LOSTWOOD WETLAND MANAGEMENT DISTRICT

Kenmare, North Dakota

ANNUAL NARRATIVE REPORT

Calendar Year 1988

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

REVIEW AND APPROVALS

LOSTWOOD WETLAND MANAGEMENT DISTRICT

Kenmare, North Dakota

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Theodore W. Gutzke — Refuge Manager — 3/22/90 — Date

Project Leader — 3/22/90 — Date

Refuge Supervisor — 5.21.90 — Date

Regional Office Approval — 5/21/90 — Date

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INTRODUCTION

The Lostwood Wetland Management District (WMD) is located in northwest North Dakota and includes Mountrail County and the nine northern townships in the "gooseneck" of Ward County. The WMD is headquartered out of the Lostwood National Wildlife Refuge (NWR) located 22 miles north of the town of Stanley. Lostwood WMD is part of the Des Lacs NWR Complex which also includes the Lostwood NWR, Des Lacs NWR and the Crosby WMD.

The WMD consists of 45 Waterfowl Production Areas (WPA) totalling 8,085 acres and wetland easements encompassing 33,820 wetland acres. In addition, the Shell Lake NWR is also administered by the WMD and includes 710 acres of fee title and 640 acres of wildlife easement.

Most of the district is within the Missouri du Coteau which is the terminal moraine deposited by the Wisconsin glacier about 10,000 years ago. The topography of the coteau is rolling hills with poor soils, numerous natural wetlands and a substantial portion of the native prairie grassland still intact. This area is the best waterfowl habitat found in the prairie pothole region of North Dakota.

The primary objectives of the WMD are the protection, preservation and management of wetlands and uplands for waterfowl production.

A. HIGHLIGHTS

- The worst drought in 50 years resulted in few wetlands for waterfowl.
- Nine wetland easements were obtained protecting 514 acres.
- A waterfowl nesting island was constructed on Chafer WPA.
- David Gillund EOD as Wetlands Manager during November.

A common sight throughout the district was dry wetlands, as Sikes WPA demonstrates. Threre was very little water for waterfowl, and nesting islands were left high and dry.

LV 8/88

B. CLIMATIC CONDITIONS

Month	Temperatures Max	Min	Snowfall	Precipitation	Average
January	44	-24	9.8	0.74	0.46
February	61	-31	0.8	0.07	0.45
March	66	-03	7.5	0.87	0.68
April	83	13	-	0.19	1.16
May	97	30	-	1.95	1.99
June	103	47	-	1.88	3.27
July	105	45	-	1.97	2.16
August	103	33	-	0.11	1.86
September	85	35	-	1.57	1.59
October	83	06	-	0.19	0.92
November	65	-07	4.0	1.06	0.53
December	49	-23	8.8	0.84	0.49
				Totals 11.44	15.56

* Recorded from Des Lacs NWR weather station

Very dry conditions beginning in August of 1987 continued through most of 1988. Very few temporary and seasonal wetlands had water in the spring; and by August, nearly all semi-permanent wetlands were dry including some which had held water through the 1930s.

Significant events contributing to the drought were the minimal April precipitation and the very warm, windy month of June. Average temperature for June was 76°F, nearly 10 degrees warmer than the previous average since weather records have been kept.

Fairly good snowfall was received in December; however, because of the absence of a frost seal, the area will need above normal precipitation throughout 1989 in order for wetlands to begin to recover from the extreme drought.

C. LAND ACQUISITION

1. Fee Title

One Waterfowl Production Area was purchased this year; the 310 acre Moen tract was finalized and we took legal possession. This WPA is located on the south boundary of the Shell Lake NWR and was a good addition to enhance wildlife habitat in the area.

2. Easements

Public interest in the Service's small wetland easement acquisition program continues to remain high. During the year, nine easements were finalized totalling 514 acres of wetlands which are listed below.

Tract #	Name	County	Wet Acres
446x	Goettle, Lawrence B.	Mountrail	38
445x,1	Goettle, Lawrence B.	Mountrail	72
450x	Lucy, Douglas	Mountrail	13
448x,1	Goettle, Jack & Marlene	Mountrail	97
447x,1	Goettle, Leon & Edith	Mountrail	103
444x	Goettle, James A.	Mountrail	85
441x	Roise, Gerald O.	Mountrail	28
443x	Goettle, James	Mountrail	68
442x,1	Roise, et al,Gerald O.	Mountrail	10
			514

3. Other Programs

LIST OF WPAs AND NWR
(ACREAGE AND COUNTY LOCATION)

