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KULM WETLAND MANAGEMENT DISTRICT
Kulm, North Dakota

ANNUAL NARRATIVE REPORT
Calendar Year 1978

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

RESOURCE MANAGEMENT ROUTING SLIP

____	Beaty	____	~~Young~~
____	Kvernmo	____	~~Frickie~~
____	Wills	____	Baldacchino
____	Brown	____	~~Wemmerus~~
____	~~Sontag~~	____	~~Belcher~~
____	~~Fowler~~	____	____
____	~~McCrea~~	____	____
____	~~Hughes~~	____	____
____	Nelson		
____	Quinter	____	Operations ____
____	Stieglitz	____	Planning ____

From: Date:

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Refuge Staff -- from left to right, Fran Maiss, John Jones, H. "Tuck" Stone, and Edna Okerlund

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15. Todd Lang, Emergency Appointment, EOD 8/26/78 - 9/23/78
16. Mark Norling, Emergency Appointment, EOD 8/26/78 - 9/23/78

Review and Approvals

Harm T. Stone 1-19-79 — Submitted by — Date

Refuge

Area Office — Date

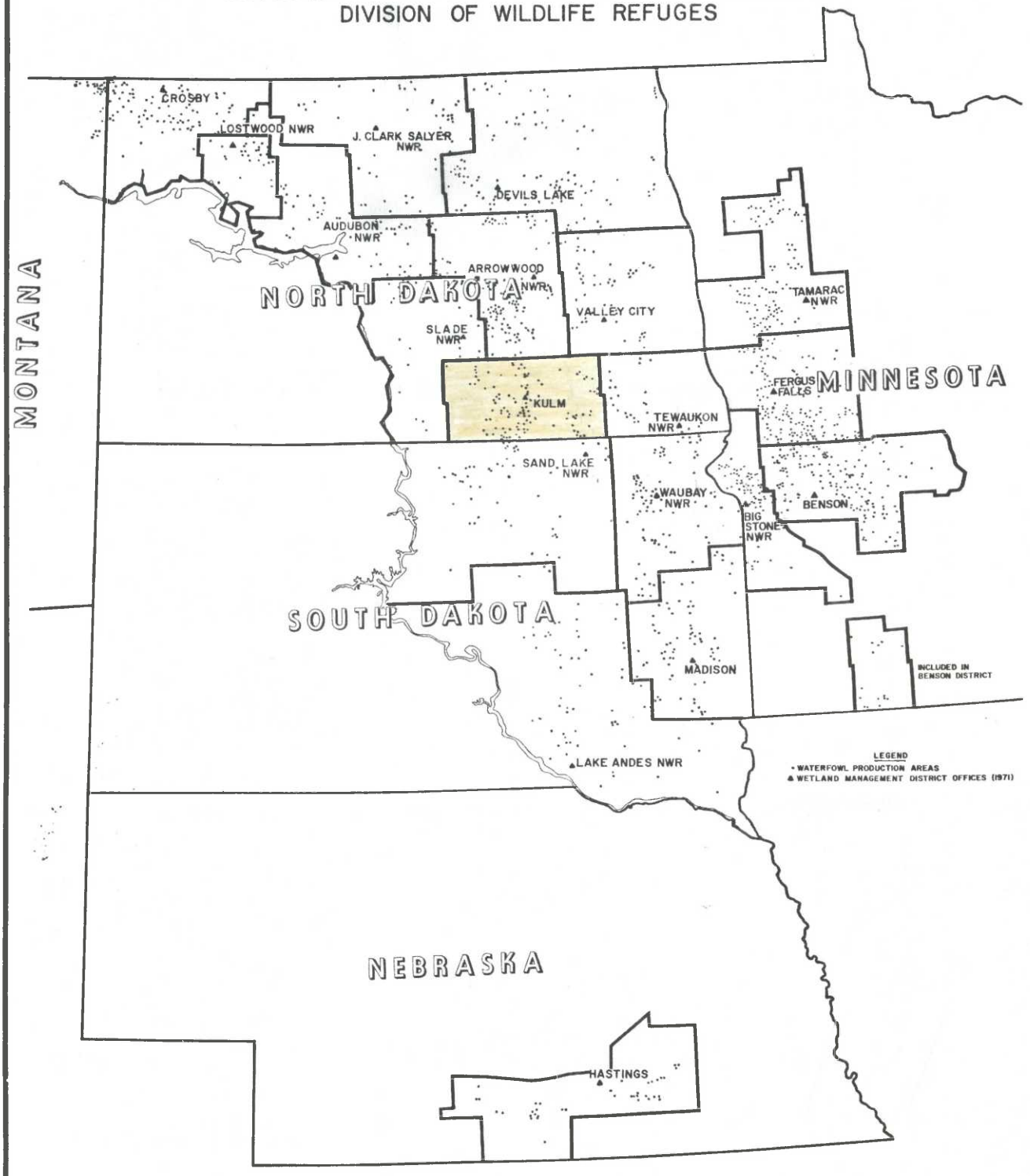
Regional Office — 6/12/79

WATERFOWL PRODUCTION AREAS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF SPORT FISHERIES AND WILDLIFE

DIVISION OF WILDLIFE REFUGES



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I. GENERAL

A. Introduction

The Kulm Wetland Management District is located in southeast North Dakota. The district encompasses 42,147 acres of Waterfowl Production Areas scattered throughout Dickey, LaMoure, Logan and McIntosh counties. Approximately four fifths of this acreage lies within the Missouri Coteau with the remaining acreage in the eastern portion of the district occurring in the glacial drift prairie. The WPA's within the district contain 16,800 acres of wetlands, 15,034 acres of native rangelands, 6,591 acres of tame grassland and 3,722 acres of cropland. An additional 99,405 acres of wetlands under easement are administered by the Kulm WMD.

B. Climate and Habitat Conditions

The year 1978 started out bitter cold as there were 41 days of below zero temperatures in January and February. The year's lowest temperature was -25 degrees recorded on January 10.

Spring thaw occurred around March 18 with the first spring rains occurring on April 5. April and March provided 7.5 inches of precipitation which when combined with the previous winter's 44 inches of snowfall filled up all of the wetland basins. In June over 9 inches of rain fell which once and for all ended the speculation as to whether the 3 year drought was actually over. These June rains caused prolific growth of both native and tame grasses which provided the best duck nesting cover available in several years.

