FERGUS FALLS WETLAND MANAGEMENT DISTRICT

Fergus Falls, Minnesota

ANNUAL NARRATIVE REPORT

Calendar Year 1982

U.S. Department of the Interior
Fish and Wildlife Service
NATIONAL WILDLIFE REFUGE SYSTEM

9 7 2 10 6 8 1 5 3 4 11

1. Marvin Mansfield, Wetland Manager, GS-0485-12, EOD: 8-71, retired 9-17-82; Permanent Full-Time

2. Eric G. Dornfeld, Asst. Wetland Manager, GS-0485-11, EOD: 3-79, Permanent Full-Time

3. Kevin P. Kenow, Asst. Wetland Manager, GS-0485-7, EOD: 6-80, Permanent Full-Time

4. Willard E. Steffen, Refuge Officer, GS-0486-11, EOD: 5-78, Permanent Full-Time

5. Wendell W. Olson, Range Conservationist, GS-0454-11, EOD: 2-81, Permanent Full-Time

6. Charles R. Vukonich, Biological Technician, GS-0404-6, EOD: 4-74, Permanent Full-Time

7. Luther J. Melby, Maintenance Worker, WG-4749-7, EOD: 7-72, Permanent Full-Time

8. Pauline B. Wiziarde, Administrative Technician, GS-0303-5, EOD: 12-80, Seasonal Full-Time

9. George W. Heglund, Tractor Operator, WG-5705-5, EOD: 5-82, Temporary Full-Time

10. Barbara J. Hudak, Student Trainee (Biology), GS-0499-4, EOD: 4-82, Temporary Full-Time

11. Gordon Mostue, Green Thumb Employee, EOD: 4-82, Temporary Part-Time

Rollin Siegfried, Wetland Manager, GS-0485-12, EOD: 8-83, Permanent Full-Time

YCC Crew - Summer 1982

(left to right): Jeanette Jordahl, Todd Brogard, Martin Renner, Bonnie Streeter, Paul Bitzan and leader Scott Collins (Biological Technician, GS-0404-5, EOD: 6-82, Permanent Full-Time

Review and Approvals

Rollin Siegfried
Submitted By

17 Feb. 1983
Date

Darrel Wallace
Division Supervisor, DWM

2-18-83
Date

Harold W Benson
Regional Office Review

2/28/83
Date

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A. HIGHLIGHTS

Ninety-seven easements were acquired during Calendar Year 1982 as compared to 38 in 1981. Phase One of the station I&R Plan was completed in September 1982. Marv Mansfield, Manager here since August 1971, retired in September. He was replaced by Rollin Siegfried, Acquisition Supervisor from the Pierre South Dakota Area Office.

Two hundred forty acres of native prairie were combined for seed harvest. Yields of 20 pounds PLS per acre at a cost of less than $2 per pound PLS are anticipated. Seventy-eight wetland basins were restored or improved through the construction and repair of ditch plugs, installation of water control structures or the breaking of tile drainage lines. Six hundred twelve acres of upland were permanently seeded with locally-harvested native grasses. Native grass test plots were established on OT-101 in cooperation with the SCS. Thirty-three varieties of warm season native grasses with three replications of each were seeded.

Calendar Year 1982 ended with 23 unresolved easement violation cases. No cases have gone to court within the last 15 months. Duck breeding pair counts were down from 1980 and 1981. Canada geese pairs increased by 52 percent. For the second year, station staff and citizen volunteers put together a Young Waterfowlers Program.

There was a special 5-day goose hunt within the 155 square mile Fergus Falls Goose Refuge. The 2,000 bird harvest objective was met.

Design problems still plague the shop/maintenance building now beginning its third year of operation.

Wendell Olson, Range Conservationist, received a monetary award for developing and refining a procedure for the harvest of native grass seed. Assistant Wetland Manager Kevin Kenow was recognized with a monetary award for his outstanding performance in marsh restoration. At the end of the calendar year, Assistant Wetland Manager Kenow departed for the University of Wisconsin to pursue a Masters Degree in wetland ecology. Assistant Manager Rick Dornfeld received a monetary award for the development of a Young Waterfowlers training program.

B. CLIMATIC CONDITIONS

The beginning of CY 82 was one of extremes. The months of January and February were very cold. On one occasion, the temperature reached a minus 40°F with a wind chill factor of -100°F on the same day. The amount of snow on the ground created a good potential for spring runoff.

Above normal precipitation occurred through the spring and early summer even though temperatures were below normal.

The fall months were wet leaving marshes in excellent conditions for next year's runoff and waterfowl utilization.

	Precipitation				Temperature			
					F.F.		Alex.	
	Fergus Falls	Avg.	Alexandria	Avg.	HI	LO	HI	LO
Jan.	.54	.77	2.21	1.54	38	-30	31	-29
Feb.	.51	.60	.30	.62	42	-40	39	-27
Mar.	1.10	1.12	2.46	1.06	45	-13	47	- 9
Apr.	.61	2.60	2.82	2.47	77	7	76	10
May	2.69	2.39	2.85	3.00	82	31	84	31
Jun.	2.40	4.68	3.01	4.01	84	38	86	42
Jul.	2.86	3.32	4.54	3.18	91	55	93	54
Aug.	4.10	3.05	2.51	3.53	95	41	94	43
Sep.	2.08	2.24	2.44	2.24	82	34	85	38
Oct.	3.95	1.42	2.91	1.64	65	25	68	25
Nov.	.48	.87	1.37	1.02	54	- 4	58	2
Dec.	.26	.90	.58	.71	54	- 4	55	- 1
	21.58	23.95	28.00	25.02	67	11	68	15

C. LAND ACQUISITION

1. Fee Title

Status of fee acquisition as of December 31, 1982*:

County	No. of Tracts	No. of Mgmt. Units	Wetland Acres	Upland Acres	Total Acres
Douglas	100	51	2,878	4,699	7,577
Grant	124	51	3,243	4,740	7,983
Otter Tail	206	100	5,724	10,705	16,436
Wilkin	13	6	413	841	1,247
Total	443	208	12,258	20,985	33,243

*Figures from Realty status records.

A total of two tracts were acquired during CY 82. One tract involved a trade with a net gain of 14 acres. The other involved the acquisition of railroad right-of-way through an existing WPA. The decreased emphasis on fee caused the shift to easements which complimented existing WPA's and protected many more wetland acres than fee purchase.

2. Easements

Status of easement acquisition as of December 31, 1982*:

County	No. of Easements	Wetland Acres	Total Wetland Acres
Douglas	5	84	2,909
Grant	44	696	3,361
Otter Tail	47	954	5,822
Wilkin	1	6	413
Total	97	1,740	12,505

*Figures from Realty status records.

Ninety-seven (97) easements were acquired during CY 82 as compared to 38 in 1981. This dramatic increase was due to increased effort in Grant County in conjunction with Mid-Continent mallard study and reduced funding placing greater efforts on wetland protection by easement.

D. PLANNING

1. Master Plan

A resource inventory was completed on each Wilkin County WPA. Individual Development Plans were completed on seven Otter Tail County Waterfowl Production Areas. The total for 4 years of planning is 87 Plans, 23,186 acres, 70 percent complete.

Development Plans completed during Calendar Year 1982 are listed below:

WPA	No. Acres	Date Drafted
Zuehlsdorff, OT-97	83	Nov. 23, 1982
Wasvick, OT-76	93	Nov. 23, 1982
Wirth, OT-59	348	Nov. 30, 1982
Swenson, OT-34	150	Dec. 1, 1982
Nelson, OT-89	160	Dec. 2, 1982
Tweeton, OT-29	262	Dec. 7, 1982
Lightning Lake, OT-47	99	Dec. 14, 1982

2. Management Plan

Annual amendments to the Water Management Plan were written on 18 impoundments totalling 513 acres.

Phase I of the Station I&R Plan was completed in September 1982. Annual amendments were also completed for the Prescribed Burning Plan.

E. ADMINISTRATION

1. Personnel

The only change in permanent personnel during FY 82 was the retirement of E. Marvin Mansfield, Wetland Manager of the Fergus Falls WMD. Marvin had been the Wetland Manager since August 1971. He will be missed because of the knowledge and understanding of the wetland district. Fortunately, he retired within the Fergus Falls community and will be easily accessed by telephone or personal visit.

His replacement was Rollin Siegfried, Acquisition Supervisor from the Pierre (S.D.) Area Office. Rollin was familiar with the wetland program before by being the Wetland Manager of the Detroit Lakes WMD which is another district within the Region 3 Wetland Complex. He arrived several weeks prior to Marvin's retirement, making for a smooth transition.

The number of people working at this station for the past five fiscal years is shown in the following table:

	Permanent		Temporary
	Full-Time	Part-time	
FY 1982	8		3
FY 1981	8		4
FY 1980	9		6
FY 1979	8		5
FY 1978	7		4

FEE ACRES, MANAGEMENT UNITS, STAFF-DAYS AND DOLLARS

Fiscal Year	Total Fee Acres	No. Mgt. Units	Permanent Staff-Days	Temp Staff-Days	YACC/YCC Staff-Days	Dollars
1978	30,400	202	1,530	420	812	$275,300
1979	31,720	204	1,971	824	962	543,800
1980	33,112	209	2,071	623	243	585,500
1981	33,222	208*	2,039	415	23	333,000
1982	33,297	208	1,690	217	220	327,800

*Decline due to Todd County transfer to Litchfield WMD.

2. Funding

A small decrease in total dollars was realized in FY 82 from FY 81, but with increases in salaries and inflation, this reduction becomes substantial.

The District's highest priority still remains to establish native grass cover and marsh restoration. It would appear other projects will have to be curtailed to allow funds to complete these high priority items.

The following table shows station funds for the last five years:

WORK CODE	FY 1978	FY 1979	FY 1980	FY 1981	FY 1982
1210	$142,000	$190,000	$225,000	$281,000	$300,000
1220	3,000	3,900	2,000	5,000	10,000
1240	7,000	10,000	12,000	15,000	11,000
3110	6,000	6,000	10,000	10,000	6,800
BLHP 2821	102,700	333,900	336,500	22,000*	
BLHP 1210	14,600				
Totals	$275,300	$543,800	$585,500	$333,000	$327,800

*Could only be used for fencing.

3. Safety

Two accidents, one to a government vehicle and one personal injury, were experienced in the WMD this past year.

One staff member sustained a sprain to his back while working on the placement of a water control structure. After a visit to a chiropractor and doctor, the employee rested for three days before returning to work.

On December 20, 1982, while a government vehicle was parked in the public parking lot at the Otter Tail County Courthouse, the right rear tail light and quarter panel were damaged by a passing vehicle. The $120 bill was paid by the driver-at-fault's insurance company.

4. Technical Assistance

A large amount of staff time was invested in providing advice and recommendations to other organizations. In 1982, the staff provided technical assistance to the Otter Tail County Highway Department on the upgrading of 3.4 miles of CSAH 1 from the junction of CSAH 18 to the junction of CSAH 10. In addition, the staff provided direct assistance to private conservation organizations on projects such as wetland restoration, a blue-bird nest box program, winter feeding of wildlife, wood duck nest box program and skunk trapping. Several Douglas County sportsmen's clubs paid for the cost of equipment rental for wetland restoration work on WPA's D-24, D-40 and D-21.