WPA/Refuge	Acres	County
Ball	230	Mountrail
Blikre	43	Mountrail
Bloom	327	Mountrail
Brekke	96	Ward
Bryant	366	Mountrail
Carlson	35	Mountrail
Chafer	534	Mountrail
Charnetzki	22	Mountrail
Cvancara, B.	90	Mountrail
Cvancara, S.	28	Mountrail
Erickstein	121	Ward
Follis	17	Mountrail
Glick	172	Mountrail
Graichen	88	Mountrail
Grant	120	Mountrail
Grinolds	160	Mountrail
Halvorson	401	Mountrail
Howell	105	Mountrail
Hoveland	325	Mountrail
King	335	Mountrail
Kjallberg	575	Mountrail
Johnson, H. D.	320	Mountrail
Johnson, N.	115	Mountrail
Lee	40	Ward
Lundt	80	Mountrail
Martinson	558	Mountrail
Moen	310	Mountrail
Pullen	240	Mountrail
Rehfeld	400	Ward
Reinarts	160	Mountrail
Sikes Dam	320	Mountrail
Solberg	90	Mountrail
Sorenson	26	Mountrail
Spooner	160	Mountrail
ND #2	403	Mountrail
Svenningson	120	Mountrail
U.S. #1	70	Mountrail
U.S. #1A	33	Mountrail
U.S. #1B	21	Mountrail
U.S. #1C	40	Mountrail
U.S. #1D	19	Mountrail
U.S. #1E	15	Mountrail
U.S. #1F	27	Mountrail
U.S. #1G	42	Mountrail
Vaage	205	Mountrail
Wirtz	93	Mountrail
Shell Lake	710	Mountrail

Total Wetland	2,751	acres
Total Native Grass	3,301	acres
Total DNC	2,010	acres
Total Woodland	23	acres

Total Lostwood WMD			
WPA	3,085	acres	
Shell Lake NWR	710	acres	
Shell Lake NWR	640	acres	(easement-upland)
	532	acres	(easement-flowage)

Management of three WPAs in the Crosby WMD were transferred to the Lostwood WMD in October 1986. These WPA's are located in Burke County adjacent to the Mountrail County line.

County Line	103 acres
Eckert	200 acres
Nelson	320 acres

A significant amount of time was spent searching for drainage ditches in Conservation Reserve Program (CRP) parcels which might be restored by a wetland restoration extension agreement. Only one agreement involving restoration of two small temporary wetlands was completed. Although drainage in the district is limited, possible future opportunities for restoration will occur as more land is enrolled in CRP.

D. PLANNING

2. Management Plans

A WPA inventory plan is being implemented into the Des Lacs Refuge Complex. The goal is to inventory all WPAs in the WMD using the WPA Inventory and Management Guide during the next five years. These will replace the rip card system which has become outdated over the years.

6. Other

Positive prints, 4"/mile in size, were obtained from the National Wetland Inventory for the entire district. The prints are invaluable for use in resource planning, fee and easement acquisition, private land projects, and enforcement work.

E. ADMINISTRATION

1. Personnel

Figure 1 - Lowell (14) Dave (8)

		Station	
1.	Del Pierce, Project Leader, GS-12	Complex H.Q.	PFT
2.	Tedd Gutzke, Asst.Project Leader, GS-11	Complex H.Q.	PFT
3.	Tim Kessler, Refuge Manager, GS-11	Crosby WMD	PFT
4.	Karen Smith, Refuge Manager, GS-9	Lostwood NWR	PFT
5.	William West, Refuge Manager, GS-9 Transferred 06/18/88	Des Lacs NWR	PFT
6.	Pete Finley, Refuge Manager, GS-9 EOD 10/23/88	Des Lacs NWR	PFT
7.	Frank Kartch, Refuge Manager, GS-11 (Realty) Resigned 7/30/88	Lostwood WMD	PFT
8.	Dave Gillund, Refuge Manager, GS-5 EOD 11/20/88 (Transferred from GS-6 Bio. Tech/Crosby)	Lostwood WMD	PFT
9.	Molly Hansen, Refuge Assistant, GS-6	Complex H.Q.	PFT
10.	Doris Huwe, Clerk-Typist, GS-4	Complex H.Q.	PPT
11.	Jerry Felch, Heavy Mobile Equipment Mechanic, WG-10	Des Lacs NWR	PFT
12.	Dave Gins, Maintenance Worker, WG-8	Des Lacs NWR	PFT
13.	Toby Placek, Bio. Technician, GS-6 EOD 12/18/88	Crosby WMD	PFT
14.	Lowell Vaage, Maint. Worker, WG-8	Lostwood WMD	PFT

