which are dry by fall provide cover for upland game birds and white-tailed deer. More permanent wetlands are habitat for migrating waterfowl, other birds and furbearers.

The uplands of the district are primarily grasslands. These can be divided into native grass, dense nesting cover and tame grass habitats. The mixture of these types of upland cover, as well as the several types of wetlands, creates an area that provides for the needs of many wildlife species.



WILDLIFE MANAGEMENT

Creating habitat diversity is one of the many management functions of the U.S. Fish and Wildlife Service. Prescribed burning, spring or fall grazing, planting dense nesting cover, constructing new wetland areas, improving or restoring wetlands, haying, placement of duck nesting baskets and goose nesting tubs, wildlife food plots, water control structures, and the planting of native grasses are but a few of the management techniques used in managing the district.

Managing for wildlife also provides a number of economic and recreational benefits for people. Grazing and haying, which are followed by a rest in the management of grasslands, help to stimulate the height and density of grasses for better nesting cover. Their use in turn supplements forage available for livestock.

Receipts to the Government from activities such as haying and grazing become part of the annual payment made to the four counties of the district in lieu of taxes. The payment rate to the counties often exceeds the taxes a private individual would pay on the same land.

Cooperative farming agreements are another economic use of Refuge and Wetland Management District lands. Farmers produce crops on land which will be reseeded to grass. This controls noxious weeds and prepares the seedbed for planting the nesting cover. The gross value of crops harvested has exceeded \$80,000 in some years.

Left to right:

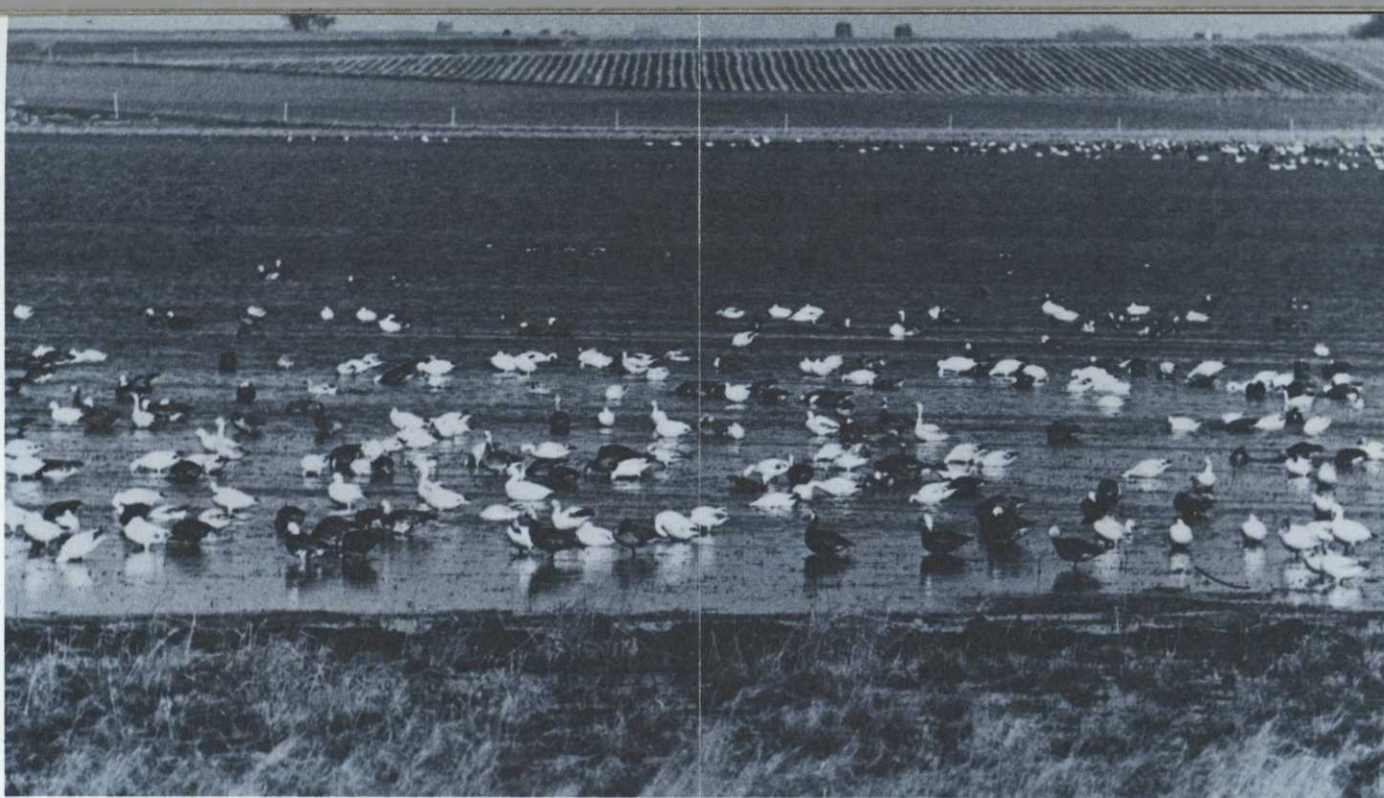
Strutting sharp-tailed grouse Dean Biggins, USFWS photo