The summer temperatures were mild with only 8 days in July thru September above 90 degrees. The year's highest temperature was 95 degrees recorded on September 5.

Mild weather predominated throughout the fall with a near record high of 72 degrees occurring on Nov. 2. But, that unusual temperature was short lived as the first major snowstorm of the season occurred on November 10, bringing with it the onset of winter. From then until the end of the year, the weather was winter-like cold but no other major snowstorms occurred.

C. Land Acquisition

1. Fee Title

In July of 1977 a state law went into effect which was designed to cripple the Service's wetland acquisition program. Among the many provisions of the law were requirements to

publish intent to purchase land in local newspapers, hold public hearings, write an economic impact statement and obtain approval by the County Commissioners.

To further complicate the fee acquisition program, the North Dakota Governor, who is upset with the present Administration's plan to construct a scaled down version of Bureau of Reclamation's Garrison Diversion Project, refuses to cooperate with the Service's small wetlands acquisition program. He has publicly stated that he will not approve of any small wetland purchases by the service unless such acquisitions were used as mitigation in the Garrison Diversion Project, and that if the full scale Garrison Diversion Project is not completed to the state's satisfaction by the 1990's any such purchases would pass to State ownership. Also the county commissioners in LaMoure and Dickey counties have formed a coalition with three neighboring counties to support the governor, and not to approve of any fee acquisition by the Service until Garrison Diversion is once again fully underway. The result of all this political turmoil is that the Fish and Wildlife Service is no longer acquiring small wetlands in North Dakota for waterfowl production. Currently the Kulm district is managing 190 units totaling 42,147 acres.

2. Easements

No easements were taken in 1978 due to the prohibitive restrictions placed on them by a state law passed in 1977. Currently Kulm is administering 1,337 easements encompassing 99,405 wetland acres.

D. System Status

1. Objectives

The primary objective of the Kulm WMD is protection for and enhancement of small wetlands within the district for maximum waterfowl production.