15.	John Stewart, Maint. Worker, WG-8	Lostwood NWR	PFT
16.	Tracy Jones, Biological Aide, GS-5 3/21/88 to 9/30/88	Des Lacs NWR	TFT
17.	Tim Zachmeier, Bio. Aide, GS-3 5/8/88 to 8/24/88	Lostwood WMD	TFT
18.	Steve Hosna, Biological Aide, GS-3 5/8/88 to 8/19/88	Crosby WMD	TFT
19.	Robert Murphy, Bio. Tech. GS-7 3/21/88 to 7/30/88	Lostwood NWR	TFT
20.	Joy Albertson, Bio. Aide, GS-4 3/21/88 to 9/30/88	Lostwood NWR	TFT
21.	Doug Felch, Volunteer, 01/12/88 to 4/10/88, Bio. Aide, GS-3, 04/11/88 to 10/8/88	Des Lacs NWR	TFT
22.	Janet Leet, Clerk, GS-2 3/27/88 to 9/30/88	Crosby WMD	TPT
23.	Scott Zacharias, YCC 6/06/88 to 8/31/88	Lostwood WMD	
24.	Christy Carlsen, YCC 6/6/88 to 7/29/88	Des Lacs NWR	
25.	Julie Lucy, YCC 6/6/88 to 8/12/88	Lostwood NWR	
26.	Jeff Jeglum, YCC 6/6/88 to 7/29/88	Crosby WMD	
27.	Spencer Simon, Volunteer 5/18/88 to 8/10/88	Des Lacs NWR	FT*
28.	Lynn Nehrer, Volunteer 5/14/88 to 8/14/88	Des Lacs NWR	FT*
29.	Mark Koepsal, Volunteer 5/23/88 to 8/14/88	Lostwood WMD	FT*
30.	David Michaelson, Volunteer 5/16/88 to 8/5/88	Lostwood NWR	FT*
31.	Mike Green, Volunteer 5/9/88 to 8/15/88	Lostwood NWR	PT**
32.	Rose Green, Volunteer 5/9/88 to 08/15/88	Lostwood NWR	PT**
33.	Mary Casey, Volunteer 5/25/88 to 07/8/88	Lostwood NWR	PT*
34.	Carin Shoemaker, Volunteer 5/27/88 to 7/9/88	Lostwood NWR	FT*
35.	Brad Jacobs, Volunteer 6/1/88 to 8/31/88	Crosby WMD	PT**

* 40+ hours per week
* * 10-30 hours per week

Personnel Actions, Permanent Employees, Des Lacs Complex

Frank Kartch, Refuge Manager (Realty) GS-11, left in April to accept a Biologist position with Ducks Unlimited, Bismarck. Frank had been the Lostwood WMD manager since 1984 and was on a NTE one year appointment as Refuge Manager (Realty) when he resigned.

Bill West, Refuge Manager GS-09, transferred to the National Bison Range as Assistant Project Leader, GS-11, in June.

Pete Finley transferred in October from the McMinnville, Oregon SCS office where he was Soil Conservationist GS-11 to the Refuge Manager GS-09 at Des Lacs NWR.

Dave Gillund, Biological Technician GS-06, Crosby WMD, transferred to the position of Refuge Manager GS-05, Lostwood WMD in November. At the same time, the office for the latter was moved from the Des Lacs headquarters to the Lostwood Refuge.

Toby Placek, Soil Technician GS-07 with the Bowbells, ND SCS office, transferred to the Biological Technician GS-06 position at Crosby in December.

2. Youth Programs (Des Lacs Complex)

Four YCC enrollees were hired this year. Three were funded with YCC funding while one was funded with station funds. All YCC enrollees were 18 years old, had drivers licenses and were mature, hard working individuals. We feel very fortunate in being able to obtain such high quality help for minimum wages. If funding were available, we would increase this program by several more enrollees.

One YCC enrollee was hired for an eight-week program in the WMD. Scott Zacharias assisted with waterfowl nest searches, bluebird and kestrel box checks, sign replacement, weed control activities and shop maintenance.

4. Volunteer Program

The volunteer program continues to be very successful. Six volunteers worked 40 hours or more per week for 4-12 weeks during the year. Three others worked most of the week for several weeks and two averaged about 10 hours per week.

Most of the volunteers were college students majoring in wildlife management or related fields. Volunteers working 40 hour weeks were given $12 per day per diem, lived in government quarters and, if not local residents, were paid for their travel from home and back. We have received excellent work from our volunteers who helped with fencing and maintenance as well as with biological projects.

We have a policy of trying to select past successful volunteers for paid biological aid positions. This year four of the six temporary positions were filled by persons who served as volunteers in 1987 or 1988. Doug Felch did excellent work as a volunteer mechanic for a couple of months, was hired as an aide for the summer and was later selected by the J. Clark Salyer Refuge for a PFT WG-10 mechanic's position in October.

5. Funding

Operational Funding
Des Lacs Complex

	Base	Misc	Resource Problem	ARMMS & Maint.	Exp. Sales	Qtrs.	YCC	Total
88	372.0	10.0	20.0	209.0	12.0	5.4	4.5	632.9
87	399.0	6.8	40.0	99.0	12.0	5.5	4.5	566.8
86	405.0	-	0	115.1	13.0	6.6	11.4	551.1
85	462.5	-	100.0	56.0	13.0	8.0	11.2	650.7
84	459.0	-	0	64.0	10.0	8.6	10.0	551.6

Other funding that was involved with the budgeting process in 1988 included $15,398 received from fire suppression and pre-suppression funds, $10,487 paid to the Refuge Manager (Realty) position by the Bismarck Wetland Habitat Office, and $1,000 paid by the Bismarck FWE for a cooperative water sampling project.