F. HABITAT MANAGEMENT

1. General

Height density measurements on grasslands, the indicator of nesting cover quality, were not conducted in 1982 due to conflicts with higher priority work.

In 1981, methodology was developed for monitoring vegetation development in wetland basins. The purpose for the methodology was to provide feedback evaluation on water level management strategies. Water control structures of varying

types were operational in the Fergus Falls WMD on 18 basins by the end of Calendar Year 1982. Eight of these basins were selected for sampling. These wetlands are on the following WPA's: Rossow, Ten Mile, Mortenson, Mickelson, Blakesley, Julsrud No. 1, Julsrud No. 2 and Backstrom. Major vegetation types on each basin were mapped annually from projections of 35 mm color positive slides photographed from altitudes of 1,500 to 3,000 feet. Three permanent markers, highly visible from the air, were established on each wetland basin. These markers served as reference points when tracing vegetation types from projected slides. Three permanent transects were established on each basin. Transects began at a point above the full pool elevation and ran in a direction toward the center of the basin. Sampling of aquatic vegetation was conducted during August and September. While documentation of water chemistry, vegetation development, invertebrate populations and wildlife use are desirable for proper evaluation of water management schemes, there are practical limitations on the effort put forth on such an assessment. Vegetation development was judged to be the single-most important component that could be measured to provide an index of marsh productivity.

In 1981, 146 sampling points were examined along transects on six of the eight wetland basins (Mortenson and Backstrom basins remained dry during 1981). In 1982, a total of 212 points were sampled on the eight wetlands.

Following is a summary of observations:

Rossow

The Rossow basin presently has the best ratio of emergent vegetation to open water of the basins under study (64%:36%). Interspersion is good on the eastern one-half of the marsh. There was no notable difference in cattail coverage neither from aerial photo interpretation nor from transect data between 1981 and 1982. There was evidence of cattail loss to flotation on the east end of the marsh however. An increase in frequency of occurrence of duckweeds was noted in 1982. Greater bladderwort occurred in the same number of plots both years but the average coverage of the species per plot decreased by more than one-half. Bladderwort may have not been able to tolerate the increase in water levels during 1982. Coontail increased both in frequency of occurrence and average coverage.

Recommended is that water levels be held slightly below 1982 levels, i.e., 96.0 to promote continued break up of cattail stand in the east half of the marsh, yet remain shallow enough for submergents to flourish.

Ten Mile

Cattail mowing in the winter of 1980-81 was instrumental in altering the emergent vegetation structure of the marsh from a basin virtually one solid stand of cattail (99 percent coverage) in 1980 to a condition now where the emergent vegetation to open water ratio is 66%:34%. There was a 62 percent decrease in the coverage of cattail in plots examined in both 1981 and

1982. The basin is virtually devoid of submerged aquatic vegetation. Duckweed increased in frequency of occurrence in 1982; however, average coverage of both species dipped substantially. This may be attributed to higher water levels in 1982 and/or reflect a decrease in the concentration of nutrients in the water. Kadlec (1962) concluded a high level of nutrients is essential for continued duckweed development. Aside from duckweed, only an occasional greater bladderwort plant was found in open water areas.

It is recommended water levels be held lower (98.5) during 1983. Openings are obviously too deep (approach 36" in depth in many areas) to encourage submerged aquatics growth. The emergent vegetation to open water ratio is approaching the optimum 50:50 and good interspersion now exists.

Mortenson

An excellent response of lesser duckweed occurred during the first year of flooding on the Mortenson marsh. The basin was dominated by reed canary-grass in 1981; in 1982 the stand was completely inundated.

Recommendation is to continue holding water at maximum levels.

Mickelson

Analysis of aerial photos indicates a slight decrease in the emergent vegetation to open water ratio (1981--87%:13%; 1982--83%:17%) on the Mickelson marsh. The frequency of occurrence of cattail decreased in sample plots from 1981 to 1982 while the duckweeds and greater bladderwort increased in both frequency of occurrence and coverage.

Water level management in the near future should continue to stress reduction of cattail. Recommended is to hold water between 96.5 and 97.0 during 1983.

Blakesley

Mudflats exposed during summer 1981 were dominated by cattail in 1982. This is reflected in a 44 percent increase of cattail coverage in transect plots from 1981 to 1982. Lesser duckweed decreased in overall coverage while star duckweed increased significantly in average percent coverage. Frequency of occurrence of both species was similar during both years. Greater bladderwort exhibited little change while frequency of occurrence and coverage of coontail increased significantly in 1982. Scattered sago pondweed was noted in the Blakesley basin in 1982.

Recommended is to hold water level of the Blakesley marsh at near 86.5 in 1983. Interspersion of cattail is good. An 86.5 level should favor submerged aquatics growth by holding open water depths at 12 to 20 inches.

Julsrud (South)

The Julsrud (South) basin has the most diverse array of emergent hydrophytes and extensive development of submerged and floating aquatic species of the eight basins. It is the "oldest" of the eight basins, having been restored in 1975. It also appears subject to seasonal water level fluctuations. Apparently the basin is vulnerable to seepage throughout the growing season. Abundant runoff during 1982 maintained high water levels.

Water levels should be kept as high as possible (100.0) again in 1983. Flooded emergents should provide good brood cover. Coontail and sago pondweed should continue to flourish as in 1982 at this level.

Julsrud (North)

High water levels during 1982 inundated large areas of reed canarygrass. Both duckweeds appeared scattered throughout the basin. Large willows (Salix sp.) persist over much of the basin. Smaller willows showed signs of stress from high water levels. No submerged aquatics were noted.

It will be necessary to continue holding water at the full pool level (81.5) until willows are eliminated from the basin. Extensive open areas with water depths of less than 20 inches (formerly reed canarygrass flats) will be maintained at the 81.5 level and should provide suitable condition for submerged vegetation development.

Backstrom

The Backstrom basin has yet to hold water throughout the growing season. Consequently, the marsh is dominated by sedges, reed canarygrass, cattail, and common reedgrass (Phragmites communis).

Water levels during 1983 should be held at full pool (99.0) to reduce sedge and cattail coverage.

It is difficult to describe trends in vegetation development with 2 years' data. Sampling in subsequent years should produce a fairly accurate account of shifts in the abundance of major plant species. I recommend similar documentation be initiated on all WMD basins possessing water control capabilities.

The 1981 native prairie seed harvest with the Detroit Lakes WMD wasn't as successful as we believed at this time last year. After cleaning, weighing and testing, we found that we had 4,789 pounds PLS instead of the estimated 8,030 pounds PLS. Most of the error is attributed to an overestimation of the bulk weight. The Fergus Falls WMD share was 2,076 pounds PLS while the Detroit Lakes WMD got the remaining 2,713 pounds PLS.

1981 Native Prairie Harvest
Fergus Falls and Detroit Lakes WMD

Total bulk pounds cleaned - 9,691

Species	Purity (%)	Germination (%)	Dormant (%)	PLS	Pounds PLS
Big bluestem	56.30	60	6	37.16	3,601
Indiangrass	10.72	70	25	10.18	987
Little bluestem	3.45	60	0	2.07	201
Totals	70.47			49.41	4,789
Other crop	3.99				387*
Weeds	1.72				167*
Inert	23.82				2,308*

*Bulk weight

Yield/acre - 6.84 pounds PLS
Approx. cost/pound PLS - $3.10

In 1982 we again harvested our switchgrass plots on Mavis WPA (OT-98). The NDG-965-98 was straight combined on August 25, 1982. The seed has been cleaned commercially but germination tests haven't been completed.

1982 NDG-965-98 switchgrass harvested:

bulk pounds uncleaned:		2,640
bulk pounds cleaned -	Lot A:	1,608
	Lot B:	360

Acres: 15

The Nature Conservancy's Otter Tail Prairie. To left of mowed firebreak was burned June 1, 1982. To right has had non-use for at least 3 years. 9/25/82 WO

Combining a native prairie mix on The Nature Conservancy's Otter Tail Prairie.

9/25/82 WO

The SD-149 (Forestburg) switchgrass was straight combined on September 25 and donated to the Morris WMD. This ecotype, in the opinion of the Range Conservationist, is too rank and flowers too late to plant with our native prairie mix. In any natural stand, switchgrass will flower before the bluestems and the NDG-965-98 will do just that. One thousand seven hundred eight bulk pounds uncleaned of SDG-149 were obtained from 15 acres.

On September 16 and 20, we harvested 115 acres of native prairie on the Minnesota DNR's Rothsay WMA in Wilkin County. We obtained approximately 3,500 pounds uncleaned dry bulk. Twenty percent of this seed belongs to the DNR on a share basis for harvesting on their land.

On September 20, 25 and 27, we harvested 125 acres on The Nature Conservancy's Otter Tail Prairie and obtained approximately 5,300 pounds uncleaned dry bulk. This will be our best yield to date.

The seed will be cleaned on the scalper set up by the Complex at Tamarac NWR. Yields close to 20 pounds PLS/acre at a cost of less than $2/pound PLS are anticipated.

2. Wetlands

An estimated 220 wetland basins on fee title lands in the Fergus Falls WMD remain impacted by open drainage ditches or functioning tile lines. Restoration of wetland basins on District WPA's is one of the most crucial programs implemented to enhance waterfowl production--the primary objective of the WMD. During the 1982 field season, 78 basins were restored or their potential for wildlife production improved through the construction and repair of ditch plugs, installation of water control structures, or breaking of tile lines (see Section I-1).

Water control structures of varying types were operational on 15 WMD basins totaling 454 acres in Spring 1982. Water level management of basins possessing water control capabilities in the Fergus Falls WMD is directed at enhancing marsh productivity with emphasis on providing optimum brood rearing habitat and conditions attractive to waterfowl breeding pairs. The following strategy has been adopted:

1. If necessary, destroy woody vegetation by holding water at maximum levels, then 2,

2. Achieve 50:50 ratio of emergent vegetation to open water in a highly interspersed pattern, then 3,

3. Maintain stable water level at depths which promote maximum production of invertebrate-rich submerged aquatics, then 4,

4. Upon deterioration of favored submerged and emergent stands, drawdown pool completely to revitalize system.

The following table summarizes proposed and achieved water levels during the 1982 growing season. Abundant precipitation throughout the growing season allowed water levels to be held at or near desired levels (see Section B, Climatic Conditions).