The wily ringneck Kent Olson, USFWS photo

Canvasback hen on nest Jerome Stoult, USFWS photo

Canada geese USFWS photo





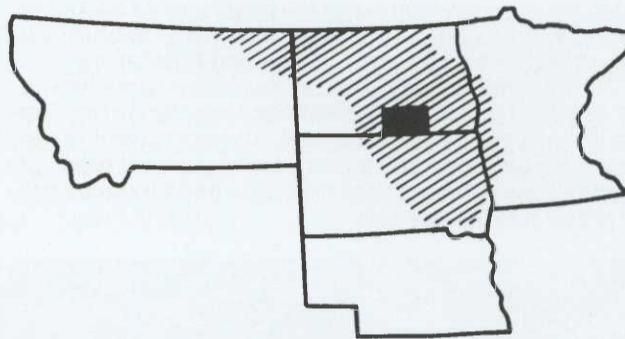
Blue and snow geese Kent Olson, USFWS photo

RECREATIONAL OPPORTUNITIES

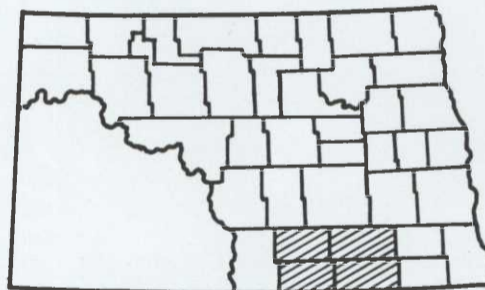
Waterfowl Production Areas are open to many public activities year-round. Hunting and trapping are permitted under applicable federal and state laws and state season dates and bag limits. Foot travel is permitted and encouraged. If you have the time, a short walk on a WPA often reveals a fascinating world of wildlife. Birds and mammals native to the prairies can easily be seen. During migration large numbers and diverse species of bird life make WPAs a bird-watcher's paradise.

While walking is encouraged, use of motorcycles, jeeps, snowmobiles and other motorized traffic is strictly prohibited. Camping is not permitted on the WPAs but motel and camping accommodations are available at most cities in the district. Excellent campgrounds can be found at Beaver Lake State Park in Logan County, Doyle Memorial State Recreation Area south of Wishek and LaMoure County Memorial Park at Grand Rapids, North Dakota. Visitors are invited to stop at the Wetland Management District Headquarters in Kulm, North Dakota for additional information regarding activities on Fish and Wildlife Service lands.

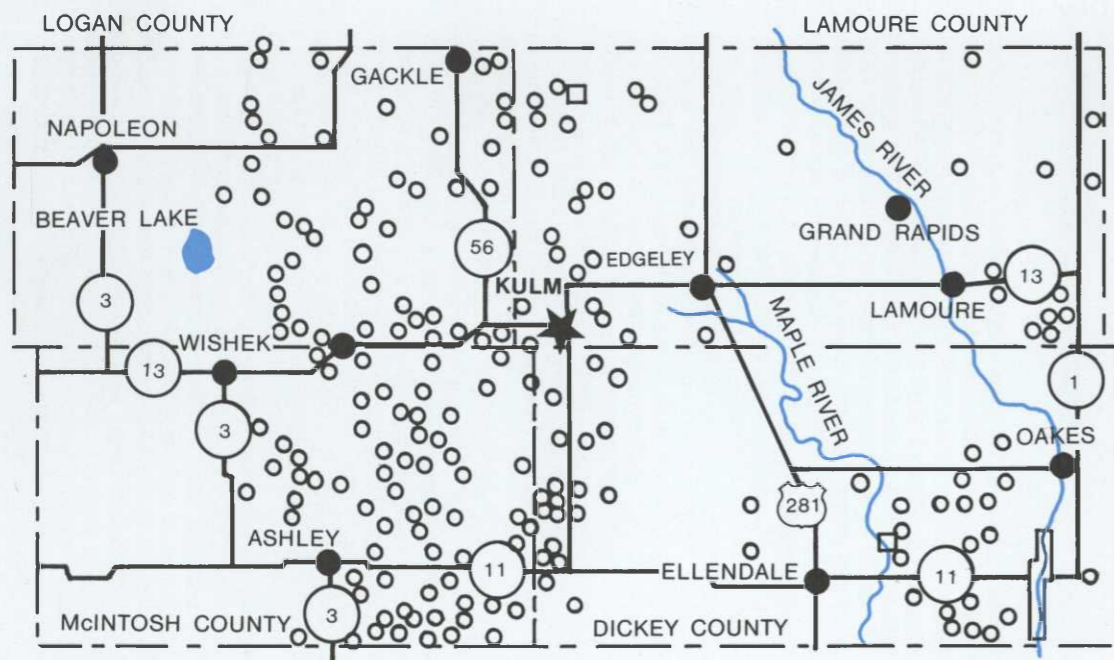
For further information, please contact the Manager, Kulm Wetland Management District, P.O. Box E, Kulm, North Dakota 58456. Telephone (701) 647-2866.



Location of KULM WMD in pothole region of the U.S.



Location of KULM WMD in North Dakota



○ Waterfowl production area □ Easement refuges ● Cities and towns

U.S. FISH AND WILDLIFE SERVICE
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