Kulm's objectives were set in 1971 shortly after the district was established. Because of a lack of information the objectives were not realistic. Subsequent program scheduling efforts always resulted in changing objectives "midstream" in an attempt to make them more realistic. Now it seems that the district's objectives are too conservative, with current year's waterfowl production figures exceeding objective levels. Some of the problem stems from fixed objectives set several years back while continuing to purchase additional acreage with no provisions to increase objectives.

At present, all of the activities are in phase with approved objectives. However, most of the objectives are badly in need of revision, with some provisions for annual revision as new tracts are purchased.

2. Funding

Year	1210	CM	1220	1240	BLHP	PFT	PPT	PT
1974	54,000			1,500		2	1	2
1975	56,500			1,500		2	1	2
1976	68,500			1,500		2	1	1
1977	70,000	8,000		1,000	13,000	3	1	1
1978	112,000	6,000	2,200	1,000	36,000	3	1	7

For the first time since the district was established it had a budget that exceeded the custodial maintenance level. BLHP allowed the Kulm district to hire six part time employees who worked mainly on fence construction and junkpile cleanup. BLHP also brought 2 compact pickup trucks and a 48" culvert water control structure.

II. CONSTRUCTION AND MAINTENANCE

A. Construction

During the summer of 1978 the district was able to construct 27.75 miles of fence on 19 WPA's. Of this, 21.5 miles were constructed by refuge personnel and 6.25 miles were constructed by neighboring farmers. Constructing fence with summer temporary labor is fairly efficient as the calculations came to $400 per mile in salary costs. Professional contractors charge $800 - $1,000 per mile.

The following is a list of units on which fencing was accomplished in 1978:

1) Redlin (11a) D - 2.0 miles constructed by neighbor
2) Lazy M (340) D - 1.75 constructed by refuge
3) Hille (14) D - .25 miles constructed by refuge
4) Enger (32a) (286) D - 2.25 miles constructed by refuge

5) Provost (233) D. - .50 miles constructed by neighbor
6) BLM(1)(1c)(13)(15)(31a) D. - 1.75 constructed by neighbor
7) Carlson (208) LaM. - .50 miles constructed by refuge
8) Boschee (368a) L. - 1.50 miles constructed by refuge
9) Schmidt (336) L. - 1.75 miles constructed by refuge
10) Krueger (84a) L. - 1.0 mile constructed by refuge
11) Kautz (156) L. - 1.75 miles constructed by refuge
12) Mund (143) L. - 2.0 miles constructed by neighbor
13) George (135a) McI. - 0.5 mile constructed by refuge
14) Werth (166a) McI. - 0.5 mile construct by refuge
15) Dalke (65) McI. - 0.5 mile constructed by refuge
16) Ziegenhagel (281)(65a) McI. - 2.0 miles constructed by refuge
17) Ulmer (22a) McI. - 1.75 miles constructed by refuge
18) Jenner (289) McI. - 4.50 miles constructed by refuge
19) Geiszler (277) McI. - 1.0 mile constructed by refuge

BLHP has made it possible to replace some of the existing fence corners with the more traditional wooden design. #1-78 Sept. 78', H. T. Stone

B. Maintenance

Three old and worn out trucks were replaced by a new Dodge 4x4 and two compact Datsun pickups.

Surprisingly, after such a severe winter which piled up 10 foot high snow drifts the only repair was about 3 miles of broken fence out of a total of 270 miles.

One maintenance problem that has been left undone for the past several years is the replacing of bent, broken and tattered WPA

signs and poles throughout the 4 county area. It seems impossible to keep up with the damaged signs as the district has over 520 miles of boundary posted.

Another layer of gravel was spread over the quarter mile of road on the Gackle (52) WPA where there are storage facilities. Hopefully this will prevent stuck vehicles during spring thaw.

C. Wildfire

There were no wildfires on any WPA's during 1978.

III. HABITAT MANAGEMENT

A. Croplands

Sixty one permittees farmed 4,375 acres under cooperative farming agreements. Under the terms of the agreement, the crop on 448 acres was harvested and taken to the elevator where it was sold. The money derived from the sale of this grain, which amounted to $11,415 as of December 1978, was distributed to J. Clark Salyer NWR and the Northern Prairie Wildlife Research Center. Both units converted the money back to grain, which was used to feed waterfowl.