Basin	1982 Water Management Objective	Objective Met	Maximum Water Level Achieved (Date Recorded)	Contour Survey Completed
Julsrud #1	Full pool - 83.0	No	81.5 (5/6)	1980
Julsrud #2	Full pool - 100.0	Yes	100.0 (4/12;5/6)	
Blakesley	Full pool - 87.5	Yes	87.3 (5/12)	prior to 1974
Backstrom	Full pool - 98.5	No	95.0	1980
Mickelson	97.0	Yes	97.0 (4/20;5/12)	
Rossow	Drawdown to 94.5	No	97.6 (3/15)	1982
Mortenson	Full pool - 100.0	No	99.0 (3/31)	1982
Ten Mile	Near full pool - 99.5	Yes	99.5 (3/14)	
Stowe Lake #6	99.5	Yes	100 (5/1)	
Stowe Lake #7	Full pool - 1341.5	Yes	1341.5 (5/5)	
Stowe Lake #8	Full pool -1341.25	Yes	1341.25 (5/5)	
Orange	Full pool - 100.0	Yes	99.3 (7/1)	
Runestone	Full pool - 81.0	Yes	81.0 (5/1)	
Nordby	Full pool - 100.0	No	98.3 (6/11)	1982
Delong	Full pool - 100.0	No	94.0 (3/10)	
Zickur	Installed Fall 1982			
Staff	Installed Fall 1982			
Langos	Installed Fall 1982			

3. Forests

Management recommendations were developed for 11.3 acres of conifer plantations on the Hudson WPA, Douglas County, by the Alexandria District Forester, Minnesota DNR. The plantation was machine-planted in 1962 and 1963, prior to FWS acquisition. YCC began thinning the stand this past summer. Thinning of the entire plantation is to be done within the next 5 years according to the recommendations. It is suggested white spruce (Picea glauca) be row thinned while red pine (Pinus resinosa) and scotch pine (Pinus sylvestris) be selectively thinned as determined by the District Forester. While the plantation provides no value to waterfowl, other wildlife values and public sentiment towards the trees must be heeded.

Minnesota DNR cultivated and maintained shelterbelts on five Douglas County WPA's: D-32, D-51, D-10, D-31 and D-57. A Special Use Permit was issued for the removal of six elm trees that had succumbed to Dutch Elm Disease on the Covel WPA, D-9.

4. Croplands

A. Food Plots

The WMD has a total of 34 corn food plots on WPA's. The plots are maintained in three different ways: 1) A cooperative share basis of one-third for the WMD and two-thirds for the cooperator; 2) volunteer by private individuals, and 3) established and maintained by sportsmen's clubs under direction of the WMD.

To supplement our mammal and non-migratory bird food plot program, large round bales of wildlife food were placed on WPA's. The Fergus Falls Fish and Game Club and the Otter Chapter of the Izaak Walton League, in cooperation with the FWS, placed 30 millet bales, 17 corn bales and 10 buckwheat bales in the Fergus Falls area.

As a cooperative effort with local sportsmen's groups and a local Izaak Walton League Chapter, 17 large round bales were placed on selected WPA's for overwintering wildlife. 11/82 CV

Large round bales weighed about 1,500 pounds and will provide lots of good eating for pheasants, deer, squirrels, etc. 11/82 CV

Food Plots

County	Cooperative	Sportsmen's Club	Volunteer
Douglas	4	4	2
Otter Tail	8	5	2
Wilkin	1	-	-
Grant	6	2	-
	19	11	4

B. Cash Rent

One thousand four hundred sixty-two acres were farmed under the cash rent program in 1982. Approximately 1,100 acres of these will be rented out again for 1983. The program allows a permittee to crop the land for a fair market value rent and is designed to leave a weed-free seedbed suitable for no-till seeding native grasses. Soybeans that have been treated with Treflan for annual grass control and with Basagran for thistles appears to provide the best seedbed.

New contracts are written for a 3-year period. The first year is usually oats on spring plowing. The oat stubble isn't tilled following harvest and the permittee is responsible for fall application of Roundup at 1 qt./ acre in 10 gallons water. This is primarily for quackgrass and Canada thistle control. Year two is either corn or soybeans. The last year is soybeans with Treflan and Basagran application.

Twenty-two thousand seven hundred sixty-seven dollars were added to the revenue sharing fund in 1982 because of our cash rent program. This brings the District total to $55,871 since 1979.

C. Other Farming

A total of 137 acres in Otter Tail and Grant Counties (G-28, G-15 and OT-25) are farmed under a cooperative farming agreement. The cooperators no-till seed winter rye or winter wheat into last summer's spring grain stubble. Mid-Continent Waterfowl Management Unit is using these acres to conduct waterfowl nesting studies in no-till farming situations. It is thought that a winter grain with last year's litter for an understory may be conducive to waterfowl nesting.

D. Native Grass Seedings

The District seeded 612 acres to warm season native grasses in 1982. Most of the areas had at least some locally harvested prairie mix. Approximately 190 acres were no-till seeded into last year's soybean stubble. Most seedbeds were summer fallowed or cropped in 1981, then fall disced and packed. The most successful 1982 seeding was on a soybean stubble that was essentially weed-free in 1981 (Green, G-8).

One week prior to seeding, Roundup was applied at the rate of 2 lbs. A.I. in 10 gallons water/acre. The reduced water rate was at least as effective as the old 20 gallon rate.

This modified 3-drill hook-up allows us to seed many acres of native grass in one day.

6/82 CV

Current year seedings were sprayed in August at the rate of ½ lb. A.I./acre of 2,4-D (LV-4). Older seedings were sprayed in May-June at 1 lb. A.I./ acre.

Stand of NDG-965-98 on Agassiz WPA (OT-60). Field was planted in late May 1982 and formed some hard seed by mid-September.

10/28/82 WO

Germination was generally poor on the 1982 seedings. This was most likely due to low soil temperatures. The average air temperature in June was only 59°F.

Most 1982 seedings had excessive amounts of pigeongrass (Setaria spp.) competition. Two hundred eighty-eight acres were mowed in August to give light to the seedlings. The one area that had the least pigeongrass (G-8) in 1982 had none in its 1981 Treflan-treated soybeans.

1982 Seeding List

Otter Tail County

WPA No.	Name	Acres	Seeding Date	Mix
101	Mavis	22	6/8	1
52	Busko	46	6/11	2
3	Aaberg	106	6/3,4	1*
49	Sethre	14	6/4	1*
10	Agassiz	17	5/27	3
81	PCA	66	6/7,8,9	2
27	Blacken Lake	25	6/10	2
83	Headquarters	2	6/20	4
		298		

*Seeded too light at 80 percent of rate listed on Mix #1

Grant County

WPA No.	Name	Acres	Seeding Date	Mix
31	Historical Soc.	77	6/15	1**
51	Frikken	46	6/10	1
10	Mud Lake	28	6/13,14	2
29	Strand	39	6/16,18	4
8	Green	24	6/15,16	2
37	Nordby	4	6/16	2
28	Bah Lakes	5	6/20	4
		223		

Douglas County

5	Rachel	55	6/12,14	1
15	Hedlof	1	6/14	1
43	Grandokken-Sav.	35	6/11	1
		91		

GRAND TOTAL 612

Mix #1 - Locally harvested prairie mix with added switchgrass

	lbs. PLS/Acre	Seeds/Ft^2	Lbs. Bulk
Big Bluestem	4.35	16.5	
Indiangrass	1.19	4.8	
Little Bluestem	.24	1.4	
Other crop			.47
Switchgrass NDG-965-98 w/trace of Killdeer sideoats	.75	6.7	
Total	6.53	29.4	

Mix #2 - Locally harvested prairie mix with Holt Indiangrass, Butte sideoats, and SD-149 switchgrass

	lbs. PLS/acre	Seeds/Ft^2
Big Bluestem	1.0	3.8
Little Bluestem	.05	.3
Indiangrass (local)	.3	1.1
Indiangrass (Holt)	3.3	13.2
Sideoats grama (Butte)	.4	2.2
Switchgrass (S-149) (Forestburg)	1.25	11.1
Total	6.3	31.7

Mix #3

	lbs. PLS/Acre	Seeds/Ft^2
Switchgrass (NDG-965-98)	5.0	44.0

Mix #4

	lbs. PLS/Acre	Seeds/Ft^2
Switchgrass (SD-149) (Forestburg)	5.0	44.5

*Seeded too light at 80 percent of rate listed on Mix #1

**Middle approximately 25 acres of resource inventory #47 seeded with SD-149, Forestburg switchgrass instead of the NDG-965-98 with trace of Killdeer sideoats grama.

Inspections of all past native seedings were completed this fall; 1978-1980 seedings were given an ocular estimate of canopy coverage by species. Seedling counts were made on 1981 and 1982 seedings. Neither method should be considered statistically sound. Photo points were established on all seedings. These inspections will be used for development planning and future management prescriptions.

E. Other

Native grass test plots were established on Knollwood WPA (OT-101) in cooperation with the Soil Conservation Service. Thirty-three varieties of warm season natives with three replications of each were seeded on June 3 and 4. All but two varieties were developed by SCS Plant Material Centers and have origins ranging from Oklahoma to North Dakota. Species represented are Big Bluestem (8 varieties), Sand Bluestem (2 varieties), Indiangrass (5 varieties), prairie sandreed (2 varieties), switchgrass (8 varieties), little bluestem (4 varieties) and sideoats grama (4 varieties). Identical test plots were established near Upham, North Dakota, on the J. Clark Salyer NWR.

FWS personnel took seedling height measurements in July. The theory is that southern origin seedlings are more vigorous in the early part of the establishment year. From looking at the raw data, this appears to be the case, at least in switchgrass. The data is currently undergoing computer analysis at Concordia College, Moorhead, Minnesota.

Rows of local origin big bluestem (Polk Co., MN) on SCS test plots on Knollwood WPA (OT-101).

7/21/82 WO

Dr. Gerald Van Amberg, Biology Department, Concordia College, received a small grant from The Nature Conservancy to examine the test plots here and at J. Clark Salyer for non-structural carbohydrate root reserves at the time of fall freeze-up. Preliminary data from J. Clark Salyer shows that root reserves on some species for Nebraska and Kansas origin varieties are about half those of South and North Dakota origin varieties. This may be a possible explanation for greater winterkill for southern origin varieties at this latitude.

Samplings for 1983 will depend a great deal on available manpower and time. We at least will make estimations of winterkill. Height measurements will be taken in mid-June. At such time the northern origin material should be of a greater height since its phenology is geared to a shorter growing season.

Flowering times for each plot will be recorded by FWS personnel. A 60-day range among varieties on some species is expected.

Dr. Van Amburg will again collect root material after freeze-up for analysis.

5. Grassland

Native seed harvest is reported in Section F-1. Farming and seeding operations are reported in Section F-4. Haying, fire management and pest control are reported in the appropriate sections.

8. Haying

One hundred forty-three acres were hayed in 1982. Forty of those acres were hayed primarily for thistle control. Haiby WPA (OT-20) was hayed in early July to remove quackgrass competition on a native seeding. Most warm season natives responded well. Rush Lake WPA (OT-56) was hayed in early August primarily for litter removal on an extremely dense native seeding. Regrowth of up to 2 feet occurred by October 15.

1982 Haying

Unit Name	WPA #	Acres	Cover Type	Approx. Haying Date
Haiby	OT-20	40	Nebraska natives w/quackgrass	7/5
Knobel Lake	OT-90	10	Alfalfa-brome-quack	7/10
Duenow	OT-86	20	Alfalfa-brome-quack	7/10
Rush Lake	OT-56	63	Nebraska natives, mostly switchgrass	8/1
Morrison	OT-21	10	Nebraska natives w/thistle	7/15
		143		

9. Fire Management

Prescribed burning totaled 941.5 acres for 1982. No burning was done by local fire departments, largely because we couldn't offer payment.

Otter Tail Prairie (The Nature Conservancy) and Rothsay Wildlife Management Area (Minnesota Department of Natural Resources) are native prairie areas that were burned by FWS with the understanding that we would be able to harvest seed. The areas responded well with the later burned Otter Tail Prairie producing the most seed.