6. Safety

No lost-time accidents occurred on the Des Lacs NWR Complex in 1988 although four minor injuries were noted. The increased emphasis on fencing this summer was reflected in our injuries. John Stewart injured his back while pulling on old barbed wire to straighten it while it was being rolled. The wire broke, and John fell. A similar accident happened to Tracy Jones when a rolled piece of wire uncoiled and flew back, hitting him below the eye. Scott Zacharias had rust dust fly into his eyes as he threw a roll of used wire into the back of a pickup. Lowell Vaage had a piece of metal hit him in the chest while using a hatchet to notch a support post. All injuries were minor. Prior to the next fencing season, a refuge committee was established to set up guidelines to follow in order to avoid an accident in the future.

All fire extinguishers were checked, recharged and replaced where necessary.

Gutzke, West, Kessler and Smith completed course work and were recertified as Commercial Pesticide applicators.

Gillund completed a CPR course at Glynco, Georgia.

Jerry Felch is a Certified Heavy Equipment Instructor, and he certified the Complex maintenance and management staff on heavy equipment during the year.

A station safety inspection was conducted by the Regional Safety Officer Mike Martinez on July 25-29. Only a few minor problems were discovered, and these were taken care of. As a compliment to the staff, Mr. Martinez stated, "The overall safety and health evaluation was one of the better ones completed this summer. All the employees, YCC and volunteers interviewed showed a real interest in the safety and health environments of their work sites."

F. HABITAT MANAGEMENT

1. General

With the Lostwood WMD manager position vacant for most of the year and extreme drought conditions which caused a lot of stress on the habitat, many habitat manipulation techniques were made impractical.

Chafer WPA had some water in the spring to protect the newly constructed island.

LV 4/88

But by the later summer, the wetland was dry, like most seasonal and semi-permanent wetlands throughout the district.
LV **8/88**

2. Wetlands

The drought conditions played havoc on the wetlands this year. By the end of summer, those wetlands holding water were few and far between. Virtually no spring runoff, coupled with few scattered showers, did little to rejuvenate existing wetlands. Waterfowl production was way down as was any wildlife associated with wetlands. The quality of water that remained was very poor. Reports from ranchers indicated that in some cases the cattle would not drink the water. Some reports of livestock deaths due to poor water conditions were noted in the county.

4. Croplands

N.D.#2 WPA was dry and eroding into the uplands and onto adjacent land.
TWG 5/88

No uplands were open to farming this year due to the poor soil moisture. However, the 330-acre wetland on ND #2 WPA was farmed. This wetland basin became dry in the spring and, with typical high winds in North Dakota, began to blow the soil. Adjacent landowners complained about the windblown soil, and areas of the basin and nearby private land began to have piles of eroded soil appear. Soil samples were taken and were found to contain good soil moisture, so we decided to open the basin up to farming. Two local cooperators planted a millet/small grain mixture. The resulting crop was excellent with an average of 100 bushels of grain per acre. This was cut as forage for cattle and 20% was left standing unharvested in the wetland for wildlife. The farming had many positive effects of stopping the erosion that was taking place, providing winter and next spring food for wildlife, and helping public relations by providing a hay crop to desperate ranchers.

The entire N.D.#2 WPA wetland basin was cropped to eliminate the erosion and provide a hay crop to local cooperators. As the photo shows, the oat/millet crop was lush due to good subsoil moisture.
TWG 7/88

An aerial view of N.D.#2 WPA cropped wetland basin. A good crop of about 100 bushels to the acre oat/millet mix was cut for hay and 20% left for wildlife.
TWG **10/88**

5. Grasslands

Three types of grassland exist on the Lostwood WMD. They are native grassland, reseeded native and tame grassland. All are manipulated with two goals in mind: (1) to provide dense, healthy stands of vegetation for nesting waterfowl and (2) to provide diverse habitat for all wildlife species. Grazing and burning these areas are the two primary management tools that are used to promote plant vitality. Burning was not used at all this year because of the drought, and grazing was limited (see section F.7).

6. Other Habitats - Islands

The 1/2-acre island on the Erickstien WPA, which was constructed in 1987, was riprapped this winter. Over 300 cubic yards of rock was used to protect the island from wind and water erosion.

Construction of another 1/2-acre island on Chafer WPA was completed by a Ducks Unlimited (DU) contractor in February. The contractor removed 1/2-acre of ice from the wetland basin and filled it with 7,400 cubic yards of fill. The island was seeded later in the spring.

This brings the total to eight islands that have been constructed throughout the WMD.

7. Grazing

Five WPAs were grazed in the spring to clean up vegetative litter and reduce competition of brome and Kentucky bluegrass in native portions of the grassland. The crowd grazing technique began April 1, with all livestock removed prior to 1 June.

WPA	County	Acres	AUM
Eckert	Burke	59	39
Nelson	Burke	71	111
Pullen	Mountrail	83	109
Wirtz	Mountrail	75	100
Kjallberg	Mountrail	76	109

8. Haying

Many wetlands that were choked with emergent vegetation were hayed by local cooperators. They were happy to get the hay, and we were delighted to get the areas cleaned up.
LV 8/88

Drought conditions that continued throughout the summer caused hardship to local ranchers. An emergency haying declaration by the Governor resulted in the district opening up many areas for haying. In an attempt to maintain our best cover, only those areas needing haying were hayed. These included old stands of DNC and decadent stands of emergent wetland vegetation.