The ultimate goal of this cropland farming is proper seedbed preparation for the establishment of Dense Nesting Cover (DNC). A total of 1281 acres on 22 WPA's were seeded to DNC in late October or early November by cooperative farmers. The DNC mixture contained 5 pounds of intermediate wheatgrass, 2 pounds of tall wheatgrass and 3 pounds of alfalfa per acre.

Fifty five acres on 3 WPA's were seeded to DNC this spring by refuge personnel.

A total of 845 acres of degenerate tame grass fields were broken out in late summer for cropping in 1979 and return to DNC in 1980.

1978 DNC Seeding

	WPA	Acres	Season
1.	Heine (356) D	48	Fall
2.	Mueller (361) D	21	Fall
3.	Grueneich (359) (360) D	95	Fall
4.	Holmes (140a) D	20	Fall
5.	Earnest (354a) D	174	Fall

6. Haberman (176) LaM	40	Fall
7. Laney (252)(253) LaM	94	Fall
8. Wetzel (255) LaM	19	Fall
9. Allison (259) LaM	137	Fall
10. Carlson (208) LaM.	49	Fall
11. Lahr (396) L.	36	Fall
12 Knecht (397) L	134	Fall
13. Moldenhauer (384) L	78	Fall
14. Baltzer (70) L	20	Fall
15. Kessel (250) McI	39	Fall
16. Salzer (237) McI	16	Spring
17. Salzer (237) McI	52	Fall
18. Kaseman (400) McI	23	Fall
19. Koepplin (437) McI	8	Fall
20. Brinkman (195) McI	38	Fall
21. Geiszler (210) McI	70	Fall
22. Geiszler (277a) McI	19	Spring
23. Meidinger (436) McI	80	Fall
24. Edna (280b) McI	6	Fall
25. Jenner (130b) McI	20	Spring

We have 5 WPA's containing wildlife food plots totaling 50 acres of corn. These plots support resident populations of wintering white-tail deer, pheasant and Hungarian partridge. They are all farmed and maintained by local sportsmens groups or individuals interested in helping wildlife.

DNC, one springs growth. This field on the Gackle (122) LaMoure County WPA was seeded into crop stubble in October 1977. By June 1978 intermediate wheatgrass was 5 feet tall.June 1978, #2-78, F. Maiss

B. Grassland

1. Grazing

Over 35 per cent (15,000 acres) of the Kulm WMD fee title acreage is native rangeland or restored native grasslands. Thus a major emphasis of management in the district consists of attempting to keep our native rangelands vigorous, with overall range trends moving upwards toward good to excellent range condition. It is assumed that such range conditions produce the most desirable waterfowl nesting habitiat.

The main problem with native rangelands is invasion by two cool season exotic grasses, Kentucky bluegrass and smooth brome. These grasses are the first to grow in the Spring and produce much low growing foliage. If these native rangelands are left undisturbed for several years these early season plants will produce such an accumulation of litter that the growth of the native forbes and warm season grasses are severely inhibited. Thus our 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 warm season species. One way to accomplish this is by permitting grazing by livestock during the early growing season on areas with substantial litter accumulation.

During 1978 Kulm WMD permitted grazing of 3,400 acres on 27 WPA's. Recipts from grazing totaled $5,002. The table below shows pertinent data relating to the units grazed.

Units Grazed in 1978

WPA	Acres	# Cows Adult w/calves	Dates	AUM's
1. Redlin (11a) D	95	50	4/15-6/15	100
2. Erlenbusch (12) D	280	25	5/10-10/19	144
3. Hille (16) D	54	22	5/1-6/1	22
4. Enger (32) D	72	50	4/26-5/27	50
5. Knopp (24a)(27) D	100	52 yrlg	5/1-6/10	52
6. BLM(1)(1c)(15)(31a)	87	100	5/20-6/20	100
7. Lazy M (340) D	1027	90 yrlg	5/1-9/30	338
8. Provost (233) D	30	30	5/1-6/10	40
9. Cornell (15) LaM	83	32	4/22-6/5	46
10. Lundgren (47) LaM	90	100	5/1-6/10	133
11. Enzinger (13)	70	24	5/1-6/9	30
12. Olson (53) LaM	40	16	4/29-6/7	22
13. Olson (53a) LaM	40	15	4/29-6/7	20
14. Kannowski(10) LaM	60	47	5/1-6/10	62
15. Brinkman (173) L	90	30	5/1-6/15	40