The burn on Mavis WPA (OT-98) is our harvest area for NDG-965-98 switchgrass. Seed production was only fair because of poor soils and the site remains infested with pigeongrass (Setaria viridis (L.) Beauv.).

The 206.5 acres burned in Grant County were all 1981 seedings listed as in poor condition. The warm season grasses responded quite well on Preuss (G-19) and Foss (G-22) WPA's, but Brenden WPA (G-42) remains in poor condition.

The Douglas County burns were conducted primarily for enhancement of prairie vegetation. Grandokken-Savanna (D-43) responded beautifully, but almost no native prairie species remain on the Stowe Lake WPA (D-6) burn area.

No wildfires occurred on WPA's in 1982.

1982 Prescribed Burns

	Unit Name	Unit #	Burn Date	Acres
Otter Tail County	Mavis	98	5/19	22
	Otter Tail Prairie	(TNC)	6/1	160
				182
Grant County	Brenden	42	5/25	11
	Preuss	19	5/25	104
	Foss	22	5/25	91.5
				206.5
Douglas County	Grandokken-Sav.	43	4/28	198
	Stowe Lake	6	4/27	35
				233
Wilkin County	Rothsay WMA	(DNR)	5/20	320
			TOTAL	941.5

10. Pest Control

Herbicide application began with the aerial Atrazine contract in April. The application rate of 2 lbs. A.I./acre did very little damage to quackgrass and pigeongrass (Setaria spp.) and eliminated possibilities of haying because of label requirements. Atrazine application for 1983 will, therefore, be reduced to a few acres intended for switchgrass seed harvest.

The force account weed control program began May 8 with Tordon pellets being applied to leafy spurge at the rate of 2-3 lbs. A.I./acre.

Force account and aerial contract 2,4-D (LV-4) spraying at 1 lb. A.I./acre began the last week of May. The aerial contract gave us a great deal of trouble. Thirteen complaints of spray drift damage were received from private landowners and all of the acres on contract required much "touch up" by force account. Payment of the contract was held up until the drift complaints were satisfied.

Roundup application at 2 lbs. A.I. in 10 gallons water/acre began the first week of June. Most of the Roundup was custom applied. The 10 gallon water rate is new for 1982. The previously recommended rate of 20 gallons was more costly and was no more effective than the new rate.

Eighty-eight acres of thistle complaint areas were mowed force account after it was too late to spray. An additional 40 acres of these areas were hayed by local farmers.

One hundred ninety-three acres of 1981 seedings were mowed force account in early June to reduce quackgrass competition. Forty additional quackgrass infested acres were hayed for the same purpose.

Most spraying of 2,4-D (LV-4) at ½ lbs. A.I./acre on 1982 seedings occurred in August. Most of the spraying was done aerially, but 116 acres were done force account.

Pigeongrass (Setaria spp.) competition on our 1982 seedings was excessive and, therefore, 288 acres were mowed force account in August.

Force Account Weed Control Summary

2,4-D Ground at 1 lb. A.I./acre. Spot treatment on problem areas and respray of seedings after poor response from aerial application.

County	Acres
Douglas	315
Grant	240
Otter Tail	464
Wilkin	-
	1,019

2,4-D Ground at ½ lb. A.I./acre. 1982 seedings - July-August

WPA #	Name	Acres
OT-101	Mavis	22
OT-3	Aaberg	50
OT-49	Sethre	14
OT-27	Blacken Lake	25
G-37	Nordby	4
D-15	Hedlof	1
		116

Spurge control - 2-3 lb. A.I. Tordon. Spot treatment on problem areas

County	Acres with Pellets	Acres with 212
Douglas	1.2	2.0
Grant	.5	2.4
Otter Tail	1.7	.7
Wilkin	-	-
	3.4	5.1

Roundup - 2 lbs. A.I. in 10 gallons water/acre - 1982 seedings

WPA #	Name	Acres
OT-81	PCA	66
OT-101	Mavis	22
OT-49	Sethre	14
		102

Mowing thistles - complaint areas

County	Acres
Douglas	31
Grant	-
Otter Tail	88
Wilkin	-
	119

Mowing 1981 seedings to reduce quackgrass and enhance native grasses - early July

WPA #	Name	Acres
OT-51	Kube	46
OT-76	Wasvick	28
OT-11	C&M Ranch	94
OT-98	Mavis	25
		193

Mowing 1982 seedings to reduce pigeongrass (Setaria spp.) and enhance native grasses - August

WPA #	Name	Acres
OT-101	Mavis	22
OT-3	Aaberg	50
OT-49	Sethre	14
OT-27	Blacken Lake	25
G-31	Hist. Soc.	77
G-51	Frikken	10
D-5	Rachel	55
D-43	Grand.-Sav.	35
		288

1982 Contract Spraying Summary

Ground Roundup at 2 lbs. A.I./acre in 10 gallons water on 1982 seedings (P.O.)

County	Acres	Cost
Douglas	107	$ 652.70
Grant	213	1,299.30
Otter Tail	202	1,013.10
	522	$2,965.10

Aerial 2,4-D at ½ lb. A.I./acre in July and August 1982 seedings (P.O.)

County	Acres	Cost
Douglas	93	$ 511.50
Grant	209	1,149.50
Otter Tail	109	617.50
	411	$2,278.50

Aerial 2,4-D at 1 lb. A.I./acre on past seedings and problem areas - May-June

County	Acres	Cost
Douglas	440	$ 2,420.00
Grant	380	2,090.00
Otter Tail	1,676	9,218.00
Wilkin	30	165.00
	2,526	$13,893.00

Aerial 2,4-D at 1 lb. A.I./acre on complaint problem areas - July (P.O.)

County	Acres	Cost
Grant	141	$ 987.00
Douglas	26	195.00
Otter Tail	50	350.00
	217	$1,532.00

Aerial Atrazine at 2 lb. A.I./acre on past seedings and 1982 switchgrass seedings - April-June

County	Acres	Cost
Otter Tail	617	$5,431.50
Grant	359	2,438.20
Douglas	79	577.50
	1055	$8,447.20

Contract applicators	Chemical	Approx. Cost
West Central Aerial Sprayers (P.O.)	2,4-D	$ 3,792.50
Lowell Ricks Aviation	Atrazine	8,447.20
Pankratz	2,4-D	13,893.00
Mid-Am Ag. Center (P.O.)	Roundup	1,952.00
Arland Anderson (P.O.)	Roundup	1,013.10
		$29,097.80

12. Wilderness and Special Areas

There are no special areas designated on WPA's in the Fergus Falls Wetland Management District. However, historic sites, which include Indian burial mounds, are found on Redhead Slough (G-28) and Pomme de Terre WPA (G-1), Grant County. In addition, remnant scars of the old Red River Valley Oxcart Trail which traversed this part of the country early in this century are still to be found on Setterlund and Larson WPA's in Grant and Douglas Counties.

13. WPA Easement Monitoring

Calendar Year 1982 ended with 23 unresolved easement cases. Nine cases were gained during the year, eight of which still remain to be confirmed as violations. The remaining 14 cases are all characterized by the fact that the easement holders feel the U.S. Government should not interfere with their use of the property. Most of these 14 cases appear to be headed for litgation. Five cases are presently with the Law Enforcement division or the Field Solicitor's Office for action. However, no cases from the entire Complex have gone to court within the past 15 months.

The following is a capsule status report for each violation of more than a passing interest:

Easement 51X, Douglas County--Easement holder declined to restore a large Type 4 wetland (20-25 acres)--submitted to Law Enforcement (LE) for prosecution 1/2/76--no action to date.

Easement 76X, Douglas County--Easement holder feels 1907 drainage agreement supersedes easement--submitted to LE 3/20/81. No action to date.

Easement 262X, Otter Tail County--Easement holder installed earthen filled travelways for irrigation equipment--declined to remove same--last December 1982 agreed to remove one or two and install experimental travelways made of wood--case first detected fall 1978.

Easement 273X, Otter Tail County--Easement holder has requested opinion concerning mining of peat in wetland--submitted to Solicitor 1/7/81. No action to date.

One of the more interesting cases to have been essentially resolved in the past few months is that of the installation of tile on Easement 108X, Douglas County. In this case, the landowner hired a contractor to install approximately $4,800 worth of drainage tile to drain three basins on the property covered by an Easement for Waterfowl Management Rights. When confronted, the subject agreed to remove 50-foot portions of the tile from the lip of the basin to facilitate restoration of the wetlands. More needs to be done to consider this case closed.

Inspection of the tax records in the respective county courthouses was again undertaken to verify the ownership of all easements in the District. Of a total of 475 easements, 39 were found to have changed owners during the past year. Each new owner was sent a letter informing them of the Easement for Waterfowl Management Rights on the property which they purchased. As the letter is sent certified, the procedure prevents violations by informing the new easement holder of the existence of the easement.

As in the past 2 to 3 years, vertical aerial black and white photographs were taken of approximately 25 percent of all the easements in the District, as well as all the new easements acquired District-wide. The photographs are used as basic before-the-fact documentation of wetlands on all new and old easements.

G. WILDLIFE

1. Wildlife Diversity

The WMD bird list contains 266 species of which 186 were observed by the refuge staff in 1982. No unusual sightings were made this year.

Small mammal transects have been established by the Mid-Continent Waterfowl Management Unit on two WPA's: Stowe Lake (D-6) and Bah Lakes (G-28). The following mammal species were found to be most common:

Artic shrew
Franklin ground squirrel
Meadow mole
Pocket gopher
Thirteen-line ground squirrel
Deer mouse
Masked shrew
Meadow jumping mouse
Short-tail shrew

Little blue herons are known to nest on Pelican Island located in Pelican Lake near Ashby, Minnesota, in Grant County.

2. Endangered and/or Threatened Species

There were not any sightings of the federally-endangered peregrine falcon in the District this year. In recent years, however, one or more casual observations are made of this bird in our WMD.

Two active bald eagle nests were reported by Minnesota Highway Department personnel in Hobart Township, Otter Tail County. Eagles are rather common during the early spring and late autumn migrations. We usually get several phone calls each year from the public who report eagle sightings.

The fringed prairie orchid (Habenaria leucophaea (Nutt.) Gray) is currently under review for federal threatened status. Some of these plants have been collected immediately north of our District, but the flowers have not been collected or observed in the WMD to date.

The greater prairie chicken (Tympanuchus cupido) is considered threatened in Minnesota. These birds are found in the District, especially Wilkin and Otter Tail Counties. Each year, in cooperation with the Minnesota Prairie Chicken Society (MPCS) and the State DNR, FWS personnel have assisted in the spring prairie chicken booming ground count. The birds have regularly been observed on or in close association with at leave five WPA's which include:

Horstman (OT-2)
Agassiz Beachline (OT-60)
Hanneman (W-7)
Brown (W-5)
Boldingh-Monson (W-4)

Greater Prairie Chickens are common to at least five WPA's. The springtime antics of "Old Muldoon" attract many birders to the District.

Following is the summary of the 1982 prairie chicken census in the WMD:

Location	Booming Males	Birds Flushed
Otter Tail County		
T. 133 N., R. 44 W., section 29; SE¼	12	--
Wilkin County		
T. 133 N., R. 45 W., section 12; SW¼	13	--
T. 133 N., R. 45 W., section 24; NE¼	2	--
T. 134 N., R. 45 W., section 8, SE¼	--	37
T. 134 N., R. 45 W., section 15; SW¼	8	--
T. 134 N., R. 45 W., section 17; NW¼	4	--
T. 134 N., R. 46 W., section 6, SW¼	14	--

The greater sandhill crane (Grus canadensis tabida) is also considered threatened in the State of Minnesota. Ground sightings are rare but migratory flocks are seen nearly every spring and fall migrations.

