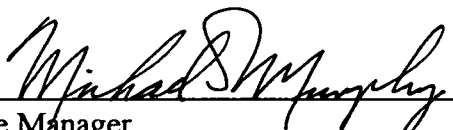

HAMDEN SLOUGH NATIONAL WILDLIFE REFUGE
AUDUBON, MINNESOTA

ANNUAL NARRATIVE REPORT
FISCAL YEAR 1997



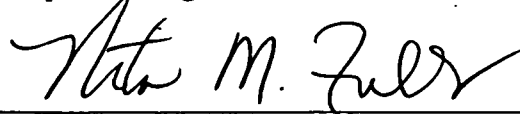
Refuge Manager

3/31/98
Date



Complex Manager

4/1/98
Date



Assistant Regional Director, GEO 3

4/15/98
Date

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INTRODUCTION

On September 19, 1989, the Migratory Bird Conservation Commission approved Hamden Slough National Wildlife Refuge as the 452nd refuge. The establishment of the refuge ended four separate efforts by two agencies over a 50 year period to protect the area. The last effort by the Service spanned almost six years. The purpose of the refuge is to increase duck production and restore prairie wetland ecosystems and diversity. When completed the refuge is designed to produce nearly 10,000 waterfowl annually.

The refuge is located in northwestern Minnesota, in Becker County, north of Audubon, MN. The area is a transition zone between the flat, tall grass prairie on the west and north, and a rolling hardwood forest - lake region on the east and south. The primary economic base for the area around the refuge is agriculture, with a strong tourism industry just to the south and east. The prairie upland, almost all of the prairie wetlands, and some of the timberland have been converted to cropland. During the last 30 years, almost 100% of the Type I, III, and IV wetlands have been drained in Becker County.

Hamden Slough NWR was one of the first refuges designed with the Mallard Management Model to predict duck production potential. Land use models were incorporated into management alternatives which varied amounts and combinations of wetland and cover types. After the alternatives were considered, a non-traditional acquisition with a mix of leased property was recommended. As planned, the refuge will include the following:

Inside Refuge

- 5944 acres in fee title on 35 tracts, with:
 - 275 restored or enhanced wetlands totalling 3000 acres.
 - 2250 acres of restored upland for nesting.
 - 500 acres of cropland for wildlife depredation alternatives.

Adjacent to Refuge

- 2600 acres of leased private property, with:
 - 400 acres of restored or protected wetland.
 - 2200 acres of alternative farming practices or seeded cropland.

Total funding to acquire and fully develop the refuge, buildings, impoundments, water control structures, facilities, and all equipment is expected to be near \$10,000,000. Approximately 15-20 years of work is anticipated to have the refuge near completion.

HAMDEN SLOUGH NATIONAL WILDLIFE REFUGE BECKER COUNTY, MINNESOTA

UNITED STATES
DEPARTMENT OF THE INTERIOR

96°00'00" R. 42 W.

95°55'00"

R. 41 W.

47°00'00"