16. Abell (145a) L	70	62	5/1-6/6	74
17. Buchholz (10) L	41	24	5/1-6/1	24
18. Kosanke (53) L	74	38	5/8-6/3	33
19. Kirschmann (18) K	47	25	5/1-6/1	25
20. Schweigert (299) L	40	22	5/1-6/1	25
21. Larson (12) L	428	49	5/1-8/26	150
22. Mund (143) L	100	100	5/1-6/15	150
23. Lux (204)(193) McI	95	40	5/15-6/15	40
24. Bollinger (73) (214a) M	31	50	4/22-6/1	34
25. Bender (215) McI	82	50	4/22-6/1	67
26. Klein (33) McI	54	25	5/10-6/10	25
27. Ruff (179,a) McI	120	50	5/10-6/10	50

Due to the heavy run-off and excessive amount of rain in the spring, grass growth was phenominal. On much of the native rangeland green needlegrass grew in excess of 30 inches. The usually low growing Kentucky bluegrass was heading out at 24 inches on some of our rested pastures.

Native rangelands response to excessive spring rains. This green needlegrass on the Ziegenhagel (281), McI Co. WPA could rival some of our DNC fields of the drought years.
#3-78, July 78, F. Maiss

Although the rains tapered off by summer the warm season grasses responded well to the good supply of moisture in the soil. By mid September the growth of warm season grasses was such that one would not have known the above pastures were grazed without being told.

2. Haying

Even with the heavy rains which produced an abundant hay crop on private lands, this office still received 52 requests for hay from WPA's. Due to the vigorous haying program conducted over the previous two years it was felt that very little, if any upland would need haying for management purposes. However, since there was a demand, it was decided to sell all the upland hay off of the fields of degenerate tame grasses that we planned to summerfallow in August and later plant to DNC. Thus this district hayed 845 acres of mostly brome/alfalfa or crested wheatgrass/alfalfa lands which were subsequently plowed. Revenue generated was $3,400.

With BLHP allowing the construction of fences on native range units and the rehabilitation of old tame grass fields to DNC, the need for upland haying as a management tool should nearly be eliminated by 1980. This will bring a welcome relief from the barrage of haying inquiries every spring and the administrative nightmare of equitably parcelling out too few acres to too many applicants.

3. Weed Control

Kulm WMD is required by state law to control noxious weeds on its fee title areas. The main emphasis in 1978 has been on controlling leafy spurge and Canada and Russian thistle.

Thistle seed is fairly widespread throughout the district and wherever disturbed land is left untended, thistle tends to grow. Thus the main thistle problem occurs in newly seeded fields where DNC establishment takes one or more years. Since a good stand of DNC will generally crowd out any thistles present, the district does not attempt any control unless a complaint is lodged by a neighboring farmer. When a complaint is received the thistle patch is usually mowed prior to seed ripening. This prevents the spread of seed to neighboring private lands and generally satisfies the neighbors. Once DNC is established, thistle control is no longer necessary. This year thistle was mowed on 3 WPA's.

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

The best results at controlling this plant have been to spray with Tordon 22K in mid-June, just prior to seed ripening. Since most areas of spurge infestation are small patches spray is applied via two gallon back pack hand sprayer. This gives

excellent control of this potent chemical and restricts the kill to individually selected spurge plants. Even though a complete kill occurs in any given year, areas of known spurge infestations are checked annually, as spurge seeds can be dormant and germinate up to 8 years after dissemination.

In 1978 1 man month was spent conducting spot spurge control on 22 WPA's.

As dictated by state law the district is required to mow the roadside ditches along all of the WPA's. On WPA's where farming, grazing or haying is permitted the stipulation is that the cooperator will mow the roadside for the district. On WPA's where no use has been permitted payment is made to neighboring farmers to mow the road shoulder. In 1978, $548.40 was spent for mowing 15.5 miles of WPA roadside ditches.