3. Waterfowl

The first noticeable movement of Canada geese, swans, scaup, goldeneyes and mallards came on April 2. The birds were riding a stiff southerly breeze ahead of a major storm system. A second larger movement occurred on April 15. Most wetlands were free of ice by April 16 and offered ample feed to migratory birds. Timely spring rains kept most wetlands in excellent condition for the duration of the breeding season.

Breeding pair data was collected on 21 randomly selected quarter sections between May 5 and May 13. Two thousand two hundred thirty-one acres were surveyed which represents about 6.7 percent of the total acreage in the District.

Ringneck at rest during spring migration.

Overall, our data showed that breeding pairs were down from 1980 and 1981. Canada geese increased by 52 percent. Due to a lack of manpower, we were unable to run surveys on four of our "better" quarter sections. The following tables show the 1982 breeding pair results and a comparison to 1979-1981 figures.

Table I

1982 QUARTER SECTION SURVEY SUMMARY
FERGUS FALLS WETLAND MANAGEMENT DISTRICT

SPECIES	TOTAL INDICATED PAIRS	PAIRS PER WETLAND ACRE	PAIRS PER WPA ACRE	PAIRS PER SQ. MI. WPA	DISTRICT PROJECTED ESTIMATED
Dabblers:					
Blue-winged teal	215	0.284	0.096	61.4	3,186
Mallard	37	0.049	0.016	10.2	529
Wood duck	9	0.012	0.004	2.6	135
Gadwall	7	0.009	0.003	1.9	99
Green-winged teal	6	0.008	0.003	1.9	99
Shoveler	5	0.007	0.002	1.3	67
Wigeon	3	0.004	0.001	.6	31
Pintail	2	0.003	0.0008	.5	26
Subtotal	284	0.376	.126	80.4	4,172
Divers:					
Ruddy	19	0.251	0.009	5.76	299
Redhead	10	0.013	0.004	2.6	135
Ringneck	8	0.011	0.003	1.9	99
Scaup	3	0.004	0.001	.6	31
Canvasback	1	0.001	0.0004	.26	13
Bufflehead	1	0.001	0.0004	.26	13
Subtotal	42	0.281	0.018	11.38	590
Grand Total	326	0.657	0.144	91.78	4,762
Canada Geese	20	0.026	0.009	5.76	299

Table II

RESULTS OF 1979, 1980, 1981 & 1982 QUARTER SECTION SURVEYS

	1979	1980	1981	1982	% 1981-1982
Dabblers:					
Blue-winged teal	46.3	55.8	99.4	61.4	-38
Mallard	15.8	14.6	18.9	10.2	-46
Gadwall	0.5	1.9	5.7	1.9	-66
Wood duck	3.2	1.7	4.3	2.6	-39
Pintail	2.4	3.2	2.9	.5	-82
Green-winged teal	0	3.4	2.9	1.9	-34
Northern shoveler	3.4	1.9	2.9	1.3	-55
American Wigeon	0.3	0.5	0.5	.6	+20
Subtotal	71.9	83.0	137.5	80.4	-42
Divers:					
Redhead	5.3	8.5	13.9	2.6	-81
Ring-necked duck	4.9	3.2	5.3	1.9	-64
Ruddy	2.4	7.3	2.2	5.8	+163
Lesser scaup	2.9	1.0	1.9	.6	-68
Canvasback	0.5	1.0	1.7	.26	-84
Subtotal	16.0	21.0	25.0	11.16	-54
Grand Total	87.9	104.0	162.5	91.56	-43
Canada Geese	2.9	2.2	3.8	5.76	+52

Other WPA's Surveyed 1982

Sogge WPA

Species	Breeding Pairs
Mallard	4
Blue-winged teal	20
Gadwall	1
Pintail	2
Green-winged teal	2
Shoveler	2
Wigeon	1
Black duck	1
Redhead	2
Total	35
Canada Goose	1

Rachel WPA

Species	Breeding Pairs
Mallard	4
Blue-winged teal	6
Wood duck	1
Green-winged teal	2
Total	13
Canada Goose	1

Table III

1982 BREEDING PAIR SURVEY AREA (QUARTER SECTIONS)

UNIT NO.	UNIT NAME	TOTAL WET ACRES	TOTAL ACRES
OT-78	Staff	59.3	160.0
OT-86	Duenow	22.6	80.0
OT-1	Tuel	25.4	80.0
OT-63	Mondt	54.0	160.0
OT-81	PCA	51.8	160.0
OT-11	C&M Ranch	23.2	120.0
OT-11	C&M Ranch	13.0	48.0
OT-21	Morrison	70.0	158.0
G-3	Engquist	24.8	80.0
G-5	Steinlicht	31.5	160.0
G-6	Leverson	43.0	139.0
G-19	Preuss	50.8	160.0
G-28	Bah Lakes	41.8	135.0
D-38	Runestone	38.0	86.0
D-50	Orange	16.0	80.0
D-23	Rose City	38.0	80.0
D-15	Hedlof	40.0	62.0
D-31	Sabolik	53.9	151.0
D-47	McDowell	29.4	80.0
D-14	Ellis	28.0	51.7
		754.5	2,230.7
D-5	Rachel	22.0	80.3
T-3	Sogge	40.5	132.3
		62.5	212.6

An overall decrease of 42 percent for dabblers was calculated from last year. Last year's population could very well have been inflated due to the fact that ducks from the dried-up prairie wetlands settled in here. When we compare 1982 data to 1979 and 1980 data, we see that the overall decrease is much less.

The estimated total duck production for the District (including easements) was 6,022. This figure is based on an average hen success of 17 percent, a nine percent hatch success, and four ducklings per successful nest raised to flight stage. Easement production was based on information from the Mid-Continent Waterfowl Management Unit (MCWMU) tri-county area of Douglas, Grant and Otter Tail Counties. The figure used was an overall population of 30 ducks per square mile (includes both divers and dabblers).

During the last 3 years, the MCWMU has been experimenting with electrified fence barriers as nesting birds. In addition to test fields, nearby control fields were also sampled. Between May 18 and July 23, 1982, 15 areas, totaling about 560 acres, were dragged from 2 to 5 times. The fenced areas (via the 40 percent Mayfield method) showed a nest success of 17 percent. The controls had a success of 4 percent. Nest success varied widely--from 6 per-

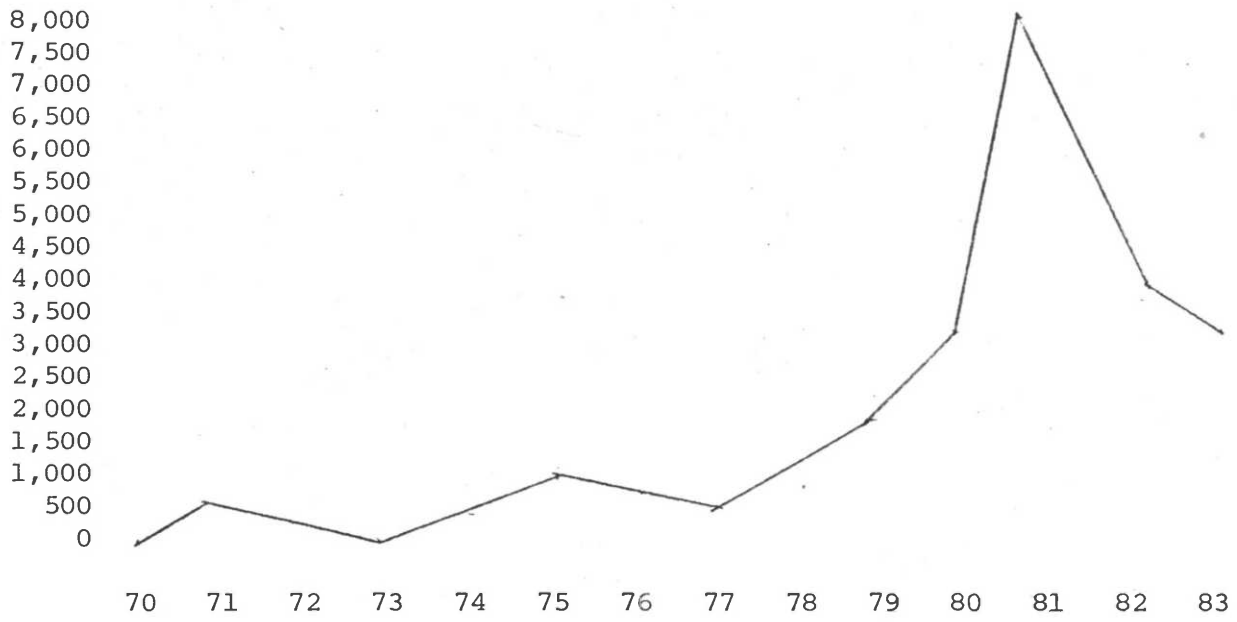
cent to 74 percent in the barriers and from 0 percent to 10 percent in the controls. Trapping and track observation showed that fox, raccoon, skunk, badger, mink and domestic cats crossed the fences to varying degrees. It is interesting to note, however, that Franklin's ground squirrels ranked highest among probable causes for nest destruction in the fence fields.

The above findings show that when predator exclusion from nest cover is effective, nest success may rise sharply above levels in nearby unprotected areas. Accidental entry of predators is a shortcoming, however.

By September 21, few birds except some blue-winged teal and some Canada geese had migrated into the District. During October, there were noticeable migrations of mallard, wigeon and redheads on the 7th and 8th. Other movements occurred on the 14-15 and 19-20 with the latter being larger, more wide-spread and included more diving ducks. A larger migration of divers came between October 31 and November 3 while mallards dominated a migration on November 7-10. Freeze-up of most small lakes and marshes came on November 4-5.

A free-flying breeding population of Canada geese centered in Fergus Falls continues to thrive and expand. There was a noted increase of breeding pairs by 52 percent. Currently, there are an estimated 3,000 birds in the area. The following graph depicts the history of the flock.

January Goose Count**
Fergus Falls



**By Gordon Nielson, Area Game Manager (1969-1974), U.S. FWS (1975-1981), 1982 Don Schultz, Univ. of MN & FWS, Univ. of MN & FWS (1983)

An unusual sighting of two mute swans came on April 28, 6 miles southwest of Fergus Falls. A few days later, one was found dead and the other one mysteriously disappeared.

4. Marsh and Water Birds

There are at least 10 marsh and water birds common to the WMD. Most common are pied-billed grebes, great blue herons, common egrets, sora rails, black-crowned night herons and the American bittern. "Bird Island," a 15-acre island in Pelican Lake near Ashby, Minnesota, is a favorite nesting site for scores of great blue herons, black-crowned night herons, common egrets and double-crested cormorants. The island was recently by The Nature Conservancy. One unusual sighting was that of a yellow-crowned night heron in central Otter Tail County.