WPAs HAYED DURING 1988

WPA	County	Wetland Acres	Upland Acres
County Line	Burke	11	0
Hoveland	Mountrail	9	19
Sorenson	Mountrail	14	3
Ball	Mountrail	4	30
Halvorson	Mountrail	2	10
Bloom	Mountrail	0	27
Grinolds	Mountrail	0	14
Grachen	Mountrail	0	20
Blikre	Mountrail	10	0
Cvancara	Mountrail	0	15
Grant	Mountrail	0	20
Kjallberg	Mountrail	18	0
Martinson	Mountrail	0	30
Brekke	Ward	25	0
Rehfeld	Ward	13	0
Erickstein	Ward	0	35
Rehfeld	Ward	0	13
	Total	106	236

Old stands of DNC were hayed by local cooperators who flocked to us for any hay they could get.

LV 8/88

All of the haying cooperators paid a fee for the hay except at Ball, Grachen and Martinson WPAs. Here the farmers deferred payments by twice chiseling and discing the old DNC fields they had hayed to rejuvenate the vegetation.

Haying was also allowed on CRP lands through an ASCS drought program. CRP payments were reduced by 25% for those that chose to hay, unless the hay was donated to another needy landowner, in which case no reduction was made.

Those who hayed CRP units covered by the FWS piggyback were required to limit their haying to no more than 50% of the piggyback acres beginning no earlier than July 1 in order to receive their $5/acre payment. Four landowners in the district forfeited their piggyback payment and hayed the entire acreage.

Overall, under 10% of the district's CRP lands were hayed, apparently significantly less than other areas of the state where 70% or more of the CRP lands were reported as hayed.

9. Fire Management

Due to the drought conditions a ban on burning was in effect state wide for most of the year. Consequently, no prescribed burns were performed in the WMD. Lostwood WMD personnel did assist other Des Lacs Complex personnel on a number of wildfires that did occur during the summer on other Service lands outside of the district.

10. Pest Control

Leafy spurge (Euphorbia esula) is the major pest plant species within the WMD. This noxious weed has been prevalent on the district for years and we have been able to control it through close monitoring and spraying with picloram during spring and fall. We have not been able to eliminate the pest, but we have been able to confine it and stop its spread. This year as we acquired the Moen WPA we also acquired a good stand of leafy spurge. The total acreage within the WMD was only about eight acres on scattered tracts. The Moen WPA more than doubled or spurge problem by contributing at least ten acres. Measures were taken to begin treatment of Moen WPA with the hope of limiting its spread.

WPA	County	Acres Sprayed
Chafer	Mountrail	>1
Cvancara	Mountrail	1
Grinolds	Ward	2
Johnson, N.	Mountrail	1
Lundt	Mountrail	1
Moen	Mountrail	10
O'Rourke	Burke	>1
Svenningson	Mountrail	>1

13. WPA Easement Monitoring

Easement compliance flights were conducted in April; no violations were noted. This portion of North Dakota has never had an excessive drainage problem due in part to the topography; and being in a semi-arid area many wetlands are maintained for the hay crop in poor water years. With the implementation of the Swampbuster provisions of the 1985 Food Securities Act, it seems there will be even less drainage.

Due to falling oil prices, a significant reduction in oil-related activity took place in 1988. Still several visits were made across the district to check oil well sites on easement areas. In all cases the oil drilling companies were agreeable to move sites to avoid wetlands.

G. WILDLIFE

2. Endangered and Threatened Species

Bald and golden eagles are frequently observed on the district during the late fall and early winter. Most of these birds are migrating through the area and stop to feed on ducks and geese that have been wounded and lost by hunters.

Piping plovers nest at various locations on a number of WPAs, although numbers were reduced this year due to drought conditions.

3. Waterfowl

a. Geese

The spring migration of Canada geese followed the mild weather as three birds returned on February 28th. Canadas are typically one of the earlier arrivals, but this was one of the earliest date recorded. The peak migration of other Canada geese, as well as white-fronted geese, occurred during mid- to late March.

An estimated 300 giant Canada geese were present on the district by late summer. The southward migration of other Canadas began in late September. An average of 1500-2000 Canadas were present in the district from early October through early December with a peak of nearly 5000. No Canada geese were observed during the Christmas Bird Count of December 19th.

Giant Canada geese had a poor nesting year in 1988. Out of 81 nesting bales available to geese, 19 were used; and only seven were successful. Low usage and poor production were attributed to the drought and low water in most wetlands. Most failed nests resulted from mammalian predation. These resulted from nest initiation in a wetland with water which later became very shallow or dry. Many other locations that have traditionally had nesting

geese did not have birds due to dry wetlands. An estimated 32 goslings were produced on WPAs within the district.