C. Wetlands

Most of the district's wetland management practices are limited to haying of whitetop marshes to maintain vigor of this valuable brood habitat plant, and mowing strips of vegetation to create open water in marshes excessively clogged with cattails. Due to the extremely wet year, allof the wetlands contained water and no mowing or haying was accomplished.

D. Forestlands

Nothing to report

E. Other Habitat

Nothing to report

F. Wilderness and Special Areas

Nothing to report

G. Easements for Waterfowl Management

Between November 6 and November 9 aerial easement checks were made over the district. A survey was made over only three counties, Dickey, LaMoure and McIntosh, as a heavy snowstorm arrived on November 10 which made it impossible to determine violations from the air. The one remaining county, Logan, will be flown as soon as spring thaw arrives. In Dickey county three easement violations were discovered, two involving draining wetlands by ditching and one wetland filling violation. LaMoure county had 4 suspected violations, all involving draining of wetlands via ditches. These four cases have not yet been investigated so the possibility exists that one or more may be legal. McIntosh county had no violations.

The following is a listing of easement violations found or currently under investigation in 1978:

1.	Bassen, Kenneth (183x1,2) LaM	1 drainage ditch
2.	Long, Jerome (230x) LaM	3 drainage ditches
3.	Hopper, Thomas (256x,1) LaN	1 drainage ditch
4.	Ruff, Lloyd O. (217x) LaM	1 drainage ditch
		3 wetlands filled
5.	DeWald, Jacob (89x) D	1 drainage ditch
6.	Nishek, Ida (319x) D	1 drainage ditch
		1 wetland filled
7.	Nishek, et al (292x,1) D	1 wetland filled

IV. WILDLIFE

A. Endangered and/or Threatened Species

While whooping cranes migrate through North Dakota, no verified sightings have taken place in the Kulm WMD since this office was established.

Bald eagles are occasionally sighted within the district during the winter. Observations of Bald eagles on Dakota Lakes NWR (Easement Refuge) have been made in early November while there is still open water. However, no eagles were observed this fall in the area. Substantial use of any areas within the district by endangered species is unknown.

B. Migratory Birds

1. Waterfowl

The random quarter section pair count was used to obtain an estimate of the number of breeding duck pairs in the district during the last week of May. Refuge personnel inventoried 1,143 wetland acres out of the 15,124 owned in fee title. Thus, production projections are based on an actual inventory of 8 per cent of the WPA wetland acres. Due to the heavy snow run-off and spring rains 100 per cent of the wetlands were wet when this pair count was undertaken.

ESTIMATED WATERFOWL PRODUCTION ON WPA'S

Species	Prs. Counted	Proj. Breed. Prs	Avg. Prod. Rate .45	Std. Brood. Size	Total Ducks Prod.
Mallard	121	1,588	715	6	4,290
Pintail	236	3,115	1,401	6	8,406
Gadwall	87	1,149	517	6	3,102
B.W. Teal	356	4,703	2,116	7	14,812
G.W. Teal	12	151	68	7	476
Shoveler	85	1,119	504	6	3,024
Redhead	160	2,117	953	6	5,718
Canvasback	50	650	293	5	1,465
Ruddy	137	1,815	817	4	3,268
Scaup	21	272	122	6	732
Widgeon	8	106	48	6	288
Total	1,273	16,785			45,581

Waterfowl production on easement areas is generally based on a calculation of one bird per wetland acre for a production total of 99,400 birds.

Total duck production for the Kulm District is estimated at 145,000 ducks. This is almost 10 times the 1977 production estimate of 15,840 birds produced during the drought when 80 per cent of the wetlands were dry.

Another effect of the abundance of water throughout the district was the outbreak of botulism on marshes that had previously been dry or substantially de-watered.

For the second year in a row botulism occurred on the Graham(31) WPA in Dickey county. The first dying ducks were observed on August 16 and by September 25 the number of birds picked up totaled 1,985 ducks and 150 shorebirds. This was slightly higher than the 1977 outbreak when 1,500 ducks were picked up.

A lesser outbreak occurred in McIntosh county on the Berlin Church WPA (10a, 214b, 130b) where between the dates of September 6 and 25, 918 ducks and 175 shore birds were picked up.