This yellow warbler was defending his territory of old pasture covered by prickly ash. 6/74 CV

5. Shorebirds, Gulls, Terns, and Allied Species

Waterfowl Production Areas receive quite heavy use by an array of shorebirds, especially during the times of migration. A sewage lagoon located in western Wilkin County is an excellent place to watch these birds. On May 8, a local birder, Gary Otnes, and his wife, saw the following there: about 200 golden plovers, 14 marbled godwits, 9 long-billed dowitchers, 36 pectoral sandpipers, 152 least sandpipers, 130 Wilson's phalarobes, 17 greater yellowlegs, about 200 lesser yellowlegs, 29 spotted sandpipers, 3 willets, 16 white-rumped sandpipers, 1 Sprague's pipet, 4 stilt sandpipers, 36 dunlins, and 200 semi-palmated sandpipers. Those who enjoy watching shorebirds would enjoy our local migration. During the summer months, the most common birds are killdeer, black terns, greater yellowlegs and Wilson's snipe.

The sighting of an avocet are always talked about between local birders.

6. Raptors

There are about 15 raptors common in the District with the red-tailed hawk, American kestrel, marsh hawk and great-horned owl being most abundant. On August 14, there was a tremendous hawk migration noted over a 3-hour period with about 50 hawks passing per hour. Similarly, on September 15, hundreds of broad-winged hawks were observed flying eastward over Fergus Falls. Other noteworthy observations include one adult Ferruginous hawk on August 18, an immature Gyrfalcon on August 21, an osprey and Swainson's hawk on September 7, two turkey vultures on September 17, an adult golden eagle on October 10, and several bald eagles between November 8-11.

Great gray owls, though not numerous, can be found ocassionally in northern Otter Tail County.

7. Other Migratory Birds

The following miscellaneous observations in the District were made by local Audubon member, Gary Otnes, and Biological Technician Chuck Vukonich:

March 23--first northward junco wave
April 3--first phobe, eastern bluebird and song sparrow
May 2--waves of yellow-rumped warblers and many orange-crowned and black and white warblers
May 5--1,000 Lapland longspurs
May 11--heard two whip-poor-wills at sunset
August 1--one Wilson's warbler (first migrant noted for the warbler group)
August 15--nighthawk migration begins
September 17--six species of warblers observed
September 19--warbler waves; many species of warblers and first juncos and 11 white-throated sparrows showed up.
October 2--first large flocks of Lapland longspurs
October 9--warbler wave including Tennessee, Nashville and orange-crowned warblers
October 17--several LeConte's sparrows
October 24--1 chestnut-collared longspur, 3 snow buntings, 200 Lapland longspurs

Cape May warblers do not nest in the District, but are common springtime migrants.

The Sixteenth Annual Christmas Bird Count, run on December 18, encompasses a 7½-mile radius around Fergus Falls. This year, there were only 29 species sighted, including a bald eagle, making it one of the poorest years. More than 80 species have been identified over the years.

8. Game Mammals

White-tailed deer are the most abundant and prized game animals in the District. They are common on nearly all WPA's. Several WPA's are used as deer wintering areas. They include Nicholson (OT-88), Scribner (OT-68), Ten Mile (OT-28), Agassiz Beachline (OT-60) and Reger (D-2). Locally the deer herd wintered very well resulting in a good fawn crop.

No other big game mammals are present except for extreme eastern Otter Tail County where several moose are known to winter. Two moose were seen on the Boldingh-Monson WPA (W-4) on June 23. Periodically black bear, bobcat and lynx are reported. Red fox, raccoon, badger, and skunk are doing well--to the detriment of waterfowl.

11. Fisheries Resources

The Minnesota Department of Natural Resources fisheries crews used wetlands on five District WPA's for walleye rearing during 1982. Fry were stocked in six ponds; 2,200 pounds of fingerlings were harvested from three of the ponds. The remaining ponds were considered failures. Harvested fingerlings were distributed to several lakes in Otter Tail County and to Pomme de Terre Lake in Grant County.

Summary of 1982 Walleye Harvest on WPA's

WPA	Location	Harvest Pounds	Harvest No. of Fingerlings
Mavis, OT-98	T. 132 N., R. 43 W., section 11	1,470	51,450
Nicholson, OT-88	T. 131 N., R. 42 W., section 6	No production	
Headquarters, OT-83	T. 132 N., R. 43 W., section 1	No production	
Bah Lakes, G-28	T. 130 N., R. 41 W.,	69	1,587
Bah Lakes, G-28	T. 129/130 N., R. 41 W. sections 1/36	654	5,960
Fedje, D-32	T. 129 N., R. 40 W., section 29	7	101

15. Animal Control

A 130-square mile goose refuge was established in the Fergus Falls vicinity in 1963. Since then, a free-flying breeding population of giant Canada geese has become established (see section G-3). Assistance was provided to 24 local farmers from whom goose depredation complaints were received during the summer. Nine FWS exploders were made available for goose dispersal.

Crop depredation by geese was documented at 33 locations in fields of corn, soybeans, and small grains. Crop loss was estimated at $4,200 plus investment loss on 21 acres. No monetary assessment was made on an additional 19 acres receiving partial crop loss. Approximately 30 acres were lost at a calculated value of $12,000 in 1981. The reduction in crop loss in 1982 has been attributed to farmers seeking assistance prior to damage in 1982 and the event of high water which reduced areas of concentrated damage.

A special goose hunt was held in the Otter Tail County Goose Refuge October 31 through November 4. The objective of the hunt was to harvest 2,000 local geese in an attempt to hold the overwintering population at or below a maximum of 4,000 geese. According to Minnesota DNR estimates, 2,283 geese were killed, of which approximately half were taken on the first day of the 5-day hunt.

Six reports of corn depredation away from water were received during June. Goose damage normally occurs in fields immediately adjacent to wetlands. Yellow-headed blackbirds (Xanthocephalus xanthocephalus) were discovered to be the culprits. Losses of corn seedlings ranged from 5 acres to a 28-acre field where an estimated 50 percent loss occurred. Neither area farmers nor FWS personnel had ever encountered the problem before.

H. PUBLIC USE

1. General

In cooperation with local cub scout troops, the Otter Chapter Izaak Walton League and the Wild Rice Children's Home, several bluebird trails were established. Materials were purchased by the Ikes and distributed to the scouts and other interested individuals for installation and maintenance. Bluebird trails were established on the following WPA's:

Scribner, OT-68
Ten Mile, OT-28
Mavis, OT-98
Knollwood, OT-101
Nicholson, OT-88
Haugen, OT-92

A low percentage were used by bluebirds while tree swallows, house wrens and house sparrows quickly utilized many of the houses.

A successful nest. Local cub scouts, high school ornithology classes and other school groups constructed bluebird boxes and used several WPA's as sights for "bluebird trails." 6/82 CV

For the second year, station staff and citizen volunteers put together a Young Waterfowlers Program. This program was a series of training sessions designed to introduce youngsters to techniques and behavior of the waterfowler naturalist through structured and supervised training. The program was organized because of a concern for waterfowl and the sport of waterfowling.

The subject matter of the training sessions was varied, but revolved around waterfowling. Training sessions were outdoor oriented and a minimum of classroom work was required. Subject matter was as follows: gun safety, hunting behavior, water safety, laws and regulations, waterfowl identification, shooting skills, range estimation, building and camouflaging blinds, waterfowl habitat and biology, clean and care of game, decoy setting, goose hunting, dog training, and duck calling.

The key to the success of the program was the interest and commitment of the volunteer adult leaders. The goal of the program was to have one adult leader for each one or two students in the program. The adults were with the students throughout the training sessions, as well as during the fall duck hunts. The general responsibilities of the adult leaders were to obtain concern for the safety of the students in the program, to display through personal example all aspects of sportsmanship and to impart to the students they supervised their particular knowledge of waterfowl hunting.

Fall hunts were the culmination of the instructional program. It was during this hunting experience that the students were able to put together all the knowledge and skills acquired during the training sessions. The success of the hunting experience was not measured by the number of geese or ducks bagged, rather by how the student conducted himself during the hunt and how he applied his acquired knowledge. The adult leaders accompanied the students on the hunts and had the responsibility to supervise their activity in such a way that their students were always exposed to principles of good sportsmanship through example.

6. Interpretive Exhibits/Demonstrations

The District headquarters office serves as the visitor contact station where walk-through inquiries are handled. Miniature "on refuge" displays are located in the lobby. Budget restraints and limited floor space prohibit larger displays.

We have three separate free-standing System 70 displays set up at various local functions and businesses throughout the year. The three themes are: 1) prairie wetlands, 2) National Wildlife Refuge System, and 3) environmental education. We target most of our efforts at county fairs, National Hunting and Fishing Day, National Wildlife Week and a local "Save the Wetlands" Club fund raiser. Banks, shopping malls and other business also welcome the displays.

Three years ago, 25 experimental leaflet boxes were put up on certain WPA's receiving heavy hunter use. We stocked them with a pamphlet entitled "A Message to Hunters Who Use WPA's." Public use of the pamphlet was low.

8. Hunting

All hunting seasons in the District are held in compliance with state regulations. The waterfowl season opened under overcast skies and rain. Duck numbers were less than expected and hunting success was mediocre for the most part. Mallard, blue-winged teal and wood ducks were most common in the bags for the October 7 opener.

Hunter activity and success was low for the balance of the season. Some avid hunters were taking limits and advantage of unpredictable bird movements. The best diver shooting came between October 31-November 3 as the birds moved ahead of a storm system that came from the west. All in all, it was a poor year and the hunters had to be persistent to get their birds.

There was a special 5-day goose hunt within the 155-square mile Fergus Falls Goose Refuge. The wintering flock has been steadily building and over the last 2 years depredation complaints have been increasing. The hunt was intended to cut the flock down and then hold it at or a little below a maximum of 4,000 birds. The planned harvest of 2,000 birds was slightly exceeded reaching an estimated 2,283 birds (DNR computer estimate). Aerial and ground checks showed that about 3,260 hunters took part in the hunt with over 50 percent of them being afield for the Sunday morning season opener. A later second season was planned but cancelled because the kill quota was reached during the first hunt.

Pheasant numbers were down about 40 percent from last year due to bad winter storms in January and February. There seemed to be a carryover of optimistic hunters from last year but many of them turned sour after the opener. For those die-hards with good dogs, one or two bird bags throughout the 44-day season were common. The District is on the northern edge of the prime pheasant range and the birds tend to fluctuate with the severity of the winters. As this report is being written the birds are enjoying a snowless winter.

Ruffed grouse hunting was poor and limited to a handful of partially-wooded WPA's in eastern and northern Otter Tail County. Apparently, the birds are on the down swing of their cycle as bird numbers were 50 percent lower than last year. Likewise, Hungarian partridge numbers were down an estimated 47 percent from last year. Few hunters go after "huns" themselves, rather most of them are taken incidentally to pheasant or other upland game hunting.

WPA's receive very heavy use by deer hunters. The DNR harvest figures indicate that about 5,490 white-tails (includes private land) were bagged in our four-county area. An estimated 420 deer were harvested on WPA's. The firearms season was a split season open for bucks only, November 6-8 and either sex with doe permit on November 13-14. Archers enjoyed a 67-day season taking an estimated 64 deer off District WPA's.

