

CHASE LAKE

**Wetland Management District
National Wildlife Refuge
Prairie Project
Woodworth, ND**

**ANNUAL NARRATIVE REPORT
1997**

**Chase Lake Wetland Management District
Chase Lake National Wildlife Refuge
Chase Lake Prairie Project
5924 19th Street SE
Woodworth, ND 58496**

**ANNUAL NARRATIVE REPORT
1997**

REVIEW AND APPROVALS



Project Leader Approval

3-20-02

Date



Refuge Supervisor Approval

4/4/02

Date



Regional Office Approval

4/26/02

Date

TABLE OF CONTENTS

INTRODUCTION

A. HIGHLIGHTS

B. CLIMATIC CONDITIONS

C. LAND ACQUISITIONS

- 1. Fee Title NTR
- 2. Easements 7
- 3. Other 8

D. PLANNING

- 1. Management Plan 9
- 2. Compliance with Environmental and Cultural Resource Mandates 9
- 3. Research and Investigations 9

E. ADMINISTRATION

- 1. Personnel 11
- 2. Youth Programs NTR
- 3. Volunteer Program 12
- 4. Funding 13
- 5. Safety 13
- 6. Technical Assistance 14
- 7. Other 14

F. HABITAT MANAGEMENT

- 1. General 14
- 2. Wetlands 15
- 3. Croplands 16
- 4. Grasslands 17
- 5. Grazing 17
- 6. Haying 17
- 7. Fire Management 18
- 8. Pest Control 19
- 9. Water Rights 20
- 10. Wilderness and Special Areas 21
- 11. Waterfowl Production Easement Monitoring 22

G. WILDLIFE

1. Wildlife Diversity	23
2. Endangered and/or Threatened Species	23
3. Waterfowl	23
4. Marsh and Water Birds	24
5. Shorebirds, Gulls, Terns, and Allied Species	26
6. Raptors	27
7. Other Migratory Birds	27
8. Game Mammals	28
9. Other Resident Wildlife	28
10. Fisheries Resources	29
11. Animal Control	30
12. Marking and Banding	31
13. Disease Prevention and Control	31

H. PUBLIC USE

1. General	32
2. Outdoor Classrooms - Teachers	NTR
3. Interpretive Exhibits/Demonstrations	32
4. Other Interpretive Programs	32
5. Hunting	33
6. Fishing	34
7. Trapping	34
8. Off-Road Vehicling	34
9. Law Enforcement	34

I. EQUIPMENT AND FACILITIES

1. New Construction	35
2. Rehabilitation	36
3. Equipment Utilization and Replacement	37
4. Computer Systems	37

J. OTHER ITEMS

1. Cooperative Programs	37
2. Other Economic Uses	47
3. Items of Interest	NTR
4. Credits	47
5. Halfway Lake National Wildlife Refuge	48

INTRODUCTION

The Chase Lake Wetland Management District (CLWMD) is located in central North Dakota and includes all of Stutsman and Wells Counties. The CLWMD and the Chase Lake Prairie Project (CLPP) are operated as a substation of the Arrowwood National Wildlife Refuge Complex at Pingree, North Dakota.

The CLWMD was administratively created in January, 1993 as result of an internal reorganization of the Arrowwood NWR Complex. The CLWMD and the CLPP (the Flagship Project of the North American Waterfowl Management Plan dedicated in 1989) are headquartered together three miles east of Woodworth, ND on a 2,635 acre Waterfowl Production Area (WPA).

Land Management Types and Acres in the Chase Lake Wetland Management District

Description	Stutsman County		Wells County		Total Number	
	Number	Acres	Number	Acres	Number	Acres
NWR's **	1	4,385	--	—	1	4,385
WPA'S	96	27,491	34	7,975	130	35,466
WDA'S	1	935	4	2,799	5	3,734
Subtotal of Fee Title	98	32,811	38	10,774	136	43,585
Easement Refuges	1	160	—	—	1	160
Wetland Easements	462	40,414	205	13,199	667	53,613
Grassland Easements	4	2,790	—	—	4	2,790
FmHA Easements	8	1,380	6	382	14	1,762
Subtotal of Easements	475	44,744	211	13,581	686	58,325
Totals	573	77,555	249	24,355	822	101,910

** Excludes Arrowwood NWR in part of Stutsman County

The CLWMD lies in the heart of prairie pothole country and contains two physiographic regions. The Missouri Coteau on the west and Drift Prairie on the east. The Drift Prairie is characterized by gently rolling topography and for the most part is intensively farmed for small grain crops. The Missouri Coteau features rolling hills, and is dotted with thousands of wetlands with densities exceeding 100 per square mile. Land use in the Coteau is a mix of cropping, haylands, and pasture which contain some large blocks of native prairie. Under the United States Department of Agriculture (USDA) Conservation Reserve Program (CRP) there are about 234,851 acres of cropland converted to grasslands in Wells and Stutsman Counties for a ten year period which began in 1986. Many operators were granted one-year extensions on their CRP contracts while USDA wrote final rules for the new CRP program. The Prairie Pothole Region has been declared a conservation priority area by USDA, practically ensuring extension of CRP contracts to those farmers willing to remain in the program. The grass provided by the CRP Program, in concert with above average precipitation since 1993, has been responsible for waterfowl populations rebounding in the prairie pothole region.

A. HIGHLIGHTS

The house movers were finally able to get out of Devils Lake to place our houses/office onto the foundations. Development of the office building plans for the new office reached CGS in October and construction is planned to begin on May 1, 1998.

The Eve of Autumn Festival was held in Woodworth on September 20th. The CLPP display was installed and a variety of NWRS week promotional materials were handed out to visitors. An introduction to fishing and bow hunting program was given to approximately 30 kids.

The North American Wetlands Interpretive Center fund raising kick-off meeting was held on October 15th explaining the methods to be used in contacting potential contributors. Governor Schaffer delivered a luncheon speech expressing his support of the Center.

A severe, three-day blizzard hit the area dumping over 14" of snow and freezing rain knocking down trees and electricity power lines in the area. Fortunately, the Woodworth Ducks Unlimited banquet ended early enough to allow people to make it home before the blizzard hit.

Biological Technician Martin Brockman accepted a ROS position with Brazoria NWR in Angleton, Texas. Brockman has been with the Arrowwood complex since 1992 and will be missed.

Richardson met with biologists from the Japanese Association for Wild Geese Protection to discuss the CLPP and its accomplishments in working with private landowners. The biologists would like to work with landowners in Japan to assure that there is adequate habitat for three species of geese that winter there. A short tour of the District and the Chase Lake NWR was eye opening for them as they were amazed at the diversity of wildlife that we observed using the area's wetlands.

Over 3,040 acres in Stutsman and Wells County were evaluated for perpetual Wetland Easement offers in 1997. One of these was as large as 960 legal description acres. The combination of Partners for Wildlife, CLPP and refuge staff continues to allow us the opportunity to gain landowner trust and help sell the wetland easement program. This is especially satisfying for us in a year when the assault on wetlands is at a fevered pitch.

Three drained wetlands with 23.5 surface acres were identified on WPA's in Stutsman County. The wetlands were drained prior to USFWS acquisition. All three wetlands were restored back to their original condition in 1997.

B. CLIMATIC CONDITIONS

The winter of 1996-1997 brought record amounts of snowfall that resulted in significant runoff. Jamestown set a new record for snowfall this winter at 99.53 inches. This exceeded the old record by 2.93 inches that was set back in 1950. Below normal temperatures were also experienced. Total spring and summer precipitation was above average, causing significant road and farmstead flooding and delays in planting of crops.

1997 Weather Data for Chase Lake WMD
Precipitation & Temperature Recorded at Chase Lake Headquarters, Woodworth ND

Month	Precipitation	Temperature	Temperature	Temperature
	Inches	Maximum	Minimum	Average
January	1.12	41	-30	2.5
February	.00	50	-20	18.5
March	.36	57	-12	24.0
April	2.70	67	1	38.0
May	.54	86	32	56.0
June	2.60	94	57	68.0
July	5.10	89	44	66.5
August	.44	97	42	70.0
September	2.06	87	32	63.0
October	1.29	85	11	48.5
November	.35	52	1	27.0
December	.35	46	-8	19.0
Total	* 16.91			
Averages	1.41	70.9	12.5	41.8

* The average precipitation for this area is 15.76 inches.

C. LAND ACQUISITION

1. Fee Title

No new fee title tracts were purchased in 1997.

2. Easements

New easements are sought on a continual basis. In 1997 several tracts of land were evaluated and one easement offer was prepared by the realty office. No grassland easement proposals were evaluated in 1997.

1997 USFWS Wetland Easement Acquisition

County	Total Acres**	Wetland Acres	Total Wetlands
Wells	160	26	27
Totals	160	26	27

**Legal description acres.

Current Wetland Easements within CLWMD

County	Number of Easements	Total Wet Acres
Stutsman	462	40,414
Wells	205	13,199
Totals	667	53,613

Several FMHA easement properties received active management in 1997. Stutsman 10c had 38 acres seeded to a tame grass mixture in the "G" areas. Stutsman 15c and 20c were recorded and no posting was needed. A certified letter was sent to landowners explaining the easement.