The big botulism catastrophe in the Kulm district occurred on the one large lake and two smaller marshes about 1 mile south and west of Napoleon in Logan county. On these private lands, between the dates of August 22 and September 23, 13,875 ducks and 4,081 shorbirds were picked up. Assisting the refuge crew was the Napoleon Wildlife Club who besides collecting dead ducks, restored over 900 sick birds back to good health.

A major outbreak had gone undetected on the Wentz (1,122) WPA in Logan county. Refuge personnel, checking waterfowl hunters in

October, discovered several of the islands on this unit piled high with waterfowl carcasses and bones. The shoreline of this unit was checked in August due to its close proximity to Napoleon but no sick or dead birds were observed.

Blood samples and bird carcasses were collected from all of these areas and sent to the National Wildlife Health Laboratory, with all subsequent reports confirming Type "C" botulism.

All told, over 21,184 birds were known killed by botulism in the Kulm district in 1978. The number of birds lost and irretrievable due to inaccessability created by marsh vegetation is probably equal to the number retrieved.

It seems ironic that the total number of birds produced on our 190 WPA's can be easily wiped out by botulism on 3-4 marshes.

Spring goose migration occurred about mid-March. Many flocks of snow geese stopped in the vicinity of the Maple River NWR due to the unusual amount of unharvested field corn that was left stranded by the early onslaught of winter. Also, many fields that were harvested were not fall plowed due to the early snowfall. For many geese the migration was delayed somewhat due to the easy pickings in Dickey county, North Dakota.

Geese on their spring migration were treated to the sight of unharvested corn fields and unplowed corn stubble in the vicinity of Maple River NWR in Dickey county. Many flocks hung around for a couple of weeks until this food supply was diminished.

#4-78, March '78, F. Maiss

Nesting pairs of giant Canada geese were observed on Green Lake (McIntosh county) and on the Graham (31) D WPA. One pair of giant Canadas successfully raised 5 young to flight stage on the Graham (31) D WPA. One young goose fell victim to botulism, but the adults and 4 other young survived it.

2. Marsh and Water birds

With all the wetlands filled in 1978 the more common species such as American bittern and black crowned night heron had good nesting conditions.

One cattle egret was shot by a Logan county farmer for harassing his calves. His livestock didn't know what a cattle egret was and were deathly afraid of it! He brought it into the office for identification as nobody locally knew what it was. That was the only egret of any kind sighted in the Kulm district.

The cormorant rookery on the Graham (31) WPA had unusually good success. An estimated 500 young were produced from 200 nests. Mortality was almost non-existent, only two young birds died before fledging.

Portion of the nesting colony of double crested cormorants on the Graham (31) WPA. Every year this half acre island serves as a nesting spot for 100-200 breeding pairs.

#5-78, Sept. '78, H. T. Stone

3. Shorebirds, Gulls, Terns and Allied Species

All of these type birds enjoyed favorable nesting conditions in 1978. Black terns were the most conspicuous, nesting in colonies of 25-50 pairs on many of our WPA's. Large flocks of Franklin gulls were observed in September, preparing for their migration south.

4. Raptors

No unusual raptor observations were made with all common species being observed in normal numbers. The most frequently observed species include marsh hawks, red tailed hawks,American kestrel and great horned owl.

5. Other Migratory Birds

Mourning dove populations appeared to be in the "normal" range. No attempt was made to conduct a dove census. Several dove ground nests were observed in native rangelands during the course of everyday work in the spring.

C. Mammals and Non-Migratory Birds and Others

1. Game Mammals

The winter of 1977-78 was extremely hard on the whitetail deer herd within our district. A state wide "Save the Deer" campaign was organized to purchase emergency winter feed for local concentrations of deer. Within our district there were several sportsmen's groups who were undertaking a feeding program. After soliciting donations they would then purchase alfalfa hay, oats and barley to feed concentrated deer in various locations. One feeding spot was on the north end of the Berlin Church (16) WPA in McIntosh county. Due to this widespread volunteer effort the winter kill within the Kulm district was estimated at only 30 per cent. Without the supplemental feeding program winter mortality probably would have been 70-80 per cent.