Other hunting does occur in the District but is not significant. Much of it is incidental to other forms of hunting. This includes cottontail rabbit, gray and fox squirrel, Wilson snipe, woodcock and rail hunting. Recently, predator calling and coon hunting with dogs has been on the increase and we are finding moderate use of WPA's for these sports.

The following table summarizes District hunting activities:

Game Animal	Activity Hours	Estimated Harvest
Ducks	16,575	5,790
Geese	1,420	270
Deer (bow)	4,560	64
Deer (gun)	15,720	420
Pheasant	11,140	1,140
Ruffed grouse	320	30
Snipe and woodcock	385	105
Rabbit and squirrel	600	365
Hungarian partridge	450	130
Red fox	210	45
Raccoon	140	80

10. Trapping

All trapping seasons, like hunting, are run in compliance with Minnesota State regulations. Raccoon season runs from October 22-December 31; badger and fox season runs from October 22-February 28; mink, beaver and muskrat ran from October 30-December 31. Muskrat populations remained at about the same as last year. Mink, fox, raccoon and beaver seemed to be plentiful throughout

our working area. A complaint by local fur buyers is that the trapping season on mink and fox has been opening up too early. They claim too many unprime furs are taken as a result. Following are the local top prices for the various furbearers:

Beaver--$10
Buck mink--$32
Female mink--$12
Muskrats--$2
Raccoon--$25
Red fox--$40

An estimated 8,570 activity hours were spent by trappers.

Muskrat trapping pressure has decreased some in the past 2 years due to falling raw fur prices.

11. Wildlife Observation

Local high school ornithology classes often use our Nicholson (OT-88) WPA in their bird identification field trips. Other WPA's are no doubt used by schools and the public but most of this is done from land vehicles. District personnel also lead groups to Wilkin County each spring to observe the state-threatened greater prairie chicken on their booming grouns. Casual observation is difficult to measure but probably totals about 1,400 activity hours a year. To date, we do not maintain any wildlife observation tour routes.

16. Other Non-wildlife Oriented Recreation

Non-wildlife oriented recreation has been increasing during recent years. This includes berry picking, mushroom harvest, cross-country skiing, snowshowing, dog training and hiking for pleasure. Because of our dispersed acreage, it is difficult to measure user activity reliably.

17. Law Enforcement

Each year many WPA's are visited by members of the staff for one reason or another. These visits and inspections turn up many kinds of problems on WPA's. Situations such as agricultural, grazing and vehicle trespass are frequent. Other things such as trash dumping and rock dumping are also found. Calendar Year 1982 began with 32 situations to be investigated. During the year, six cases were either resolved or dropped due to a lack of evidence or being insignificant. An additional six cases were gained through the various inspections. So, at the end of the year, 32 WPA problems still remain to be investigated.

As in the past several years, very little time was spent in patrolling Waterfowl Production Areas to enforce waterfowl regulations. Effort was directed at the first two or three weekends with a few mid-week patrols. Many hunting parties were contacted on WPA's within the District. Most of the hunters were legal, except for four individuals who received violation notices concerning six different charges. Four charges resulted in $50 fines each for using lead shot in a non-toxic shot zone and two charges resulted in $50 fines each concerning unplugged shotguns. All individuals paid the fines with little delay.

18. Youth Programs

This station administered a non-resident Youth Conservation Corps camp in 1982. YCC enrollees were recruited in the Fergus Falls area. The general public was notified through newspaper ads and a radio spot commercial. Junior and Senior High School counselors and the Minnesota Job Service Department contacted potential enrollees. Five enrollees were selected from approximately 25 applications received. The selection process was conducted at the Minnesota Job Service Department Office with the assistance of personnel from that office.

Supervision for the five enrollees was provided by a GS-5 Biological Technician who had previously been employed at this duty station and was familiar with equipment to be used and the jobs to be performed. This employee, Scott Collins, has a Bachelor's Degree in Wildlife Management and was able to relate his knowledge of wildlife to the YCC enrollees. The five enrollees were: Martin Renner, Todd Brogard, Bonnie Streeter, Jeanette Jordahl and Paul Bitzen.

The 1982 YCC program was a welcomed addition to this station. The YCC crew worked well together as a unit and completed many high quality projects. We are firm believers in the benefits of the YCC program and sincerely hope we

can plan on a work crew in the future. Funding, however, is a problem. The 1982 program was funded with $10,000 that came out of our station operating budget. This funding arrangement cannot continue indefinitely without serious disruption to station operations.

The YCC crew constructed 14 parking lots, 14 gates, removed 688 rods of interior fence, riprapped 9 sites, installed 377 rods of on-line markers, constructed 270 rods of new boundary fence, repaired 285 rods of old boundary fence and posted the boundaries on 39 Waterfowl Production Areas.

Mr. Gordon Mostue, Fergus Falls, was hired under the Green Thumb Program. Gordie works as an assistant to Maintenance Worker Luther Melby.

I. EQUIPMENT AND FACILITIES

1. New Construction

Additional boundary fence and boundary markers were placed at locations where vehicle or agricultural trespass problems existed. Seventy rods of fence were constructed by the Fergus Falls YCC about a new shooting range per state requirement. The range is bordered on three sides by the Horstman WPA, OT-2, Otter Tail County. An additional 200 rods of new fence were constructed and 285 rods of fence repaired by force account. Boundary markers were located along 377 rods of boundary on five WPA's. "Class B" parking lots were constructed and gates constructed at 14 access points on ten WPA's where vehicle trespass problems were noted.

1982 Boundary Fence Construction

WPA	Location	Length (rods)	Completed
Horstman, OT-2	Around gun range	70	8/82 by YCC
Mavis, OT-98	North side along horse pasture	135	6/30/82 by YCC
Bah Lakes, G-28	Southeast corner around building site	45	8/17/82 by YCC
Sabolik, D-31	East side around building site	20	9/7/82 by YCC

1982 Boundary Fence Repair

WPA	Length (rods)	Date Completed (by YCC)
Olson, D-21 (NE corner)	70	6/30/82
Sabolik, D-31 (E side around bldg site)	80	9/7/82
Kube, OT-51 (access lane)	135	7/1/82
	285	

Boundary Markers

WPA	Location	Distance (rods)	Date Completed (by YCC)
Nordby, G-37 -	West side	78	8/12/82
Hanneman, W-7	North side	65	9/15/82
Rossow, OT-65	North side	40	7/6/82
Gardner, OT-69	West side	149	10/21/82
Neuman, OT-93	Southwest side	45	7/6/82
		377	

1982 Parking Lot Construction

WPA	Staff Days	Date Completed (by YCC)
Aaberg, OT-3	2.5	7/19/82
Kube, OT-51	2.0	7/1/82
Mondt, OT-63	4.0*	7/13/82
Rossow, OT-65	2.5	7/6/82
Gardner, OT-69	2.5	7/14/82
Townsend, OT-80	2.5	7/7/82
Oscar, OT-95	2.5	7/19/82
Bates, G-18	2.5	8/13/82
Preuss, G-19	2.5	8/10/82
Bah Lakes, G-28	2.5	8/17/82
Nordby, G-37	2.0	8/12/82
Runestone, D-38	2.5	8/5/82
McDowell, D-47	2.0	7/29/82
	32.5	

*Two parking lots constructed.

A small number of heavy equipment projects, primarily wetland restoration, were completed in the District. The following summarizes heavy equipment work as well as alternative methods of wetland restoration, i.e., sandbag ditch plugs and ditch plugs constructed with scraper blade attached to 4WD White tractor.

G-2 Mud Lake--3 ditch plugs** (RIP 73, 74, 75)
G-5 Steinlicht--2 ditch plugs (RIP 35, 36)
G-6 Leverson--1 sandbag plug (RIP 40)
G-8 Green--1 ditch plug** (RIP 57)
G-21 Demaree--1 sandbag plug (RIP 32)
G-28 Bah Lakes--1 sandbag plug (RIP 73)
G-29 Strand--1 ditch plug** (RIP 32)
G-31 Historical Society--2 ditch plugs (RIP 78, 79)
G-51 Frikken--5 ditch plugs (RIP 25, 26, 27, 28, 29)
D-5 Rachel--1 sandbag plug (RIP 1)
D-21 Olson--1 ditch plug (RIP 1)
D-24 Langos--1 ditch plug (RIP 3); 1 water control structure (RIP 36)
D-40 Zickur--7 ditch plugs (RIP 101, 102, 103, 104, 105, 106, 107); 1 water control structure (RIP 108)
D-44 Nelson--1 ditch plug repair (RIP 8)

**Earthwork completed with scraper blade on White tractor.

OT-3 Aaberg--3 ditch plugs (RIP 30, 31, 32); 3 tile line checks* (RIP 4,9, 14)
OT-14 Simpson--1 sandbag plug (RIP 21)
OT-16 Weigers--4 tile line checks*; 1 break (RIP 67)
OT-25 Mickelson--1 sandbag plug
OT-27 Blacken Lake--4 ditch plugs (RIP 66, 67, 68, 69); 1 tile line check* (RIP 5)
OT-28 Ten Mile--1 sandbag plug
OT-52 Busko--1+2 ditch plugs** (RIP 37, 38)
OT-34 Swenson--1 sandbag plug (RIP 37)
OT-78 Staff--1 water control structure (RIP 112); 3 improved field access/field approach (RIP 74, 110, 111)
OT-81 PCA--8 ditch plugs (RIP 68, 69, 70, 71, 72, 73, 74, 75); 1 improved field access/field approach (RIP 2)
OT-83 Headquarters--1 sandbag plug (RIP 9)
OT-88 Nicholson--1 sandbag plug (RIP 50); 4 tile line checks*; 4 breaks (RIP 90, 88)
OT-96 Backstrom--13 ditch plug repairs (RIP 5, 7, 10, 12, 19, 21, 24, 73, 74, 130, 131, 82, 100); 1 water structure repair (RIP 91)
OT-98 Mavis--3 ditch plugs; 1 tile line check; 1 break
OT-99 Bakke--3 ditch plug repairs (RIP 20, 18, 13); 1 tile line check*; 1 break (RIP 23)
OT-102 Hintermeister--1 sandbag plug (RIP 69)

Totals:

Sandbag plugs	10
Ditch plugs	45
Ditch plug repairs	17
Tile line checks (breaks)	11(7)
Water control structures	3
Water structure repair	1
Improved field access/field approach	4

*To determine if tile lines are present.