Snow geese were observed only in small numbers during the spring migration, although sizeable flocks were seen passing through the area at high altitudes. The peak migration in the district occurred in early April of 1988.

A good population of snow geese utilized the district during the fall. Because most wetlands were dry, their numbers were lower than past years. But many geese that roosted at Des Lacs NWR fed extensively in the WMD.
TWG 11/88

Fall use by snow geese has changed dramatically over the past twenty years. They have extended their migrational corridor to include most of northern North Dakota from the Devils Lake area west to the Montana border. Snows were present in good numbers in the fall but not in as large a concentration as past years.

Although most wetlands were dry, those large areas that held water had snow goose use. Chafer, Halvorson, and Martinson WPAs held a total of 1000 snow geese during the fall at various times. The fall migration began on September 19th and was in full swing by early October. The birds stayed in the area until early November when they began to move out and, by the 15th, were completely gone.

b. Ducks

Production estimates for ducks in 1988 were done by the Northern Prairie Wildlife Research Center "4 square mile" pair survey. This was to provide us with a more accurate survey for the district than the previous "quarter section pair count" survey method. However, due to problems in getting the new system up and running the district did not get adequate representative samples. Consequently, production estimates are available for private and easement lands, but not for Service lands Table .

ESTIMATED WATERFOWL PRODUCTION FOR WPAs-1988 LOSTWOOD WMD

Species	1988	1987	1986	1985	1984	1983	1982	1981	1980
Mallard	490	874	313	878	946	1200	1113	1220	1500
Gadwall	594	723	916	1122	737	1300	1323	700	1500
N. Pintail	+	224	100	191	120	250	263	100	300
G-W Teal	+	70	50	59	84	60	60	24	150
B-W Teal	101	376	1888	1333	1136	1100	1167	720	800
Am. Wigeon	181	486	103	420	767	550	576	380	600
N. Shoveler	+	345	244	369	299	750	786	100	175
Redhead	+	50	103	50	18	30	29	48	75
Canvasback	18	38	86	20	49	10	0	2	100
L. Scaup	11	411	919	739	259	175	155	530	100
Total	1395	3644	4868	5235	4345	5465	5502	3864	5305

1980-1986 estimates based on acre to acre ratio with Lostwood NWR, 1987-1988 estimates based on four square mile pair counts from Crosby WMD.

4. Marsh and Water Birds

Due to the extremely dry conditions, very limited use and production of most water birds occurred in the district in 1988.

6. Raptors

All raptor species common to the prairies of North Dakota are found within the district. The most common nesting species include red-tailed and Swainson's hawks, northern harriers, American kestrel and great-horned owls. During the fall, bald and golden eagles, ferruginous, rough-legged and Cooper's hawks as well prairie falcons are commonly observed.

7. Other Migratory Birds

The Des Lacs Christmas Bird Count encompasses parts of the district, and is completed each year in conjunction with the National Audubon Society. Only five observers were available this year to cover the sample area. A total of 17 species and 725 individual birds were reported. No unusual species were sighted.

8. Game Mammals

Although numbers are not available, a good population of white-tailed deer exists in the district. Many WPA's are traditional hunting areas for numerous hunters. Success rate for hunters in this portion of the state usually runs 70 to 80%.

Pronghorn are common on the district and their numbers seem to be increasing. Currently only bow hunting is allowed, and very few are taken.

10. Other Resident Wildlife

Sharp-tailed grouse populations remained very high this year with record numbers recorded at numerous locations. However production was very poor this year. Many nests were initiated, and many young were hatched. But the drought and high temperatures had a devastating effect on nest and fledgling survival. During the hunting season, few young birds were found; and overall grouse hunting was poor.

Gray partridge were also at unusually high numbers. The district averaged 6-8 coveys per square mile in optimum habitat. The birds were also plentiful during the hunting season and did not seem to be badly affected by the drought conditions.

H. PUBLIC USE

7. Other Interpretive Programs

Several programs were presented to hunter safety students, local clubs and organizations, and Boy Scouts during the year.

News releases concerning whooping crane migrations, nesting bale and structure programs, waterfowl migration, hunting seasons and artificial island nesting were provided to local newspapers.

8. Hunting

Hunting for gray partridge was good throughout the season. Few young sharp-tailed grouse survived the dry summer conditions and bagging the adults proved difficult for hunters. The upland bird seasons were delayed by the governor in northwestern North Dakota due to the extremely dry conditions.

Waterfowl hunting in the district was very poor since very few birds were present. Shell Lake held small numbers of snow, Canada, and white-fronted geese which provided limited hunting opportunities early in the season. Thereafter waterfowl hunting was limited primarily to field hunting snow geese which were using Des Lacs NWR and feeding in northern Mountrail and Ward Counties.

Deer hunting permits in northwest North Dakota were reduced significantly following the EHD disease problems which occurred in 1987. Although fairly good numbers of deer were present throughout the district, hunting pressure was very light due to the small number of permits in the large hunting unit.

17. Law Enforcement

Law enforcement was done primarily on weekends during the hunting season. No violations were issued this year.