A special deer archery season was allowed for the second straight year on the Maple River NWR, after the deer gun season closed. It is hoped that the bow hunting activity will disperse the 250+ deer on that 400 acre parcel and avert a disease outbreak. Last year's hunt met with moderate success. Only about 50 head remained on the refuge by the close of the season, but by the end of January numbers were again approaching 200. But then this is an easily predictable response when we have a 20 acre corn wildlife food plot on the unit. If one

were serious about dispersing deer, one would eliminate the food plot. In 1979 the food plot will be reduced to 10 acres and possibly eliminated in a couple of years.

2. Other Mammals

During the winter months trapping and hunting of furbearers is a major activity. With fox selling for $85 in the round and raccoon, badger worth $40 the search for these animals becomes relentless. As long as fur prices stay up populations of these furbearing mammals will stay depressed.

3. Resident Birds

The severe winter of 1977-78 did not seem to adversely affect populations of sharptail grouse and Hungarian partridge. Sharptail grouse populations are widespread throughout the entire district and seem to respond well to management practices on our native rangelands and former croplands planted to DNC.

The pheasant population, however, is a different story. The severe winter almost wiped out the entire local pheasant populations. An estimated 700 pheasants on the Maple River NWR were reduced to 20-30 by the end of the winter. This handful was kept alive through feeding by a neighboring farmer. Most other populations were entirely obliterated. During the summer some local sportsmens groups and interested individuals raised and released pheasants in the hopes of getting them re-established.

4. Other Animal Life

Nothing to report

V. INTERPRETATION AND RECREATION

A. Information and Interpretation

1. On-Refuge

Nothing to report

2. Off-Refuge

In May the Kulm WMD participated in the Soil Conservation Services 7th grade environmental education conservation tour. Biological Technician John Jones gave a presentation on waterfowl identification and the importance of North Dakota wetlands in waterfowl production to students from the surrounding six county area.

Biological Technician John Jones displaying waterfowl from NPWRC to environmental education class.

#6-78, May '78, W. Hankel

Three news releases were written during the year; one on postponing roadside mowing until after mid-July, the second one thanking volunteers for the botulism effort and the third one dealing with archery hunting on the Maple River NWR.

Presentations were made to Wishek, Ellendale and Ludden Sportsmen's clubs about land management practices on nearby WPA's. The Wishek and Ludden clubs have taken several small wildlife foodplots as club projects to enhance nearby WPA's deer and pheasant habitat.

B. Recreation

1. Wildlife Oriented

This was an excellent year for hunting all native species. Mild weather and the abundance of water kept most of the local ducks present until freeze-up. Duck hunting accounts for the greatest form of recreational use of WPA's in the Kulm WMD.

In May, the South Dakota Ornithological Union toured the Lazy M (340) WPA and the adjoining Deer Creek Canyon State Game Management Area as part of their annual meeting which was held at

the Nature Conservancies Ordway Prairie, Leola, South Dakota. Their aim was to observe an area of native prairie containing both wetland and woodland habitats that would offer good birding potential. The 50 plus people present had a good outing.

2. Non-Wildlife Oriented

Nothing to report

C. Enforcement

This year things were relatively quiet. We had no major farming, grazing or vehicle trespass problems and very few game law violation cases.

VI. OTHER ITEMS

A. Field Investigations

Nothing to report

B. Cooperative Programs

During the summer the Kulm WMD assisted the branch of Animal Damage Control in disseminating scare devices and information for controlling waterfowl and blackbird crop depradation. Scare devices were loaned or given to twenty eight local farmers. This assistance program has the possibility of mushrooming to uncontrollable proportions as farmers learn about it. The district should keep participation limited to explaining how various scare devices work, loaning such devices for a trial period and then supplying the farmers with information on where they can obtain their own.

C. Items of Interest

In March, Kulm's first and only Refuge Manager, John Akin departed for the warmer climates of Sequoyah NWR, Oklahoma. During his seven year stay, the Kulm WMD has emerged from infancy to one of the largest wetland districts in the service.

In June, Harry "Tuck" Stone was selected as the new refuge manager. Tuck and his family moved to Kulm from St. Vincent NWR in Florida. He is greatly enthused about the active habitat management program of a Wetland Management District.

This entire report was written by Assistant Manager Francis Maiss. Refuge Administrative Clerk Edna Okerlund typed and assembled the report.

D. Safety

This station was very safety conscious this year, and even with 9 new employees Kulm WMD managed to go through the whole year without a reportable accident.