**Earthwork completed with scraper blade on White tractor.

1982 Heavy Equipment Rental Summary

Contractor	Eq. Rented	Amount	Unit Price	Total Amount
Mandrell Const.	D-7	30 hours	$38	$1,140
	moves	8 moves	$30	$ 240
	backhoe	10 hours	$22	
Kermit Fletcher	D-7	19 hours*	$50	$ 950
Kay Satterlie	Backhoe	3 hours	$36	$ 108
Delzer Const.	951 cat	5 hours	$40	$ 200
	580 backhoe	9 hours	$40	$ 360
	Labor	9 hours	$10.50	$ 94.50
Strom Const.	Backhoe	13½ hrs.*	$55	$ 742.50
	D-3	5 3/4 hrs.*	$36	$ 207
	D-6	2½ hrs.*	$46	$ 115

Total Dozer hours----------62.25
Total backhoe hours----------35.50
Total moves----------8
Grant Total----------$4,157.00

*Several Douglas County Sportsmen Clubs bore the cost of equipment rental for wetland restoration work on Langos (D-24), Zickur (D-40), and Olson (D-21) WPA's. During 1982 water control structures were installed on three wetland basins. Management will be directed towards improving productivity of 57 acres of marsh. Structures placed on Staff (OT-78) and Langos (D-24) WPA's consisted of a ½-round riser, culvert and antiseep diaphragm in an earthen plug. The structure at Zickur (D-40) consists of a stoplog channel on the end of a 24" culvert. A second culvert that once drained the Zickur basin will be maintained as a drawdown tube. The District now operates water control structures on 18 wetland basins totalling 510 acres. The following tables summarize structure installation costs during 1981:

	Riser Height	Culvert Diameter	Total Cost**	Wetland Acres	Cost Per Acre
Zickur	4.4'*	24:	$ 554.80	15.0	$36.99
Staff	4'	18"	$1143.27	13.5	$84.69
Langos	4'	18"	$2025.33	28.4	$71.31
Totals			$3723.40	56.9	$65.44

*Capacity to fluctuate water levels--4.4 feet.

**Materials plus equipment rental.

Porcelain water level gauges have now been installed at 14 water control structure sites. The gauge is generally attached to the control structure.

WPA	Gauge Installation	Bench Mark
Julsrud #1	4' gauge; 12/1980	Spillway = 83.0
Julsrud #2	4½' gauge; 10/1982	Spillway = 100.0
Backstrom	3½' gauge; 10/1982	Spillway = 98.5
Mickelson	3' gauge; 9/1982	Spillway = 100
Rossow	6' gauge; 9/1982	Spillway = 100
Mortenson	4½' gauge; 10/1982	Spillway = 100
Ten Mile	5' gauge; 9/1982	Spillway = 100
Stowe Lake Unit 6	3½' gauge; 10/1982	Spillway = 100 = 1341 MSL
Orange	3½' gague; 10/1982	Spillway = 100
Runestone	5' gauge; 10/1982	Spillway = 83.5
Nordby	4' gauge; 9/1982	Spillway = 100
DeLong	5' gauge; 9/1982	Spillway = 100
Zickur	4' gauge; 10/1982	Spillway = 100 = 1347 MSL
Staff	4' gauge; 9/1982	Spillway = 94.36
Langos	3½' gauge; 11/1982	

An additional 62 wetland basins were restored with the installation of earthen ditch plugs, sandbag plus and tile line breaks. Basins restored in this manner throughout the District totalled 468 as of December 31, 1982. Several earthen plugs containing water control structures and critical earthen ditch plugs were riprapped under force account with field stone to prevent future problems with wave action and muskrat borrowing.

1982 Riprap Work

WPA	Riprapped	Date Completed (by YCC)
Townsend, OT-80	Ditch plug	7/7/82
Backstrom, OT96	Structure site	10/20/82
Bakke, OT-99	Ditch plug	8/8/82
Mortenson, OT-105	Structure site	8/20/82
Langos, D-24	Structure site	11/22/82
Sabolik, D-31	Field crossing	9/7/82
Runestone, D-38	Structure site	8/5/82
McDowell, D-47	Ditch plug & field crossing	7/29/82
Bah Lakes, G-28	Two ditch plugs	8/17/82
Nordby, G-37	Structure site & ditch plug	8/12/82

A total of 285 rods of boundary fence was repaired on the Olson (D-21), Sabolik (D-31) and Kube (OT-51) WPA's. Interior fence totalling 688 rods was removed on seven WPA's. A total of 21 staff days were expended checking boundary posting on 39 WPA's during 1982.

1982 Interior Fence Removal

WPA	Length (rods)	Date Completed (by YCC)
Kube, OT-51	135	7/1/82
Mavis, OT-98	115	6/30/82
Knollwood, OT-101	160	7/9/82
Olson, D-21	60	6/30/82
Runestone, D-38	40	8/5/82
McDowell, D-47	38	7/29/82
Bates, G-18	140	8/13/82
	688	

Boundary Posting - 1982

WPA	Date	Staff Days (all YCC)
D-5 Rachel	8/15/82	3.00
D-6 Stowe Lake	9/23/82	.50
G-28 Bah Lakes	8/17/82	1.25
G-1 Pomme de Terre	8/20/82	1.00
G-49 Alvastad	9/30/82	.25
G-33 Spaulding	9/30/82	.25
G-26 Redhead Slough	9/29/82	2.00
G-50 Williams	9/30/82	.25
G-35 Blakesley	9/10/82	.50
G-16 Larson	9/10/82	.25
G-10 Mud Lake	9/13/82	.50
G-2 Bailey Slough	9/13/82	.25
G-5 Steinlicht	8/25/82	.38
G-44 Hanson	8/25/82	.50
G-34 Mittlestadt	8/20/82	.25
G-9 Hoffman	8/30/82	.25
G-43 Block	9/8/82	.13
G-8 Green	9/7/82	.50
G-30 Cheney Trust	9/8/82	.50
G-3 Engquist	9/3/82	.25
G-11 DeLong	9/3/82	.50
G-39 Paquin	8/24/82	.25
G-18 Bates	8/13/82	.50
G-41 DeLong East	9/3/82	.25
G-37 Nordby	9/3/82	.25
G-12 Stoneberg	9/8/82	.25
OT-2 Horstman	9/10/82	.38
OT-66 Rasmussen	9/10/82	.25
OT-14 Simpson	9/10/82	.75
OT-42 Bernoff-Johnson	9/8/82	.50
OT-79 Gilmore	9/15/82	.25
OT-92 Haugen	9/8/82	.38
OT-102 Hintermeister	9/7/82	.75
OT-88 Nicholson	9/10/82	1.25
W-7 Hanneman	10/26/82	.25
W-5 Brown	10/26/82	.50
W-2 Bellmore	10/26/82	.50
W-1 Shulstad-Blakenship	10/26/82	.25
W-3 Haugrud-Sillerud	10/26/82	.25
TOTAL		21.02

3. Major Maintenance

Design problems still plague the District shop-maintenance facility, now beginning its third year of operation. Improper slope and improperly sealed joints have resulted in leaking problems through the building's combination roof/parking lot. An asphalt emulsion (SS1H) was applied in June in an attempt to seal cracks that had formed in the asphalt surface.

Conference room, hallway and front office walls of the headquarters building were painted.

Water washed along the culvert, through the earthen plug at the Backstrom water control structure site as a result of high spring waters. The Backstrom (OT-96) structure is one of two in the District in which an anti-seep diaphragm was not attached at time of structure installation. The culvert was removed, diaphragm attached and plug reworked at a cost of approximately $400. All existing Backstrom ditch plugs (13) were widened and in most instances raised in elevation to facilitate vehicle traffic and improve water holding capacity. Ditch plugs were also reworked on the Nelson (D-44) and Bakke (OT-99) WPA's for the same reason.

A Special Use Permit was issued to allow the neighbor of Zickur WPA (D-40) to clean out portions of Douglas County Ditch No. 3 which runs through Zickur WPA. A similar permit was issued to a neighbor of the McDowell WPA (D-47) to clean out a portion of a ditch draining private property through the McDowell Unit.

4. Equipment Utilization and Maintenance

The District acquired a 1979 Dodge 4 x 2 3/4 ton club cab pickup (I-136512) for YACC use. The vehicle was transferred from YACC, Delaware in February 1982. A 1980 tiltbed trailer with gooseneck (I-141324) was transferred to Litchfield WMD in December 1982.

Following is a summary of vehicle maintenance expenses incurred during FY 1982:

Summary of Vehicle Maintenance Expenses (FY 1982)

Vehicle	License	Direct Maintenance Cost (FY 82)
1974 GMC Flatbed	I-114256	$ 426.13
1978 Datsun	I-123840	$ 82.98
1978 GMC Flatbed	I-123850	$ 188.16
1979 Dodge 4 x 4	I-123861	$1,440.73
1980 Ford Sedan	I-129488	$ 137.38
1980 Chevy Luv	I-129499	$ 214.42
1981 Chevy 4 x 4	I-129409	$ 899.52
1981 Ford Fairmont	I-136386	$ 177.67
1981 AMC Jeep Scrambler	I-136403	$ 113.44
1981 Dodge ½-ton	I-136448	$ 242.44
1979 Dodge 3/4 ton	I-136512	$ 851.12
1978 Dodge stakebed	I-123853	$ 138.06
		$4,912.05
White tractor		$ 10.69
Massey Ferguson Tractor		$ 85.60
Ford Tractor		$ 210.90
		$ 307.19
	TOTAL:	$5,219.24

J. OTHER ITEMS

2. Items of Interest

On September 17, Wetland Manager Marv Mansfield worked his last day for the Fish and Wildlife Service. He was honored the week before with a retirement party at the Holiday Inn. Over 80 people were present, including a childhood friend from Ohio. Marv was presented with a trolling motor, battery and case and miscellaneous toys to pursue one of his hobbies.

Marv was replaced by Rollin Siegfried, Acquisition Supervisor from Pierre, and former Wetland Manager of the Detroit Lakes Wetland Management District.

Assistant Manager Rick Dornfeld received a monetary award for the development of a Young Waterfowlers training program. Wendell Olson, Range Conservationist, received a monetary award for developing and refining a procedure for the harvesting of native grass seed. His method guarantees a success rate of 90 percent. Utilizing Mr. Olson's techniques, the combined efforts of the Fergus Falls and Detroit Lakes WMD's resulted in the successful harvest of roughly 4,800 pounds PLS of native grass seed. On the open market, this would have been roughly $5.80/lb. Harvest by WMD staff resulted in a cost of only $3.10/lb.

Assistant Wetland Manager Kevin Kenow was recognized with a monetary award for his outstanding performance in marsh restoration. He also performed beyond standards in directing the daily work of other employees in the areas of upland cover development, wildlife inventories and boundary control.

The following is a list of training activities that occurred this past year:

Small Purchase Course - correspondence course sponsored by Acquisition and Assistance, Inc. - completed by Rick Dornfeld, Marv Mansfield and Pauline Wiziarde.

Pre-Retirement Workshop - OPM, Twin Cities, MN - July 27-29, attended by Marv Mansfield.

Law Enforcement Refresher - Lake Carlos State Park, Alexandria, MN - September 20-24 - attended by Rick Dornfeld, Kevin Kenow and Will Steffen.

Pesticide Applicator's License Renewal - correspondence course sponsored by the University of Minnesota - completed by Rick Dornfeld, Will steffen, Chuck Vukonich, Luther Melby, Wendell Olson and one summer temporary employee.

Using the Micro-Apple Computer - Fergus Falls Community College - attended by Pauline Wiziarde.

3. Credits

The following personnel were responsible for the sections indicated for the 1982 Narrative Report:

Rollin Siegfried: B; C-1 & 2; E-1 & 2

Rick Dornfeld: A; D-1 & 2; E-4; F-1; H-1 & 18

Kevin Kenow: F-2 & 3; G-11 & 15; I-1, 3 & 4

Will Steffen: F-12 & 13; H-17

Wendell Olson, F-1, 4, 5, 8, 9 & 10

Chuck Vukonich: G-1, 2, 3, 4, 5, 6, 7, & 8; H-6, 8, 10, 11 & 16

Pauline Wiziarde: E-3; J-2 & 3; typed and assembled entire report