I. EQUIPMENT AND FACILITIES

1. New Construction

Mark, Scott and Tim spent long hours fencing Eckert WPA.
TWG 7/88

Eckert WPA was fenced during the summer with three strands of barbed wire. This project had been on line to complete for the past five years, but time was always lacking. This year it was a priority project, and we made sure it was done.

The project consisted of five miles of fence and was headed up by Biological Aide Tim Zachmeier with maintenancemen, YCC and volunteers as crew. Completion took a while to complete with summer tempertures in the 90-100 range, and the rocky terrain of the coteau. But by August, the project was complete and everyone stood back to look at a job well done.

This feeling only lasted a day or so when the U.S. Air Force arrived and tore up a section of the fence to repair a missle cable. It looked bad for a while but they finally restored the fence to an almost new condition.

Once the fence was complete, the U. S. Air Force cut and dug up some of it to repair a missile cable.
LV 8/88

But they did restore the fence to next-to-new condition.
LV 8/88

2. Rehabilitation

A few days' work was necessary to repair an access road near the Moen WPA.
LV **7/88**

The final product, an easily accessible road.
LV 8/88

An access road near the Moen WPA was regraveled to alleviate wet spots that had caused problems with travel during normal precipitation years. With the drought conditions, the repair of the road was easy in hope that the wet springs may return one day.

Lowell and Bio Aide Tim Zachmeier erected two large wooden signs on Halvorson and Kjallberg WPAs, which are near heavily traveled roads. Smaller metal signs were installed at a number of WPAs which are off the main roads and not seen daily by the public. This provides a name for these lands which helps the local residents to determine who owns the land, rather than the normal response we get like "you know that government land over there."

Lowell with a larger entrance-type sign installed on WPAs near major roads.
TZ **8/88**

The small 2'x3' brown and white signs were installed on numerous WPAs with moderate access.

LV 8/88

4. Equipment Utilization and Replacement

A new 3/4-ton Dodge 4x4 pickup arrived in March and was assigned to Lowell to replace the old 1981 Dodge 4x4.

LOWELL'S NEW PICKUP.

TWG 11/88

J. OTHER ITEMS

1. Cooperative Programs

Information on bird sightings was provided to the Northern Great Plains Report. Upland game bird brood sightings as well as grouse lek data was provided to ND Game and Fish Department.

Fire index percent of green reporting was done for the National Weather Service during the summer months.

3. Items of Interest

With the transfer of the Des Lacs NWR manager and the Lostwood WMD manager's resignation, the duties of the stations were assigned to Assistant Project Leader Gutzke. Getting a lot accomplished with no professional manpower and attempting to execute three positions at once had its limitations. Consequently the brevity of this report belays the 1988

situation.

4. Credits

The following are credited with writing this report:

Del Pierce wrote sections E-1 and E-5 and Dave Gillund wrote sections C, D, F and K. The remainder of the narrative was completed by Tedd Gutzke.

Assembly was done by Molly Hansen and Edie Goettle.

K. FEEDBACK

Having recently changed positions, I was involved with the Service's "Guarantee Home Sale" program. Because of the recent poor economy in the town that I lived in, my chances of selling my home by myself were slim. I was eager to participate in the home buy out program. After filling out numerous forms and many phone calls, the process slowly started. I was fully aware of the decline in property values in town but nearly fell over when the appraised values were sent back to me. I lived in Crosby for only four years; thankfully I moved when I did. If I would have lived there for another year, I would probably had to pay Home Equity to take my home. My original purchase price, plus my home improvement costs, yielded me a whopping 1/5 of the total price invested. The whole process was slow, tedious, and time consuming. The guaranteed home sale looks and sounds good; but in my actuality, the experience was costly.

On a better note, the experience of starting out on a new job is exciting. Meeting new people, seeing new country, and discovering new top priority deadlines, all keep work on a positive, upswing beat. Lostwood WMD has a lot of potential. With the recent acquisition of several new fee tracts, our work schedule is full. The familiar song "Shortage of People Power" is heard around here, but I couldn't think of a better place to be swamped with work.

REVIEW AND APPROVALS

SHELL LAKE NATIONAL WILDLIFE REFUGE

Kenmare, North Dakota

ANNUAL NARRATIVE REPORT

Calendar Year 1988

David Gilland 3/26/90 4/1/90

Refuge Manager Date Project Leader Date

Refuge Supervisor Review Date

Regional Office Approval Date

TABLE OF CONTENTS

INTRODUCTION

The Shell Lake National Wildlife Refuge is located in the southeast corner of Mountrail County, North Dakota. Acquisition began in 1958. The refuge is 710.2 acres owned in fee title and 1,124.9 acres in flowage and wildlife protection easements.

Fee title acreage includes approximately 334 acres of native grassland, 197 acres of reseeded native grasses, and 179 acres of dense nesting cover (DNC). The main body of water is a Class V wetland with brackish to sub-saline water chemistry. Shell Creek flows into Shell Lake from the north and leaves the wetland on the south, eventually draining into the Van Hook arm of Lake Sakakawea.