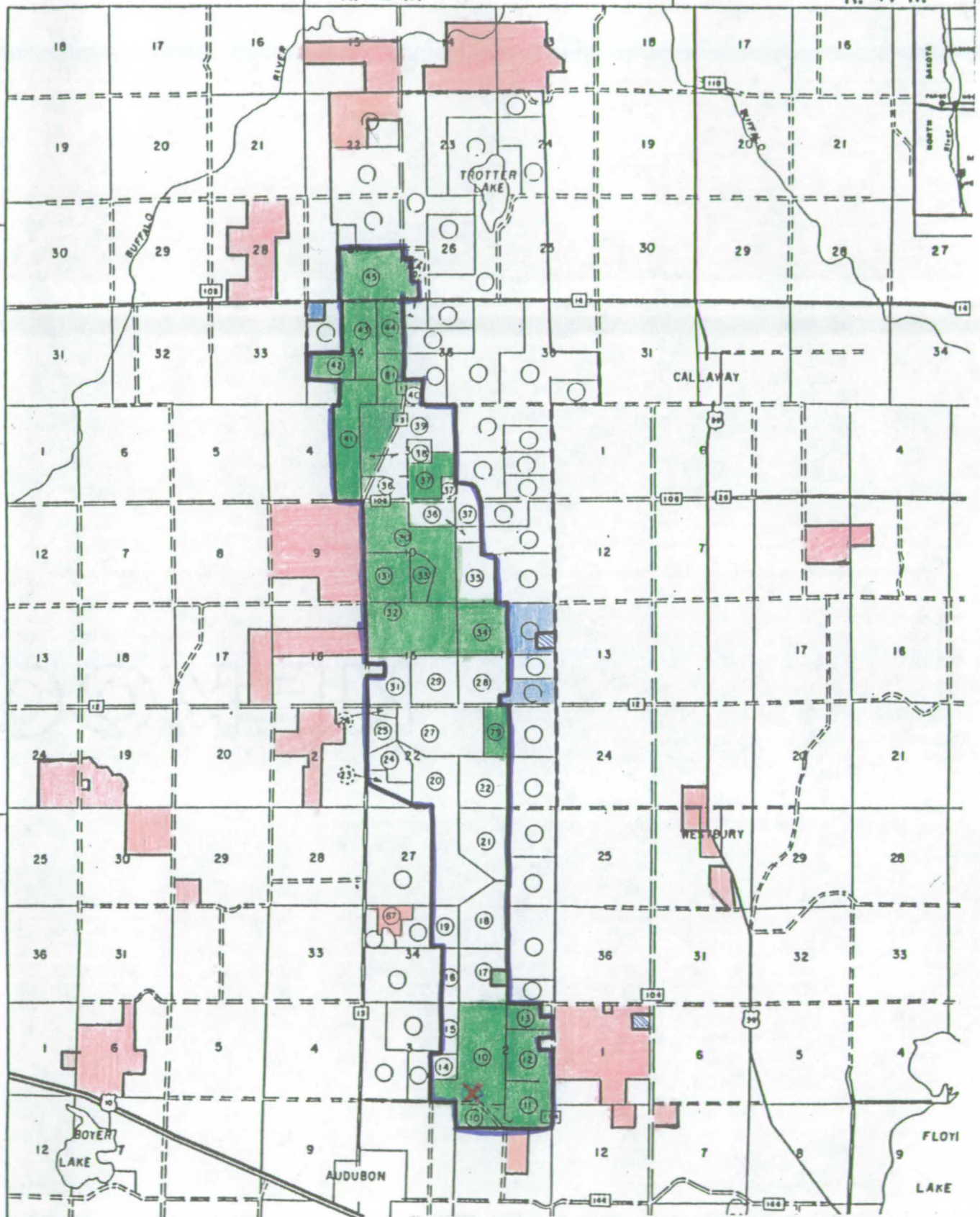
T. 141 N.

T. 140 N.

46°55'00"

T. 140 N.

T. 139 N.



REFUGE BOUNDARY

FEE TITLE

FEE TITLE TRADED (1996)

FEE TITLE - AVAILABLE FOR
TRADE

OFFICE HEADQUARTERS

WPA

LEASE AUTHORIZED

HIGHLIGHTS

- 100th wetland restored on the refuge. (2.a)
- First bird list published. (7.a)
- First confirmed nesting of canvasback ducks. (1.a)
- First confirmed nesting of upland birds in seeded native grasses. (1.a)
- Refuge participates in Detroit Lake's first Birding Festival. (7.a)
- Flood water storage provided as requested by the Buffalo-Red River Watershed District, during historic 500 year flood. (3.a)
- North Star 2000 project to restore 220 wetlands planned and mapped. (3.a, 5.a)



#97-3-23A. This is not a posed shot. Refuge Manager digging to find water control structure under 10' of snow. (MAH - 3/97)

CLIMATIC DATA

Weather conditions for FY97 were wet and cold, with record breaking lows common. Field activity was restricted by a wet spring and record flood, but a warm June allowed field work to catch up. The average temperature for the year was 35.8°F or 6.3°F below normal. A total of 30.1" of precipitation occurred, which is much above normal.

Quarterly summaries are as follows:

October-December. Cold and wet conditions persisted, suggesting a very severe winter. Limited soybean and corn harvesting done during a wet October, with a "last ditch" harvest attempted in early November. **November was the snowiest of the century.** Large acreages of corn left unharvested, but of later benefit to wildlife. Small wetlands iced over on November 2. 1000 - 2000 ducks and geese maintained an open water area on Homstad Lake, next to the office, until the first blizzard on November 16-17. Many flights of geese were seen moving high and fast in bitter, north winds, during a second storm on November 20. A total of 47.0" of snow was received during the quarter. Normally 16" of snow is received from October through December.

January - March. Record smashing snow and cold. The most severe winter, topped off with the **deepest snow ever recorded in Minnesota - 116"**. A total of 12 blizzards and winter storms declared by the National Weather Service (NWS) between November 16 and March 16. Interstates, U.S. Highway 10, state and county roads closed during 9 storms. Audubon Township couldn't keep up with snow on their west road to the refuge office, and closed it from January - March. Deer and upland bird populations under heavy stress, for a second successive, record winter. Emergency feeding by DNR suspended because of heavy, animal impassable snow, north and east of Detroit Lakes. The first waterfowl, Canada geese, were seen relatively late, on March 20. Wetlands only began opening up during the last week of the quarter.