Current Status of FmHA Easements in the Chase Lake WMD

Category	
Number of Easements	14.0
Wetland Basins Protected	332.0
Wetland Acreage Protected	528.0
Number of Restorable Wetlands	5.0
Acres of Restorable Wetlands	22.0
Upland Acreage Protected	848.3
Total Easement Acreage	1749.3

3. Other

Five Wildlife Development Areas (WDA's), Garrison Diversion Unit (GDU) Mitigation Tracts Turned Over to the FWS for Management

Unit Name	County	Wetland Acres	Upland Acres	Total Acres
Pipestone	Wells	43.9	113.6	157.5
Pony Gulch	Wells	91.4	148.6	240.0
Indian Hills	Wells	360.0	1,434.2	1,794.2
Sweetgrass	Wells	199.4	483.1	682.6
Hawks Nest	Stutsman	172.3	763.0	935.3
Totals		867.0	2,942.5	3,809.6

These units have large areas of restored wetlands and grasslands that were purchased as part of the mitigation package for the Garrison Diversion Project. Management of WDA's has primarily consisted of maintenance of water control structures to prevent leakage, weed control and administrative work like having perfected water permits issued. All units were patrolled during hunting season to ensure compliance with regulations. Several units receive significant hunting activity during upland game and deer season. Perfected water permits #3985 and #3986 were issued for wetland restorations on Indian Hills WDA. Permit #3985 guarantees 31.0 acre-feet of storage plus 9.0 acre-feet for annual evaporation losses. Permit #3986 guarantees 74 acre feet plus 29 acre feet for annual evaporation loss.

Due to the extremely wet conditions experienced recently in the District, wetland 200.4 on Sweetgrass WDA has filled and runs through a ditch to the north, causing flooding of the road that divides the two sections of the tract. The problem has been temporarily resolved by breaching a dam on wetland 45.3 which was causing the flooding of the road. The water can now continue to flow to the north (without flooding the road and the breach in the dam will be replaced with a culvert and control structure)

The Annual GDU/WDA Report was completed in January.

Staff represented the CLWMD at the quarterly BOR meetings.

D. PLANNING

1. Management Plan

Erickson reviewed the burn plans for Weber, Peda and Holzworth WPA's for 1998. Richardson met with Brad Karl of Ducks Unlimited to discuss the placement of a water control structure that will replace a nonfunctional structure in a wetland on the Woodworth Station WPA.

Erickson met with the State Director of the Audubon Society, Genevieve Thompson to discuss future habitat development projects and the NAWMP on the Alkali Lake Sanctuary.

Erickson and Mike McEnroe met with the staff of Northern Prairie Research Center for a coordination meeting to update, plan and organize each agency's plans for research and management activities on various WPA's within the district.

2. Compliance with Environmental and Cultural Resource Mandates

Several archeological surveys were completed in 1997. Letters were submitted to SHPO for road grade improvement project adjacent to the Gaier and Ackerson WPA's. Fill material and rocks will be removed from Ackerson WPA. No cultural resource sites were identified during their review process or during construction.

Rhoda Lewis field checked three borrow sites on the Kost WPA for the remaining wetland restorations.

Richardson issued a SUP in coordination with Rhoda Lewis for UNDAR-West to do a archeological survey on the Stickle WPA and Zimmerman FmHA WPA in Stutsman County in preparation for replacement of a underground telephone cable.

3. Research and Investigations

STUTSMAN COUNTY

(1) Ron Royer, Division of Sciences, Minot State University, Minot, ND. A Special Use Permit, #97-003, was issued to investigate the butterfly fauna, primarily the Dakota Skipper, in the Chase Lake NWR/WPA area.

(2) Ned Euliss, Northern Prairie Science Center. "Factors Influencing Use of Prairie Pothole Wetlands by Birds, Amphibians and Aquatic Invertebrates." A Special Use Permit, 97-004.RES, was issued to conduct research on use of wetlands by amphibians and songbirds on Eddy WPA (13). Drift fences and funnel traps have been erected for analyzing amphibians. Grids have been established with PVC pipe to monitor songbird use. This study initiated in 1992 and was to be completed in 1997. The Eddy WPA or Cottonwood study area is the site of a long term study of wetland hydrology, conducted by U.S. Geological Survey.

(3) Tommy King, USDA- Animal Damage Control, Denver Wildlife Research Center.

A Special Use Permit 97-020 was issued to allow cooperative banding of American White Pelicans at Chase Lake NWR. The banding was undertaken to determine population status of American White Pelicans east of the Rocky Mountains, and their potential impacts on the aquaculture industry in the southeastern United States. Approximately **1457** juvenile pelicans were banded on **7/28/97** at Chase Lake NWR. Seven adult pelicans were also banded. Chase Lake Staff recovered 35 of the bands on the refuge, prior to freeze up.

(4) Pamela Pietz, Northern Prairie Science Center. A Special Use Permit #97-005.RES was issued for access to Stutsman and Wells County WPA's for evaluation of a prototype camera system to be used for monitoring grassland bird nests. In 1996 Ackerson WPA was the site of monitoring of a savannah sparrow nest. The nest initially had 6 eggs and when revisited, all 6 eggs were gone and one abandoned cowbird egg was present. A total of 16 nests were monitored with 46% of the nests successfully hatching and 38% of nests fledged young successfully. Predators identified by videotaping included mice, long-tailed weasel, red fox, large canids, Coopers Hawk and one Cowbird on an unattended meadowlark nest. The study was repeated in 1997 to improve and refine methods.

(5) Bob Cox, Northern Prairie Science Center. A Special Use Permit #97-010.RES was issued for access to Woodworth and Zimmerman WPA's in Stutsman County, to conduct waterfowl breeding pair and brood surveys on restored wetlands.

(6) Michelle Gunness / Dr. Frank Rowher, Louisiana State School of Forestry & Wildlife, Baton Rouge, LA. 70803. A Special Use Permit #97-013.gunness was issued to study the relationship between predator removal and nest success of upland nesting birds on WPA's in Wells County. Observations of behavior of incubating hens at the nest, namely their responses to humans approaching the nest. These responses will be studied with regard to reproductive value and other factors including incubation stage, nesting cover and clutch size. No manipulation will be done at the nests. These areas will be used as control sites. ATV's and a chain drag will be used. All nest marking materials will be removed.

(7) Michelle Gunness / Dr. Frank Rowher, Delta Waterfowl and Wetlands Research Station, Portage la Prairie, Manitoba. A Special Use Permit #97-015.gunness was issued to study observations of behavior of incubating hens at the nest, namely their responses to humans approaching the nest on WPA's in Wells County. These responses will be studied with regard to reproductive value and other factors including incubation stage, nesting cover and clutch size. No manipulation will be done at the nests. These areas will be used as control sites. ATV's and a chain drag will be used. All nest marking materials will be removed.

(8) Scott Parkin, ND State Water Commission. A Special Use Permit #97-061 was issued to allow the ND SWC to place a staff gauge in Chicago Lake to collect data on surface water elevations to compare with ground water levels already being collected in the area. The data will be used to determine effects of irrigation and other water appropriations on ground and surface water levels in the Kidder County Aquifer.

(9) **Ned H. Euliss, Jr. / Robert Gleason, Northern Prairie Science Center.** A Special Use Permit #97-063 was issued to survey restored wetlands to document vegetative response of various restoration time frames. These survey's will take place on WPA's in Stutsman and Wells Counties.

E. ADMINISTRATION

1. Personnel

Martin Brockman accepts a ROS position with Brazoria NWR, Angleton Texas. Plowing snow was not mentioned anywhere in the job description.

Brad Jacobs was selected for the PFT Career-Conditional Private Lands Bio-Tech position and officially EOD on June 22, 1997 even though he had worked here since April 4, 1994.

Private Lands Technician Natoma Schneider returned on 4-28-97 to collect additional data on grassland nesting bird use on rotational grazing systems established under the Partners for Wildlife Program and complete her thesis.

Erickson received an On the Spot Award for his hard work and dedication as the new Project Leader.

Jacobs received an On the Spot Award for his outstanding production of private lands work.

Biological Aide (GS-3) Jason Lura returned for his third summer at CLPP. He began on April 28th and worked until August 30th.

Volunteer Jeff Meadows started on May 15th and departed on July 11th.

The new performance appraisals were completed for the entire CLPP/WMD Staff in January and September.

Project Leaders meeting in Rapid City, SD was attended by Erickson and Schuchard.



1997 CLPP/WMD Staff
Left to Right 1,3,4,7,6,5,2,8

Permanent Staff

1. Mick Erickson, Supervisory Refuge Operations Specialist, GS-12 PFT. EOD 12/23/96
2. Kory Richardson, Refuge Operations Specialist, GS-9 PFT. EOD 10/13/96
3. Martin Brockman, Biological Technician, GS-7 PFT
4. Bradley Jacobs, Biological Technician (Private Lands), GS-6 Career Seasonal
5. Mary Beth Schuchard, Office Automation Clerk, GS-5 PFT

Temporary Staff

- Not pictured. Natoma Gleason, Biological Technician, GS-5, Term. 4/28-8/15
6. Jason Lura, Biological Technician, GS-3, TFT, 4/28-8/30
 7. Jeff Meadows, Volunteer 5/15-7/11
 8. Rick Bohn, Private Lands Technician, North Dakota Game and Fish Department

2. Youth Programs

3. Volunteer Programs

Jeff Meadows was recruited as a volunteer. Jeff assisted with biological assignments, waterfowl surveys and collection and distribution of biological control insects as well as disease monitoring efforts at Chase Lake NWR and in the WMD.

4. Funding

**Arrowwood Complex
Six Year Funding History
Fiscal Year (K)**

Fund	1992	1993	1994	1995	1996	1997
1261*	304.6	347.2	370.9	304.6	580.6	577.6
1262**	367.0	413.4	302.8	395.6	25.0	49.2
1121	75.0	55.0	42.5	57.0	58.0	60.0
1230	30.0	10.0	27.0	25.5	45.0	23.1
6860	13.0	13.0	7.4	7.0	7.0	7.0
8610	2.9	3.2	6.0	7.4	7.0	6.9
9120	52.3	93.0	111.2	103.5	100.4	105.6
GDU	2.5	6.0	3.0	4.0	3.5	3.5
WDA	38.5	38.4	49.4	49.9	50.9	53.0
TOTAL	885.8	979.2	920.2	954.5	877.4	885.9

*Includes YCC

**Includes MMS

5. Safety

There were no lost time accidents in 1997!