Watershed data:

Lake surface area:	533 acres
Drainage basin area:	41 square miles
Annual evaporation:	35 inches (2.92) feet
Average annual precipitation:	13 inches
2-year runoff:	15.6 AF/sq mi (USGS gauge 9633222520)

A. HIGHLIGHTS

Spring counts of waterfowl at the Shell Lake NWR on March 31, 1988 are as follows:

3,500 Canada geese, mostly lessers

200 Snow geese

1,000 Pintails and Mallards

North Dakota Governor Sinner approved the FWS purchase of the 310-acre Oscar Moen tract. This WPA lies adjacent to the south end of the Shell Lake NWR.

Approximately 600 acres of grassland were burned, caused by a garbage fire on private land. An additional 1900 acres of private land also burned.

One week was spent graveling and riprapping a portion of a public road along the west side of Shell Lake. Cost and time were split between the refuge and the township.

B. CLIMATIC CONDITIONS

Table 1. Climatic Conditions, 1988*

	Temperatures				
	Max	Min	Snowfall	Precip	Average
January	44	-24	9.8	0.74	0.46
February	61	-31	0.8	0.07	0.45
March	66	-3	7.5	0.87	0.68
April	83	13	---	0.19	1.16
May	97	30	---	1.95	1.99
June	103	47	---	1.88	3.27
July	105	45	---	1.97	2.16
August	103	33	---	0.11	1.86
September	85	35	---	1.57	1.59
October	83	6	---	.19	.92
November	65	-7	4.0	1.06	.53
December	49	-23	8.8	.84	.49
Totals				11.44	15.56

* - recorded at the Des Lacs NWR Weather Station

F. HABITAT MANAGEMENT

1. General

Shell Lake is an unmanned refuge and is a unit of the Des Lacs NWR Complex. Until October 1, 1983, the refuge was the direct responsibility of the Lostwood NWR manager. With the splitting of the Lostwood WMD from the Lostwood NWR, direct responsibility has been reassigned to the Lostwood WMD Manager.

Shell Lake is a broad, flat and shallow basin. Average summer depth is 3 feet. The lake is fed from the north by overflow from another lake (also called Shell Lake), springs, and spring runoff. Any overflow from the refuge runs down Shell Creek south to Lake Sakakawea. No water control structure exists at Shell Lake NWR.

4. Croplands

A welcomed change is showing up in the Shell Lake area. Interest in the Conservation Reserve Program is blossoming. Historically, the rolling hills surrounding the region have been plowed up in an attempt to be farmed. This has resulted in severe soil erosion in the area. More land is continually being put back into grassland throughout the area.

5. Grasslands

The Shell Lake NWR is managed for migratory birds and other wildlife species. Upland cover includes native grasslands, reseeded natives, and cover plantings of DNC. Since the 1950s, the only upland treatment has been fall trespass grazing on introduced grasses and DNC plantings. Infrequent prescribed burning will be needed to clean up accumulated litter and encourage seed production. The management objective is to establish good cover stands on all upland sites, thus doing away with the cultivator.

7. Grazing

No grazing was allowed on the Shell Lake NWR in 1988.

9. Fire Management

A burning ban set by the North Dakota Governor in the spring of 1988 negated any burn plans.

10. Pest Control

Leafy spurge has been present on the east and southwest sides of the Shell Lake NWR for many years. Spring and fall treatments have nearly eliminated

spurge on the east side and reduced its area by 80% on the southwest side.

G. Wildlife

10. Other Resident Wildlife

The Shell Lake NWR has a good population of sharp-tailed grouse. This population increases in the fall due to hunting pressures outside the refuge and the harvesting of grain and row crops. Two known dancing grounds have been observed.

White-tailed deer numbers are always high on the fee land portion of the refuge, especially during the winter months.

11. Fisheries Resources

Carp and northern pike enter the refuge from Shell Creek on the south end of the refuge. Both of these species of fish make annual spring "runs" up Shell Creek from Lake Sakakawea. No netting or evaluations of fish populations were conducted this year.

H. Public Use

1. General

The Shell Lake NWR has no ongoing public use activities including the fall hunting seasons. Waterfowl hunting pressure is high along the perimeter of the refuge during the peak of fall migration.

17. Law Enforcement

The refuge is an easy target for trespass violations. This is due to the isolated location and thinly spread law enforcement staff.

Cattle trespass occurred once during the summer. The owner was notified, and promptly removed his livestock.

An early December visit to the refuge showed evidence of minnow seining on the lake. A snow storm prevented access to the lake, preventing further trespass or investigation.

No citations were issued during law enforcement patrol on the refuge. Only a small interest was shown in the area during waterfowl season. Several deer hunters were checked around the refuge, but no one was caught jumping the fence.

J. OTHER ITEMS

4. Credits

The narrative was written by David Gillund. Final editing was done by Tedd Gutzke. Assembly and typing was completed by Molly Hansen and Edith Goettle.