Safety films are shown as they are received. Monthly safety meetings covering a variety of topics were also held throughout the year.

Safety training included:

- ATV training at Sully's Hill for Jeff Meadows.
- All staff were step-tested prior to spring burn season and viewed videotapes on fire safety. All staff practiced deployment of fire shelters.
- Safety equipment (respirators, rubber gloves and boots, and tyvek suits) were purchased for pesticide spraying.
- Fire extinguishers were checked to ensure proper charge and location.
- The Aircraft Pre-Accident Plan was reviewed and updated as necessary.
- The Aircraft Safety Plan, Hazard Communication Plan and the Spill Control Plan were updated to recent staff changes.

- A hazardous waste survey was completed on the four NPSC buildings. Stu Wacker and Kevin Johnson of the Bismarck office inspected the buildings in anticipation of their transfer to USGS-BRD.
- The Hazard Communication Program was updated as necessary when new materials requiring MSDS are received on the station.
- Kevin Jensen and Marsha Hagge completed their safety inspection on the station on 8/21.
- Appropriate forms documenting notification requirements of the Emergency Planning and Community Right to Know Act was submitted to the ND Division of Emergency Management, the Local Emergency planning committee, and the Woodworth Fire Department. These forms detail storage of certain hazardous materials above certain threshold quantities. Propane and gasoline are reported annually.

6. Technical Assistance

Technical assistance was provided on several township road projects. In most cases easement wetlands were not involved. Where easements were involved the townships decided to avoid all impacts to easement wetlands rather than try to mitigate those impacts.

Staff spent many days attending several Water Resource Board and County Commission meetings to discuss the seemingly never ending "flooding problems". On the flipside, habitat conditions are excellent.

7. Other

Refuge Revenue Sharing Checks were delivered to Stutsman and Wells County Commissioners. The 1997 payment was \$36,025 for Stutsman and \$11,314 for Wells. This was a slight increase from 1996.

Erickson attended the Project Leaders meeting and the ND Chapter of The Wildlife Society annual meeting in Minot during February.

F. HABITAT MANAGEMENT

1. General

Most of our habitat management efforts are directed at maintaining upland cover in the best possible condition for nesting waterfowl. Prescribed fire, grazing, haying, farming and rest are the common tools that are used for habitat manipulation. Many fields seeded to dense nesting cover are becoming decadent with undesirable plant species becoming dominant. Most legumes have nearly disappeared from their stands and they are nowhere near as vigorous as they once were. Stutsman County contains 96 WPA's and Wells County has 34 WPA's. They range in size from 0.97 acre to 3,013 acres.

In 1997, all Wells County WPA's files were reviewed. The most recent habitat management information was updated into the WPA d-base file. This information is valuable for management purposes and is easy to access and update using the computerized database file. All annual habitat management actions such as haying, burning, grazing and seeding are entered into this database.

Breakdown of WPA Lands in Stutsman and Wells Counties

Habitat Types	Native Grass	Tame/DNC Grass	Wetland	Trees/Brush	Misc.	Totals
Stutsman	10,863.59	8,221.15	8,076.07	149.41	32.25	27,342.47
Wells	2,220.62	2,977.31	2,652.34	95.29	29.64	7,975.20
Totals	13,084.21	11,198.46	10,728.41	244.70	61.89	35,317.67

2. Wetlands

The lands within the WMD contain some of the highest densities of wetlands in the prairie pothole region. This area is also recognized by many as the most productive waterfowl breeding area in the continental U.S. The past five years have seen above average precipitation after several years of prolonged drought. The heavy rains and snowmelt runoff have recharged all wetlands for the 97 breeding season. Wetland conditions remained excellent through the year, with over 11 inches of rain from June to October.

Some of the wetlands throughout the WMD became cattail choked over the last several years due to low water conditions. The return of water in 1993 through 1997 appear to have drowned out the majority of the cattail choked wetlands. A compatibility determination and aerial application pesticide use proposal was completed for a cattail control project proposed by USDA-ADC. ADC wished to spray areas they believed were acting as roosts for blackbirds, a significant problem for sunflower producers. No spraying was completed due to the fact that many of the problem areas no longer exist due to the high water.

Staff attended meetings of the Pipestem Creek Watershed Improvement Project, located in SE Wells County. This project was initiated by the Wells County NRCS Office and has centered on improving water quality in the Pipestem Creek and Sykeston Lake. Most of the watershed improvement project has involved increasing the use of no-till farming in the drift prairie areas.

A total of 3 drained wetlands covering 23.5 surface acres were identified on Thiesen and Northwestern Lake WPA's in Stutsman County. The wetlands were drained prior to USFWS acquisition. All 3 wetlands were restored back to their original condition in September when soil conditions dried to allow for heavy equipment use. A 3.9 acre dam repair was also completed on Mt. Moriah WPA in September.

John Dockter, from Senator Conrad's office contacted Erickson concerning a perceived water problem by an adjacent landowner to the Woodworth Station WPA. The landowner thinks that a dam constructed in the 1960's is causing flooding problems to his land which is approximately 1.5 miles upstream. He claims that the dam is slowing the water too much and holding water in his partially drained wetlands. He has filed tort claims twice, received permission to clean out a railroad R-O-W, and hired an engineering firm to survey the area. The survey found that the natural topography varies and that the spillway elevation is actually lower than "high spots" in the coulee.

Following is a List of WPA's Where Drained Wetlands Were Identified and Restored

WPA	# of Wetlands	Total Surface Acres	County	Restored
Northwestern Lake	2	16.6	Stutsman	2
Thiesen	1	6.9	Stutsman	1
Total	3	23.5		3

3. Croplands

Farming on WPAs is to prepare for grass seedback to replace decadent stands of grasses or newly acquired areas of crop to grass. In the past, most tamegrass renovation was accomplished by breaking out the old grass, cropping for several years and reseeding to DNC. DNC seedings planted in 1995 showed excellent 1996 and 1997 growth of sweetclover and wheatgrasses.

All former cropland in Wells County, a total of 1,077.3 acres, has been returned to permanent vegetative cover since 1993.

Stutsman County WPA's contained 271 acres in cropland. The units with cropland are as follows:

- Ackerson WPA had 95 acres planted to wheat. The FWS's share was 25% of the crop baled into large round food bales. This unit was broken out in 1988 as part of the leafy spurge control program.
- Rott WPA had 32 acres planted to wheat. This field was broke in 1990 as part of the "Adopt-A-WPA" program by the Stutsman County Wildlife Federation. The club baled up the entire 30 acres into large round food bales used for winter food plots for resident wildlife.
- Woodworth Station WPA had 144 acres planted to wheat. This field had been left idle in the past for a Northern Prairie Research Center study and was nicknamed the weed patch. The field will be farmed for four years and then be seeded to native grasses. The FWS did not receive a share of the crop this year. The farmer received 100% of the crop this year for breaking up the field and site preparation.

4. Grasslands

There are four main grassland cover types in the Chase Lake WMD: native grassland, seeded natives, DNC, and other tame grasses/legumes.

The farming program is used to rotate tame and DNC fields with croplands. The grazing and burning program is used to invigorate and rejuvenate natives, DNC and tame, while suppressing certain tame grasses such as brome, Kentucky blue, and certain noxious weeds. Haying is used to remove excess litter and for noxious weed control. Hay cooperators were not difficult to find for WPA units in 1997, as land enrolled in the CRP program was not eligible for haying in Stutsman and Wells counties.

5. Grazing

Four units were grazed in Stutsman County for grassland rejuvenation using cattle. Blue Lake WPA had 95 acres grazed, Dunphy Lake WPA had 283 acres grazed and the Odegard WPA had 130 acres grazed. These three units are parts of Mini-Joint Venture Grazing Systems. This type of system encompasses FWS owned and private owned land into one grazing system. This enables better management of FWS lands while increasing nesting cover on adjacent private land. Chase Lake WMA had 1,291 acres grazed by one herd in 1997.

Two units were grazed in Wells County for grassland rejuvenation using cattle. Pony Gulch WDA had 73 acres grazed and Silver Lake WPA had 56 acres grazed.

Three Stutsman County units were grazed with sheep for control of leafy spurge. Ackerson WPA had approximately 160 acres grazed by 280 ewes with lambs. This unit is divided into three pastures and the cooperator rotates the herd between the cells. The grazing season was from mid-May to mid-August.

Tompkins WPA had 160 acres grazed by 100 sheep (ewes). Grazing dates were from mid-May thru September.

Wiese WPA had stocked 40 ewes to graze 35 infested acres. The sheep grazed the WPA from mid-May thru mid-September.

6. Haying

WPA grasslands are hayed to reduce litter accumulation, stimulate new grass growth or control weeds. Thirty-nine permits for haying were issued in the WMD in 1997. The majority of the hay was released to cooperators for weed control, primarily wormwood and leafy spurge.

Haying on Waterfowl Production Areas Chase Lake WMD 1997

County	# of Permits	Acres Hayed
Stutsman	26	528
Wells	13	1,106
Total	39	1,634

7. Fire Management

All staff updated their fire training needs list and fire training records and switched to the taskbook system of qualifications recording.

Prescribed burns were completed on three WPA's in CLWMD. Thiesen WPA for 250 acres, Woodworth Station WPA for 360 acres and Crystal Lake WPA for 48 acres.

A wildfire burned 25 acres on the Chase Lake WPA and 2.5 acres of private land on May 9. The fire was caused by downed power lines crossing the WPA. The Chase Lake type 6 engine was dispatched and manned by Brockman and Bohn who extinguished the fire 45 minutes after arrival. Arrowwood Range Tech. Blaschke assisted in the investigation and completed the Individual Fire Report. Tri-County power was notified and two employees arrived to disconnect the power. Tri-County had been on site May 6th working on the power lines and had noticed smoke coming from a powerline pole but felt the fire would go out. They neglected to inform anyone that the powerline pole was on fire.



The winter storms of 1996-1997 knocked down power lines and caused a wildfire on Chase Lake WPA on May 9. Fortunately, the gravel road and high water conditions prevented this fire from consuming thousands of acres of grasslands.

MJB

8. Pest Control

Pesticide Use Proposals and Reports were completed in January for 1996 and forwarded to the Regional Office.

Brockman attended the ND Weed Control Association biological control strategies meeting.

Lura mowed 32 acres of Canada Thistle on the Hoornaert WPA in Wells county.

Both counties have weed officers who are extremely diligent in their leafy spurge control efforts. Cooperation has been increasing between the FWS and the weed officers as long as response to weed complaints are handled quickly.

Waterfowl Production Area's Sprayed for Leafy Spurge Control 1997

County	# of WPA's	Acres Sprayed	Acres Mowed	Total Acres
Stutsman	25	63.5	96.9	160.4
Wells	9	38.0	58.7	96.7
Total	34	101.5	155.6	257.1

In addition, 2-4D herbicide was applied on 19 acres on North Barnes Lake WPA for broadleaf weed control in newly seeded native grass plantings. Twenty acres on Rott WPA was sprayed for future grass seeding.

Several WPA's in Stutsman and Wells County have release sites of spurge eating flea beetles (Apthona spp). These insectary sites were established through cooperation with the Wells County Weed Board and the North Dakota Department of Agriculture and independently by the CLWMD. Net sweeping of the 1992 release site resulted in capture of several Apthona cyparissiae, the species of beetle released in July 1992. Beetles were located up to 80 yards away from the release site. We hope to collect from this site and redistribute to other sites in 1998, both public and private land. Spread of beetles from their release sites will allow us to reduce the amount of area which requires chemical application, which is the primary goal of our bio-control program.

As a result of an aggressive bio-control emphasis from 1992 to 1997, 41 WPA's in Stutsman County and 38 WPA's in Wells County have bio-control sites established on them. WPA's in CLWMD have a total of 306,000 insects of 3 species released on them. We are optimistic that these releases of bio-control agents will help us reduce our spraying of chemical, whose only effect is to slow the spread of spurge and pacify weed boards and neighbors.

The Ackerson WPA, a 320-acre unit in Stutsman County, was treated with cooperative farming and grazing. Approximately one-half of the 160 acres of tame grass is infested with spurge. Some 95 acres of wheat was produced on ground previously cultivated for spurge control. This year the cooperator alternated 280 sheep with lambs between the three pastures

to ensure control of the spurge with very little grass consumption. Grazing was from mid-May thru August in this system.

Sheep grazing was also used to control 160 acres on the Tompkins WPA and 35 acres on the Wiese WPA.

Release Sites for Stutsman County in 1997

WPA	Species	Quantity	# Sites
Hawks Nest WDA	A.Lacertosa/Czwalinae	25,000	1
Mt. Moriah	A.Lacertosa/Czwalinae	10,000	3
Northwestern Lake	A.Lacertosa/Czwalinae	25,000	1
TOTAL		60,000	5



Flea Beetle Eating Away at the Spurge

9. Water Rights

Maintenance to water control structures on Indian Hills WDA, Pipestone WDA, and Crystal Lake WPA was required several times during the summer to plug leaks between poorly fitting stoplogs.

Water Management Reports and State Water Commission Annual Water Reports for the 1996 calendar year were completed by Brockman in March 1997. While completing the ND State Water Commission Water Use Survey, it was discovered that several WPA's in Stutsman County have perfected water permits. Annual management reports were initiated for these units and a database field established on the WPA database system for tracking these permits.

Several farmers adjacent to Chicago Lake WPA have made application for water permits for groundwater removal, for irrigation use. These notice of applications are forwarded to the Regional Division of Water Resources, which has requested that additional consideration be given to adjacent FWS interests. Additional aerial photo documentation of wetlands protected by FWS easements will be made prior to irrigation starting so that impacts to wetlands can be assessed more thoroughly.

10. Wilderness and Special Areas

Chase Lake NWR consists of 4,385 acres, of which 4,155 acres are designated Wilderness Area. Chase Lake itself comprises 2,053 acres of the wilderness area, leaving 2,102 acres of upland grasslands with a couple of scattered wetlands. Topography is steep to rolling, with the lake being the lowest point. The lake has no outlet and is highly alkaline. Two islands, seven and nine acres, are occupied by thousands of nesting white pelicans, gulls, and double-crested cormorants. Due to high water conditions, both of these islands were under water and all of the pelicans were forced to nest on the Chase Lake Peninsula. During time of low water conditions, a third island appears and is heavily used by shore birds.



Chase Lake NWR is home to North America's largest Nesting Colony of American White Pelicans.

11. Waterfowl Production Easement Monitoring

Easement monitoring flights were conducted during the spring in 1997. Stutsman County was flown on April 22 and 23. Staff assisted the Arrowwood WMD with flights in Eddy and Foster Counties on April 24. Wells County flights were completed on May 1. Ground checks were completed in Stutsman County on May 2, 5 and 13. Wells County ground checks were completed on May 6. A total of 3 drainage violations were discovered in Stutsman County and one in Wells County.

Stutsman County Easements 438X,1 and 442X,1 both had a number of ditches on them that were constructed using a relatively new drainage tool called a PTO ditcher or hurricane ditcher. This device works similar to a snow thrower in that it throws the dirt out and away from the ditch a distance of 30 feet or more. This machine constructs a flat, square sided ditch approximately 3 feet wide and up to 12 inches deep. These ditches can be very difficult to spot from the air. These ditches are relatively narrow and shallow compared to a scraper but with multiple passes these machines can construct a very wide and deep ditch. The ditches on these 2 easements were single pass ditches which can be effectively closed using cross cultivation with an implement such as a field cultivator. Multiple passes are normally required to close them adequately. Both landowners cross cultivated the ditches before spring planting. The ditches were inspected and approved, and the cases both closed in October of 1997.

A scraper was used to drain a seasonal wetland on easement 490X, 1 in Stutsman County. A file and aerial photo review along with a ground check also revealed an old ditching violation that was constructed some time in the late 1970's. The landowner contact concerning these 2 violations went very well and he was very cooperative. It was learned that the old ditch had been constructed by the township or county for the purpose of saving a flooded road in about 1978. That road had since been built up. The landowner agreed to restore the recently drained seasonal wetland before spring seeding. We agreed to wait on the restoration of the old violation so that a survey could be completed. There was concern that restoring the wetland could affect a different road and the sewer outlet to the landowners farmhouse. An inspection of the recently drained wetland on May 31 revealed that it had been adequately restored and the case was officially closed on October 21, 1997. The survey and restoration of the old violation is still pending.

The only drainage case in Wells County was on 39X,1,2. The landowner used a front-end loader to drain a small seasonal wetland. Contact was made and restoration was voluntarily completed by the landowner in November. The final inspection was made and the case closed on December 22, 1997.

A total of 33 easement permits were issued in 1997. Fifteen burning permits, 15 temporary ditch permits and 3 pumping permits. The ditching and pumping permits were issued because of health and safety issues concerning roads and buildings. A number of the temporary drainage permits were extensions of previously issued permits.

Two mapping requests were received from the same landowner as a result of the recent Federal Court decision in the Johansson case. A total of 6 maps were completed. Four on Stutsman County 173X and 2 on Stutsman County 347X,1.

G. WILDLIFE

1. Wildlife Diversity

A diverse habitat base exists in the WMD that supports a variety of wildlife species. Native prairie, seeded natives and various mixes of tame grasses and legumes can be found. Excellent wetland complexes still exist, especially on the Missouri Coteau. Large areas of CRP grassland have been established in the WMD and these have contributed to an increase in grassland associated species.

2. Endangered and/or Threatened Species

Piping plover surveys have been conducted at Stink Lake, Crystal Springs WPA, Mud Lake WPA and Chase Lake NWR in Stutsman County in past years. In 1997, habitat for piping plovers continued to be inundated due to high water conditions throughout the district.

Peregrine falcons and bald eagles migrate through the district and several sightings of each did occur in 1997. The arrival date for Bald Eagles was on March 15.

A immature Whooping Crane spent 3 ½ weeks in a field near Pingree, ND. Fortunately, it was only 300 yards from Highway 36 so many people were able to see it. On one weekend Bohn showed over 20 people a closeup with the Questar spotting scope. We learned from one farmer that he saw three Whooping Cranes in the same area a few years ago.

3. Waterfowl

On March 21, Canada geese were observed between Medina and Woodworth in Stutsman County. The twenty-year average for first sighting of Canada Geese is March 16. Mallards were observed on March 26. Snow geese were observed on April seventh, whitefronts were observed migrating on April eighth, blue-winged teal arrived on April 21, and ruddy ducks arrived on April 25. The first Canada Goose brood was observed on May 14.

Due to excellent water conditions throughout the district, breeding pairs were abundant. Every pond seemed to contain several pairs of ducks. Extensive nest searching efforts throughout the district indicated a very late start to the duck nesting effort.

Nest searches were also conducted by CLWMD and Arrowwood NWR staff on the Gaier predator fence.

Samples of the Data Collected on the Gaier Predator Fence

Study Area	Species	Successful Nests	Unsuccessful Nests	Success Total	Success Apparent Mayfield
Gaier	Mallard	3	1	75%	57.3%
Gaier	Gadwall	4	2	66.7%	41%
Gaier	BWTeal	7		100%	100%
Gaier	Pintail	1		100%	100%

The Gaier fence is 20 acres and contained 0.9 nests per acre. It was searched four times, on 5/12, 5/30, 6/18 and 7/9.

As part of the Lake Audubon Compatibility Plan for island replacement, Stutsman County was selected as one of the counties recommended for island construction by the Bureau of Reclamation. A total of eight WPA's were recommended for islands. They are as follows: Gilbert, Schuler, Blue Lake, Zimmerman, Heib, Matthews, Durham (two), and Crystal Springs. A re-evaluation of sites will be completed before final site selection is made. This work was completed in 1995 and has not been acted upon due to high water conditions and the extra associated costs associated with projects constructed during high water conditions.

Scattered flocks of small Canada geese and a few snow geese were present in the WMD for the opening of goose season. Ducks appeared to be fairly plentiful throughout the season. The major flocks of snow geese by-passed our area. Overall, hunting pressure was light throughout the season. Ducks remained in the area, feeding in irrigated corn fields through the first week of deer season.

Bohn recorded four red collared snow geese from a flock of 6,500 north of Medina; as it turned out they were from a new study on Baffin Island, (only 1,000 were neck collared)! There were 1.2 million adults aerial surveyed in this colony this summer. The CWS was very happy with this observation as this was perhaps the first sighting of these birds in the 2,000 miles they traveled so far. Other unpublished numbers showed 0.7 million adults currently on South Hampton Island and 150,000 adults on West Hudson Bay as of October.

4. Marsh and Water Birds

Fair numbers of greater and lesser sandhill cranes could be found in the western part of the WMD during spring and fall migrations. Cranes were first sighted on March 24. Western Stutsman and southwestern Wells Counties are used very heavily by cranes during migration.

White pelicans were first observed on April 7, tundra swans on April 8, great blue herons on April 6, and cormorants were observed on April 10. White pelicans and double-crested cormorants from the breeding colonies at Chase Lake NWR are seen frequently feeding in

wetlands in the WMD. Eared Grebes were observed on April 19 and Pied-bill grebes were observed on April 20. Sora rails were observed on May 14, Black-crowned night herons were observed on April 29. Cattle Egrets were observed on April 24 and American Bitterns on May 8. Black-crowned Night Herons and Cattle Egrets nested together on the Chase Lake Peninsula in 1996. This was the first recorded nesting of Cattle Egrets on the Refuge.

Results of the annual aerial survey on nesting white pelicans on Chase Lake NWR for 1997 showed 38 nests on the smaller island and 9,182 on the peninsula. The survey was completed on June 5, 1997. This is only the third year that nesting occurred on the peninsula and most of the nesting activity has moved from the islands, as they were mostly submerged. The number of nests decreased by 599 in 1997 but 1996 was the highest count since 1972 when surveys were first recorded. The lowest count was in 1974 when 3,082 nests were tallied. Total breeding birds counted on the refuge in 1997 was 18,364.

Nesting colonies of eared grebes have been found on the Mud Lake and Cleveland Slough WPA's in Stutsman County. No checks were made in 1997 to determine if any colonies existed in the district.

Sora and Virginia rails, pied-billed grebes, American bitterns, and great blue herons all nest in the WMD, although not in any substantial numbers or in concentrated areas.

Chase Lake White Pelican Colony Nesting Effort 1989-1997

Year	Small Island	Large Island	Peninsula	Total
1972	1567	3260		4827
1973	1880	2031		3911
1974	1891	1191		3082
1975	2456	1765		4221
1976	1849	2906		4755
1977	931	3688		4619
1978	659	3930		4589
1979	383	3668		4051
1980	1371	4771		6142
1981	1544	4282		5826
1982	1389	3879		5268
1983	2253	3039		5292

1984	1331	2590		3921
1985	No survey			
1986				4995
1987	1856	5283		7139
1988				
1989	2313	4316	0	6629
1990	1824	3960	0	5784
1991	No survey	No survey	0	No survey
1992	2564	3412	0	5976
1993	3472	5081	0	8553
1994	4308	4237	0	8545
1995	1797	3888	3495	9180
1996	585	539	8657	9781
1997	38		9144	9182

5. Shorebirds, Gulls, Terns, and Allied Species

Numerous species of shorebirds use the WMD during the spring and fall migration. High water conditions continued to inundate many areas of quality shorebird habitat in 1997.

Willetts and Godwits were observed on April 23, Ring-billed gulls on April 5, Killdeer on April 8, Lesser Yellowlegs on April 21, American Avocets on March 21, and Common Snipe on April 22. Willetts, marbled godwits, upland sandpipers, and Wilson's phalaropes nest in the WMD. These species prefer open native prairie with grasses that are fairly short. Common snipe, greater and lesser yellowlegs can be seen throughout the WMD with snipe being a relatively common breeding species. Killdeer, common terns and American avocets are very common breeding species. Nesting avocets are encountered quite often on islands. Nesting records and observations are not consistently recorded.

Franklin's gulls and black terns have nested in the WMD, but searches have not been conducted for these species. California and ring-billed gulls also nest in the WMD. There are several thousand nesting at the islands on Chase Lake NWR.

6. Raptors

Red-tailed hawks, Swainson's hawks, northern harriers, American kestrels and great-horned owls are common nesting species in the WMD. Ferruginous hawks and short-eared owls nest in the WMD, but are not considered common. Northern harriers were observed on Feb. 22, and Rough-legged hawks arrived on March 21. Great Horned Owls were observed nesting on March 4 and on March 17, snowy owls were still observed in the area. On March 21, Ferruginous and Swainson's Hawks were observed. A kestrel was observed on April 4. A long-eared owl was observed on May 13.

Cooper's and sharp-shinned hawks are seen occasionally in the WMD, as are goshawks and prairie falcons. Even more infrequent are observations of burrowing owls, which are known to nest in the district.

7. Other Migratory Birds

Two mourning dove survey routes are censused in the WMD. The Harvey Route is handled by N.D. Game & Fish Personnel, while the Carrington Route is handled by Arrowwood staff. Staff from Chase Lake conducts a survey in Kidder County for Long Lake WMD.

Total Number of Individual Doves Heard Calling by Route During 1987-1997

Year	Harvey Route	Carrington Route
1987	46	52
1988	68	78
1989	57	77
1990	57	69
1991	76	76
1992	20	45
1993	40	33
1994	**	24
1995	33	16
1996	53	36
1997	49	25
Average	50	48

** Indicates survey completed incorrectly.

8. Game Mammals

White-tailed deer are common throughout the WMD but general observations indicate that the deer numbers in the district are down after the winter of 96-97. Hunting success rates still remained high, close to 75% for this area. Harvest success for the regular firearms season for white-tailed deer was slightly affected this year due to the hard winter. With a large herd size and several winter storms in the winter of 1996-97, the area deer began feeding upon haystacks and silage piles. This prompted many landowners to call the office seeking assistance. Their calls were forwarded to the ND Game & Fish Department when applicable. ND Game and Fish Wildlife Tech, Rick Bohn, spends the majority of his time in the snow-covered months distributing corn and alfalfa bales to prepare short-stop stations, designed to keep deer from livestock food supplies.

Occasional moose sightings are reported for the WMD. Several moose cows with young were reported on the Hoornaert WPA, south of Fessenden and on Sweetgrass WDA, south of Bowdon.

Several reports of antelope generally occur in the WMD. Sightings of these animals has been rare lately due to harsh winters resulting in a decrease in the population.

Red fox, raccoon, and striped skunk, the three major nest predators, are abundant throughout the WMD. Coyotes are increasing in some areas and badgers and mink are also fairly common. Despite reports of a mange outbreak and many observations of sick fox throughout the district, the population of short-legged egg eaters does not seem to have decreased significantly.

Muskrats were virtually non-existent throughout the district in 1992-1994, due to prolonged drought, except along the river systems. With the water now back, there has been an increase in numbers and hopefully the numbers will keep rising. Muskrats were observed traveling in areas far from rivers on March 3, and many permanent wetlands had muskrat houses used as nesting areas by Giant Canada Geese.

Thirteen-lined, Richardson's and Franklin's ground squirrels are also found in the WMD in great numbers. Short-tailed and least weasels, porcupines, cottontail and white-tailed jack rabbits are found throughout the WMD, but are not all that common.

9. Other Resident Wildlife

Hungarian (gray) partridge, sharp-tailed grouse and ring-necked pheasant are the common game birds in the WMD. It appears that the combination of several severe winters and the extremely wet, cool summers have had negative impact on their populations, with sightings reduced in 1997 as compared to 1993. Pheasants are almost non-existent in the district, with the exception of farmstead areas and those populations released by local wildlife clubs. The sharp-tailed grouse appeared to have fared the best of the three and populations are stable with numbers of hunters appearing to decline.

Local wildlife clubs have contracted with local landowners for food plots and have placed food bales in many areas of the county for resident wildlife. The ND Game and Fish Department has also been responsible for establishing food plots on CRP lands through the District.

10. Fisheries Resources

There are three WPA's in the WMD that contain a fishery. Two of the WPA's are in Stutsman County, Barnes Lake and Crystal Springs, while the third WPA is in Wells County, Crystal Lake WPA.

A portion of the shoreline of Barnes Lake in Stutsman County is owned in fee title. The lake itself is a meandered body of water. The walleye fishery in this lake was at one time excellent. Northern pike and yellow perch also existed. The lake level was extremely low as a result of no spring runoff and below normal precipitation for several years. Winter and/or summerkill during 1992 virtually eliminated all game fish in the lake. The ND Game & Fish Department began re-stocking programs for the lake in 1994, 1995, 1996 and continued in 1997.

Crystal Springs WPA contains the second fishery in Stutsman County. The lake has maintained sufficient water levels through the drought years as it is spring fed. The ND Game & Fish Department also stocked fish here in 1997. Crystal Springs has an abundant bullhead population and Northern Pike were stocked to experiment to see if bullheads would suffice for forage of Northern Pike.

Fish Stockings for WPA's in 1997

Lake	Fish Species	Quantity	Size
Barnes	Northern Pike	26,000	Fingerlings
Barnes	Yellow perch	61,000	Fingerlings
Barnes	Walleye	26,000	Fingerlings
Crystal Springs	Northern Pike	7,000	Fingerlings
Crystal Springs	Walleye	7,000	Fingerlings

The third fishery is located in west central Wells County on the Crystal Lake WPA. This 30.8 acre feet reservoir was inherited when the WPA was purchased. It is unknown if the reservoir still contains a fishery, but at one time it held perch and bullheads.

11. Animal Control

Blackbird depredation complaints are received regularly in the late summer and fall. These are referred to USDA - Animal Damage Control for action. As part of the FWS Partner's for Wildlife program, we can work with private landowners to reduce suitable blackbird roosting sites in cattail choked wetlands. Most permanent wetlands that have been cattail problem areas in the past have been flooded. The district also has several propane exploders for loan to area farmers experiencing damage from blackbirds, waterfowl or crane.

Predator control activities in the WMD are conducted on several areas to increase waterfowl production.

Areas Trapped with Catch

Area	Raccoon	Fox	Badger	Skunk	Weasel	Franklins Ground Squirrel	TOTAL
Van Ray Isle (under water)							
Redlin Fence			1			1	2
Schlecht Fence				1			1
Hoffman Fence	1	1	3	1		4	10
Haglund Isle	1					4	5
CLNWR Fence							0
L. Louise Isle	3						3
Theisen Fence	1			4			5
Walsh Fence				3			3
Hertel Fence	1		1	2	1	2	7
Ackerson				3			3
Geier	2						0
Total	9	1	5	14	1	11	39

Several complaints were received in 1997 for waterfowl feeding in unharvested swathes of small grain in the Woodworth area. All ten propane exploders and many dozen black flags were loaned out to farmers until all grain was harvested.

12. Marking and Banding

A cooperative banding project involving American White Pelicans was undertaken with USDA-ADC at Chase Lake NWR. A total 1,457 juvenile pelicans were banded at the refuge on June 28, 1997. Approximately 26 people including staff from Northern Prairie Science Center, USDA-ADC and the Chase Lake Prairie Project assisted with the project. Seven adult pelicans were also banded.



Pelican banders hard at work putting bracelets on some of the 1,457 juvenile pelicans. It's not a dangerous job unless you look up! RB

13. Disease Prevention and Control

Several WPAs in the WMD are traditional botulism outbreak areas. All of the wetlands with a history of botulism outbreaks were checked several times throughout late summer. Botulism was discovered on the Liebelt WPA in Stutsman County. One-hundred sixty four birds were collected and disposed.

In the past, staff have been detailed to other refuges in ND to assist with botulism cleanups. Richardson and Lee Albright assisted Long Lake WMD with cleanup on Horsehead Lake in Kidder County.

H. PUBLIC USE

1. General

Most visitation occurs between May and October. Visitors in the summer months are often here to birdwatch or see other prairie sights and fall visitors are generally hunters.

2. Outdoor Classroom - Teachers

3. Interpretive Exhibits/Demonstrations

The Crystal Springs rest area on I-94 in western Stutsman County receives heavy use and the wildlife/wetlands interpretive exhibit that we have located there receives over 1,000 visits a month during the peak summer tourist season. The signs are in need of replacement and updating and a package was developed for this purpose. By years end the interpretive panels were received and will be installed in 1998.

4. Other Interpretive Programs

March - Martin attended the Wells County meeting to assist in providing guidance on conservation planning priorities to the Wells County SCD.

April - Erickson conducted an interview with a reporter from the Minot Daily News on the pelican population of the Chase Lake NWR.

May - Working with Hanson Communications, Fargo, ND with slides of the Chase Lake NWR, native prairie and pelicans for use in the North American Wetlands Interpretive Center's pamphlet and booklet.

Martin completed a visitor use leaflet including a map and directions to Chase Lake Refuge and the CLWMD/CLPP office in Woodworth.

June - Natoma gave a tour and talk at Chase Lake NWR informing about 12 individuals from Bismarck Bird Club about the refuge, CLPP and the grassland passerine study being conducted in the project area.

Erickson showed the North Dakota Wetlands Trust board the site of the proposed North American Wetlands Interpretive Center on the Klostrich WPA.

July - A interview was given to Ron Wilson of the Minot Daily News concerning the pelican banding at Chase Lake National Wildlife Refuge. This resulted in a nice article and color photo in the outdoor section of the paper. Additional articles and photos were printed in The Forum and the Jamestown Sun.

Kory met with biologists from the Japanese Association for Wild Geese Protection to discuss the Chase Lake Prairie Project and its accomplishments in working with private landowners to provide for profitable agriculture and abundant wildlife. These biologists would like to work with landowners in Japan to assure that there is adequate habitat for three species of geese that winter there. A short tour of the District and the Chase Lake NWR was eye opening for them as they were amazed at the diversity of wildlife observed using the area wetlands.

The Chase Lake Prairie Project and the NWR are now available on the Internet. Informative articles and photos were installed in the proper format and can be found at <http://www.r6.fws.gov/refuges/chase> and the office e-mail is fw6_rw_chase_lake@fws.gov.

September - Final plans and exhibits were prepared for the annual Woodworth Eve of Autumn Festival held on the 20th. The CLPP display was installed and a variety of NWRs week promotional materials were handed out to visitors. An introduction to fishing and bow hunting programs was given to approximately 30 kids.

October - The fund raising kick-off meeting was held on October 15 explaining the methods to be used in contacting potential contributors. Governor Schaffer delivered a luncheon speech expressing his support of the Center.

Erickson met with Shawn Perich, an outdoor writer from Duluth, MN for a interview on the CLPP and its progress since 1989.

Erickson met with Harvey Nelson and John Lokemoen on the Strand WPA to discuss plans to have a memorial dedication in honor of Leo Kirsch next spring. The Stutsman County Wildlife Club recently purchased an 80 acre tract next to the Strand WPA to honor Leo Kirsch.

November - Informational pamphlets on the CLPP and NWR were sent to the Bismarck/Mandan Convention and Visitors Bureau.

An outdoor writer from Grand Rapids, MI wrote requesting birding information on ND refuges after visiting our web site.

December - Richardson attended the hunter education class at Pettibone, ND on the 1st and presented information on law enforcement and wildlife identification to 22 students.

5. Hunting

Waterfowl production areas in the WMD are used extensively by upland game, waterfowl, and big game hunters.

Opening weekends generally see the heaviest pressure, although WPA's receive heavy pressure during the entire firearms deer season.

6. Fishing

Several fisheries exist in the district but no attempts are made to monitor the populations or success of the fisherman.

7. Trapping

Waterfowl Production Areas are open for public trapping in accordance with state regulations. No special permits are needed. Interest in trapping has diminished considerably in the past several years. Low fur prices have certainly had a major impact on the trapping effort. The furbearer populations throughout the WMD are quite high and they are having a significant impact on ground nesting birds. In some areas red fox are at record high levels. More trappers and a stronger trapping effort could play a beneficial role in reducing the number of mammalian nest predators. Several persons were checked or observed checking traps for muskrats after wetlands froze over in November.

8. Off-Road Vehicling

Unauthorized use of motor vehicles on WPA's is a problem that never seems to end and is almost unsolvable without intensive law enforcement efforts. Signs, fences, and news releases all seem to do little good.

9. Law Enforcement

Richardson successfully completed the twelve week Land Management Police Training at the Federal Law Enforcement Training Center, Glynco Georgia. Richardson attended the training January 26 through March 28. He returned back to work on April 1 and was glad to be back.

Richardson attended the two week Refuge Officer Basic School at FLETC in Glynco, Georgia.

Erickson and Brockman attended the Annual Law Enforcement Refresher in Tucson, Arizona.

Law enforcement re-qualification was completed by Erickson and Richardson at Miller, SD.

Brockman traveled to Ogden, Utah to testify in court on an early shooting ticket issued from last fall's Utah Waterfowl Task force.

Erickson, Richardson and Brockman all spent time in the air flying easements in Stutsman and Wells Counties. Richardson assisted Lee Albright from Arrowwood NWR in completing flights in Foster and Eddy Counties.

Richardson attended the Easement Law Enforcement training session held at Sully's Hill NGP on April 10 and 11.

Trespass cattle were noted on the Frederick Whipple WPA and the cooperator notified to remove them.

Mick and Kory attended the easement mapping session that was held in Jamestown on July 23.

OPM investigator conducted personnel interviews at the station for Richardson's background investigation.

Chase Lake NWR was patrolled extensively during deer season, a lot of hunters complaining about the lack of deer.

Hunting pressure for waterfowl was relatively light, compared to the amount of birds in the area. Richardson and Albright checked approximately 50 hunters on opening weekend and periodic patrols were conducted through out the season.

Brockman completed the annual LE incident report.

I. EQUIPMENT AND FACILITIES

1. New Construction

In 1995 two surplus residences from the decommissioned Fortuna AFB were moved to the Woodworth WPA, to be renovated into headquarters office space. A design was completed to connect the two houses into one structure. The contract included construction of a full basement, a connected crawlspace, and a mound type septic system to be constructed on the Woodworth WPA. On June 26 and 27 the residences were placed on the foundation by Huwe Housemovers of Minot, ND.



These two houses will someday become our new office. We're not sure if we should paint the green one pink or the pink one green? MJB

Also in 1995, a 124-foot deep, 5-inch water well was drilled by Huron Drilling adjacent to the office to replace the shallow well as our source of domestic water. The contractor did not adequately assess the size of sands present in the aquifer prior to the placing of the well screen located at the bottom of the casing. In May of 1995 sand particles began appearing in the water lines in the shop building. Several attempts were made to rectify the problem, including installation of sand filters on the lines where they entered the buildings, as a stopgap measure prior to a permanent solution. Several attempts were made to get the well driller to specify exactly what size screen was placed and to submit the sieve analysis which was used to recommend the screen size but he will not comply with our requests.

In April of 1997 Huron Drilling returned to the domestic well project and installed a new subscreen in the well casing. The well was pumped intermittently and sand particles are still present. All buildings were hooked up to the shallow well we were previously using.

In October the construction plan for the new office reached CGS and construction is planned to begin on May 1, 1998.

2. Rehabilitation

The seasonal work force spent many days completing boundary checks and replacing WPA signs as needed.

3. Equipment Utilization and Replacement

A Kawasaki Bayou 4-wheeler was purchased for easement evaluations and posting WPA's.

An Arctic 550 snowmobile was purchased for filling nesting structures and allow a staff member to get to work and move snow if we have as much snow as the winter of 96-97 again.

An Olympus camera was purchased to be used for wetland easement violations.

4. Computer Systems

Several new pieces of computer equipment were purchased in 1997:

- Gateway 2000 E3000-1200 3.2GB HDD Computer
- Gateway 17" Color Monitor
- Gateway 2000 Solo 2300LS-133 Multimedia Notebook.

J. OTHER ITEMS

1. Cooperative Programs

Partners For Wildlife (PFW)

The Chase Lake Prairie Project (CLPP) encompasses 5.5 million acres within 11 counties in the Missouri Coteau physiographic subregion in south central North Dakota. The 5.5 million acre CLPP encompasses approximately 50% of the Missouri Coteau physiographic subregion of the prairie pothole region of North Dakota. The Coteau is a glacial escarpment featuring rolling hills, dotted with thousands of small wetlands with densities of up to 100 wetlands per square mile. The Missouri Coteau was formed by the melting and retreat of the last glacier about 10,000 years ago.

The climax vegetation of this coteau is eastern mixed-grass prairie. The predominant vegetation is a mixture of short and mid-grasses such as Prairie June grass, Green Needle grass, Needle and Thread, Blue Grama, Little Bluestem, Yellow Sage, Western Wheatgrass, Canada Wild Rye and others. Over 60 species of forbes, including many brightly colored wildflowers are present in native prairie areas. Coteau native prairies and wetlands support a diverse array of plant and animal species, especially migratory birds.

Wetlands in the project area are primarily classified as palustrine emergent and palustrine aquatic bed wetlands and exhibit temporary, seasonal and semi-permanent water regimes, along with lacustrine aquatic bed wetlands with permanent water regimes. A number of fens also occur in the CLPP area and are classified as palustrine emergent saturated wetlands. Wetland complexes of the area are the most productive waterfowl breeding habitat remaining in the contiguous United States.

Habitats within the core area of the project are used by 226 species of migratory birds, of which 117 breed in the area. Twenty six species of waterfowl have been documented in the CLPP area. Endangered species which migrate through the area include Bald Eagles, Peregrine Falcons and Whooping Cranes. Piping Plovers listed as threatened, breed in several areas, including the Chase Lake National Wildlife Refuge. Ringnecked Pheasants, Gray Partridge, Sharp-tailed Grouse, White-tailed Deer and numerous furbearers are common resident species providing high quality recreation value.

The CLPP is a multi-year project, initiated in 1989 and planned for specific enhancements through the year 2001 under the North American Waterfowl Management Plan (NAWMP) and the Prairie Pothole Joint Venture (PPJV). The CLPP and wetland conservation programs will continue indefinitely as a major wetland conservation and waterfowl and wildlife production project in the highest quality wetland and waterfowl production habitat area in North Dakota.

A comprehensive Plan of Action developed for the CLPP in May 1989 establishes 38 action items that will be accomplished in the first five years at an initially estimated total cost of 22.1 million. These costs will be shared by those Federal, State, private organizations, and individual partners dedicated to the objectives of this plan. Thirty-eight Action Items have been developed that will enhance wildlife on public and private land, provide landowner incentives for sound soil and water management, and provide increased public awareness and recreation opportunities. Actions will be carried out by joint ventures or partnerships that include landowners, wildlife and agriculture agencies, private conservation groups, and private business.

Benefits of the project include a substantial contribution to waterfowl populations currently at near record low numbers; protection of soil, water, and plant resources; a safer, more esthetic environment for man and wildlife; and a better quality of life for farmers, ranchers, and the public at large.

The CLPP Plan of Action is based on a philosophy which recognizes the necessity of working cooperatively with private landowner and local communities. Reflecting the need to tailor this project to the specific needs and opportunities of the area, the CLPP is dedicated to combining "profitable agriculture and abundant wildlife". This motto symbolizes the cooperative partnerships that are sought among agricultural producers and wetland and wildlife conservation entities throughout the CLPP.

The CLPP utilizes a tiered approach to planning and implementation within its 5.5 million acre area. The CLPP is intended to be a stand alone wetland conservation project, but also functions as a major demonstration area for North Dakota, the PPJV and the NAWMP. Activities have initially focused on the centennial conservation area and the tiered implementation plan.

The goal of the CLPP is to restore, enhance and protect wetland ecosystems on both public and private lands to meet the waterfowl management objectives of the NAWMP and to demonstrate that profitable agriculture and abundant wildlife are compatible.

The major wetland and waterfowl habitat enhancement activities planned for the Chase Lake Prairie Project are:

- Restore, enhance and protect wetland ecosystems to increase the habitat base
- Increase habitat diversity on existing and future public and private lands
- Acquire or protect in perpetuity exemplary prairie wetland tracts and habitats supporting unique, rare, threatened or endangered species
- Increase non-waterfowl game and non-game species on public and private lands
- Protect in perpetuity sufficient habitat base as outlined in the FWS acquisition plan for counties in the project area
- Reintroduce extirpated prairie wildlife species such as the Prairie Chicken and Burrowing Owl
- Protect in perpetuity areas with unique prairie fauna and flora
- Promote public use by building interpretive kiosks and signs and by developing tours and hiking routes
- Enhance management of upland nesting habitat to increase recruitment rates for priority waterfowl species to achieve a proportionately appropriate contribution to population goals for those species.

Direct benefits of improved habitat on private lands include increased diversity of habitats and added potential for wildlife production in the area. An indirect benefit achieved through habitat improvement agreements with landowners is an improving attitude of farmers towards wildlife conservation, proper land use, and increased sense of stewardship. A sense of local pride and ownership of the CLPP is being generated. This change of attitude has lead to increased opportunities for perpetual habitat protection and even greater local participation in all natural conservation programs and practices.

In 1997 the PFW program developed 24 agreements with landowners in the area.

Wetland Projects

Type of Project	# of Landowners	Basins	Acres	Cost
Wetland Restoration	11	50	97.1	\$14,987
Wetland Creation	2	3	1.6	\$3,421
TOTAL	13	53	98.7	\$18,408



Before and after view of a wetland creation project on the Northwestern WPA. This is a typical project funded and completed in the Chase Lake Prairie Project with NAWCA funds.



One of the many hundreds of wetland restoration projects completed on private lands within the CLPP area. It is very satisfying adding water back to the landscape and witnessing the fruits of our labor.

Upland Projects

Type of Project	# of Landowners	Wet Acres	Upland Acres	Cost
Grazing System	7		2114.1	\$23,937
Grass Seeding	2		209	\$ 4,665
Adopt-A-Pothole	1	26.3	59.2	\$14,580
Prairie&Wetland Lease	1	23	129.6	\$27,270
Purchase of Two No-Till Drills				\$73,344
TOTAL	11	49.3	2,511.9	\$143,796



NAWCA grant funds were used to purchase no-till grass drills so landowners could use them to seed marginal croplands to grassland nesting cover in the CLPP area.

BSJ

The CLP II NAWCA grant was completed and CLP III was well under way. Below is a list of projects that were funded through the CLPII NAWCA grant.

NAWCA II

NAWCA Grant		= \$ 518,879
Fish & Wildlife Service		= \$ 214,554
North Dakota Game & Fish	= \$191,702	
Ducks Unlimited	= \$169,436	
Delta Waterfowl Foundation	= \$104,000	
Private Landowners	= \$ 31,304	
ND Department of Agriculture	= \$ 11,517	
Sheridan County SCD	= \$ 11,500	
Non-Federal Partners		= \$ 519,459
Totals		= \$1,252,892

Type of Project	Acres	Cost
Wetland Restoration	476	\$67,852
Wetland Creation	108.2	\$89,966
Grassland Easements	4,162	\$190,750
Grazing Systems	15,905	\$117,779
Upland, wetland lease	815	\$193,282
State Waterbank	442	\$24,457
Grass Seeding	248	\$17,517
Cattail Control	522	\$15,934
Predator Exclosure	80	\$110,806
No-till Drills (1) Undercutter	7,700	\$51,094
Totals	30,458.2	\$879,437

In March, USDA came out with a new CRP sign up. This sign up (sign up 15) was to renew all old contracts expiring in 1995 through 1997 and any additional lands. Interest was very high and NRCS asked for Jacobs to help with the environmental benefit index. Jacobs spent 12 days in their office.

The winter of 96-97 was very tough on local wildlife. Bohn spent 650 hours feeding 4,500 deer on 25 different ranches.

Rotational Grazing Monitoring Study

In an effort to gain more knowledge about the wildlife benefits of rotational grazing systems, CLPP and the Northern Coteau Project (NCP) teamed up to implement a neotropical bird study in 1995. The study was designed by Dr. Robert K. Murphy, a biologist at Des Lacs NWR and was funded mainly by the Prairie Pothole Joint Venture (PPJV). This project was completed in 1997 by Natoma Schneider for her thesis at South Dakota State University.

In 1996 and 1997 the rotational grazing systems were paired with season-long grazing systems in Stutsman and Montrail counties. The objective was to determine if there was an effect on grassland passerines when pastures were changed from a season-long system to a rotational grazing system. Each rotational grazing systems and control (season-long) were designed with 12-14 points per grazing system. Each point consisted of a 100 m radius in which breeding birds were recorded. Point Counts were taken a half hour before sunrise to 8:00 A.M. in the months of May and June. An index based on behavioral cues was also used to help determine reproductive success in the months of July and August. Several different types of vegetation sampling were recorded throughout the months of June and July for habitat assessment.

Conclusions and Recommendations of Natoma Schneider's Rotational Grazing Monitoring Study

Although many authors believe several grassland species have negative responses to grazing, I found high relative abundance and reproductive success for most bird species using twice-over deferred rotational and season-long grazing regimes. However, 6 out of 10 grassland species had higher relative abundance on rotational grazing systems in both years. Overall relative abundance and species richness was also higher on rotational grazing systems in both years. However, 1997 showed the strongest associations with bird presence on rotational grazing systems. This makes sense when considering the strong relationships birds have with vegetation and precipitation (Zimmerman 1992). The combination of a late spring with low precipitation in 1997 may have caused the trends to be more noticeable during this year.

Habitat changes were also evident between the years and individual species seemed to be affected by these habitat changes. Forb cover and shrub density were higher on season-long grazing regimes in 1996. Only one grassland species, the clay-colored sparrow was positively associated with both of these vegetation variables. Clay-colored sparrows had a slightly higher relative abundance on season-long grazed pastures in 1996. Clay-colored sparrows also had strong associations with litter depth and vegetation density which were both found to be higher on rotational grazing systems both years but only litter depth was significantly different in 1997. This may have been why clay-colored sparrows had a slightly higher mean relative abundance on rotational grazing systems than season-long grazed pastures in 1997.

Five of the six grassland bird species (eastern kingbird, grasshopper sparrow, savannah sparrow, western meadowlark, and bobolink) had higher relative abundance means both years, all had positive associations with litter depth and vegetation density. Litter depth seemed to be a significant key to the presence of many grassland non-game birds. Litter depth was a predictive indicator in 8 of the 9 individual passerine models used to predict the presence of each grassland bird species. Eastern kingbird, bobolink, grasshopper sparrow, and savannah sparrow all indicate increasing litter depth and increases the prediction of these birds occurrence. Presence of chestnut-collared longspurs, Baird's sparrows, and Sprague's pipit was predicted with a decrease in litter depth. In all but two instances (Sprague's pipit and brown-headed cowbird) relative abundance trends matched with litter depth trends. Since average litter depth was higher on rotational grazing systems in both years, the average relative abundance of eastern kingbirds, bobolinks, grasshopper sparrows and savannah sparrows were also higher. Since average litter depth was lower on season-long grazed pastures, Baird's sparrows and chestnut-collared longspurs showed higher relative abundances on season-long grazed pastures. Sprague's pipits occurrence decreased when high amounts of bare ground were present. Rotational grazing systems had lower amounts of bare ground than season-long pastures in both 1996 and 1997. This could be the reason why Sprague's pipits mean relative abundance was higher on rotational grazing systems.

Although, I did not find significant differences in relative abundance for any individual grassland bird species between grazing regimes, I did find that litter depth was significantly different in 1997. This is important because of the close relationship which appears to exist between litter depth and many grassland passerines. When all grassland passerines detected were pooled together a positive association was found with litter depth. This could explain why overall grassland passerine relative abundance and species richness were significantly higher on rotational grazing systems in 1997. This may also be the reason why the negative grazing guild (bobolink, grasshopper sparrow, savannah sparrow, Baird's sparrow and western meadowlark) were significantly higher on rotational grazing systems in 1997 than on season-long grazed pastures.

Baird's sparrows did not appear to be grazing sensitive. In fact they preferred sites with less vegetative cover. Other studies have indicated positive associations with Baird's sparrows and litter depth, however, this study found the exact opposite. Almost everything previous studies have indicated about the Baird's sparrow was contrary to my findings. Although no explanation can be offered for this occurrence, it should be noted that Baird's sparrows were found on all grazing regimes, but high productivity was not recorded. This does not mean that reproductive success was not occurring on these sites, it simply indicates that it was not detected. This could be due to lack of observer skills, the fact that only half of the points were used in reproductive counts, or that high reproductive success among Baird's sparrows was limited on these areas.

Rotational grazing systems have a high amount of variation associated with them. The way in which rotational grazing systems are designed make it extremely difficult to keep variation low in habitat factors. Since cattle are rotated throughout the cells at different times of the year, several different types of vegetative structure exist. This may attract several

different types of grassland birds which require different vegetative structure. However, the variation remains so high it is difficult to measure statistically significant differences because the variations results in a high standard error. The lack of uniform structure of these systems, may allow many grassland birds the opportunity to breed in suitable habitat lacking in overgrazed pastures, but also makes them difficult to test.

Although, I found some relationships of grassland passerines with grazing regimes, I did not find a statistical difference for any passerine species. However, with an increase in sample size (more replicates), and less variation, some differences may have been found. What can be said about grassland passerines is that they do not appear to be harmed by converting season-long grazed pastures into deferred twice-over rotational grazing systems. Reproductive success of grassland passerines was shown to be equivalent on both grazing regimes and if negative effects occurred from nest trampling on rotational grazing systems, it may have been counteracted by cells left idle during parts of the breeding season. Rotational grazing systems may also be an alternative to leaving pasture idle in the effort to increase grassland passerines sensitive to grazing. For species which preferred season-long grazing systems, there will always be an abundance of overgrazed pastures or moderately grazed pastures available.

In conclusion, I recommend that prescribed deferred twice-over rotational grazing systems continue to be placed in native prairie on private land along the Missouri Coteau in North Dakota. Prescribed rotational grazing systems implemented in the Chase Lake and Northern Coteau PPJV project areas benefitted landowner livestock operations without negatively impacting grassland passerines.

North Dakota Game and Fish (NDGF)

Rick Bohn NDGF Private Land Technician spent most of the winter on deer depredation calls with about 5,000 deer in 40 farm yards destroying alfalfa bales. Bohn serviced short-stop feeding sites which used over \$20,000 worth of corn and large alfalfa/bales.

Rick recorded a total of 4 goose collars in 1997, this bumps his total record of sightings at 854 since 1991.

Bohn sent in two tree/shrub planting cost share agreements to the NDGFD, one for \$5,000 and one for \$12,000.

Bohn sent in two spring food plot agreements along with a habitat improvement project on three sections that would complement a landowners CRP bid.

Bohn also assisted Jacobs with the wetland accomplishments in the Partners For Wildlife section.

Farmbill

The FWS continues to play an active role in the administration of the 1985 Food Security Act and the 1990 Food, Agricultural, Conservation and Trade Act. The NRCS is required to consult with the FWS on many of the issues dealing with wetlands. In 1997, we saw an increase in consultations between the FWS and county NRCS District Conservationists compared to previous levels.

In 1997, district staff were involved in six minimal effect (ME) reviews in Stutsman County and four in Wells County. The reviews were for temporary ditches and pumping to alleviate high water along township and county roads and one involving basement flooding. Five of the cases required an easement permit.

Erickson turned in a potential Swampbuster violation to the NRCS involving a township digging a six-foot backhoe ditch. The ditch was approximately 200' within the road R-O-W, and involving two new culverts installed 3' below the bottom of the road ditch through two township roads to drain water from a 60 acre semi-permanent wetland. The work was to take 1.5' of water from a wetland damaging the road. Instead, the landowners felt the wetland was too large and they should be allowed to lower the water elevation permanently.

Jacobs sent out two certified letters to newly recorded FmHA tracts and delivered seed to the landowner of Stutsman 10c to seed 35 acres to dense nesting cover.

Richardson and Jim Clapper of the Stutsman County NRCS, reviewed a flooded township road. The adjacent landowner wanted to install a culvert to lower the water level to gain access to his cropland.

2. Other Economic Uses

Two Special Use Permits, #97-017 and #97-019 were issued to two different local apiaries for bee yards placed on WPA's in the district. A fee of 50 cents/hive was charged. A total of 156 hives were located on four tracts.

3. Items of Interest

4. Credits

Biological Technician, Ed Meendering compiled notes from our 1997 monthly activity reports to write this narrative.

Lisa Hirsch assisted by scanning prints, proof-reading and putting this narrative together.

The lack of time and many other priorities prevent us from doing a better job writing these narratives.

5. Halfway Lake National Wildlife Refuge

Halfway Lake National Wildlife Refuge is a 160-acre easement refuge located four miles south of Medina in Stutsman County, North Dakota. The Fish and Wildlife Service does not own any land or make any improvements on the refuge, but has an easement granting perpetual refuge rights. These rights include restrictions on access, hunting, and trapping. A semi-permanent wetland of approximately 100 acres is located on the refuge and is used extensively by migrating waterfowl in the spring and fall. The remainder of the refuge is native prairie.

No major problems have been encountered with the management of Halfway Lake. The boundary signs are checked once a year just prior to the waterfowl season.