April - June. Record snowfall turned into the worst floods in history. Water levels in the **Red River valley communities approached or exceeded the 500 year flood event.** In the middle of the flood, an ice storm knocked out TV towers, power to 10,000's of people, and NWS recording equipment. April and May were cold, and inundated farm land didn't begin drying out until mid-May. Area deer and upland bird populations were estimated to have 25% - 50% mortality. Many cold water waterfowl species remained on the refuge for most of April. Exceptional displays of courting by goldeneyes. An unusual event. Coop farming activity restricted, but got a excellent start during a record warm June.

July - September. July was cool with record cold days. August and September were relatively warm and dry. Wetlands maintained good water and kept waterfowl dispersed. Extensive ditching maintenance done on private land, during the fall.

CLIMATOLOGICAL DATA - FY97							
Month	Max.	Min.	Avg.	30 Yr Norm	Prec.	(Snow)	40 Yr Norm
October	76	11	42.7	-0.4	2.98	(Trace)	1.25
November*	54	-18	26.2	-10.4	2.38	(24.6")***	0.76
December **	31	-29	6.7	- 5.7	1.39	(22.4")	0.75
January**	34	-41	-5.9	- 7.2	1.79	(28.5")***	0.63
February	36	-43	9.0	- 3.2	0.46	(6.6")	0.56
March**	45	-23	22.6	- 5.9	1.76	(26.5")***	0.89
April**	68	5	40.0	- 5.3	3.15	(7.4")****	2.17
May	81	24	53.2	- 3.2	2.91	(Trace)	2.70
June	91	42	65.5	+ 3.3	5.89		4.34
July**	94	41	69.5	- 1.9	3.72		3.69
August	88	42	66.8	+ 2.0	2.09		3.87
September	89	35	54.8	+ 1.4	1.58		2.33
TOTAL			42.1		30.10		23.94

* Snowiest November of the century, with record setting cold

** Record low temperatures

*** Record monthly snowfall

**** A record 116" of snow fell during the 96'- 97' winter, smashing the old 93'-94' record of 89.1"



#97-1-4. Refuge, wildlife and everything else buried by record snowfall.
(MTM - 3/97)

1 - MONITORING AND STUDIES

1a. Surveys and Censuses

Significant general wildlife occurrences at Hamden Slough NWR in FY97 include:

- First confirmed nesting of canvasback ducks.
- First confirmed nesting of upland birds, including bobolinks in seeded native grasses, around South Wetland.
- Three golden eagles feeding on Homstad Lake in October. Eagle and hawk feeding activity increased significantly, during 1996 & 1997 waterfowl migrations. From 1000 - 4000 American coots provided an attractive food source. Four rough-legged hawks feeding in Hamden Lake on April 1, generated some excitement with local birding and conservation clubs.
- A record 16 species of shorebirds were observed in 1997. Lesser yellowlegs probably were nesting in mid-summer.
- 11 trumpeter swans, including 3 immature, were resting on Homstad Lake in late October.
- Black terns were observed almost daily during the spring and summer. Nesting may be occurring.



#97-17-17.

Thousands of waterfowl using drained Bisson Lake during
a wet fall. (MTM 11/97)

1997's peak spring waterfowl migration, particularly divers, was about ½ of the previous years' spectacular and extended display, caused by 1996's very cold April - May weather pattern. This year's relatively warmer spring and record 10 feet of snow, caused historic, near 500 year level flooding. Every depression for 100 miles was full, and the waterfowl dispersed.

1b. Studies and Investigations

Seepage analysis of the potential Bisson Lake restoration was continued this year. Several landowners near the north end of the refuge have inquired about seepage as a potential problem. Buffalo-Red River Watershed District (BRRWD) will be reluctant to approve permits for the restoration of 130 wetlands, totalling 200 acres in such a flat area, without a review of seepage potential to adjacent private land. Both the BRRWD and the Red River Water Management Board entered as partners and contributed \$7,600 each towards the analysis. A Service Challenge Grant for \$6000 was awarded for FY97 for this partnership analysis. The study will cost \$22,500 and is conducted by Dr. Jim Richardson, Soil Science Dept., North Dakota State University (NDSU). His preliminary review titled: "Geomorphology of Bisson Lake" was put on the internet by NDSU. The results of this study will be usable for future major restorations on the refuge, and possibly other areas of Minnesota.



#97-2-15. Flood Mitigation Survey conducted to counter a Red River Water Management Board suggestion that wetlands aggravate flooding.

(MTM 3/97)

The refuge participated in a Flood Mitigation Survey with the Minnesota Department of Natural Resources (DNR). The survey was prompted by the Red River Water Management Board, which suggested in an Environmental Impact Statement review of flood control structures, that wetland restorations foster additional flooding. DNR Biologists Karen Terry and Shawn Johnson and Refuge Manager Mike Murphy began measuring snow depths and shooting ice and ditch plug levels on older, restored refuge wetlands in March. The wetland sites, randomly selected by computer, were resurveyed in May, to determine the additional water capacity that had been held, actually helping to reduce downstream flooding.

Marbled godwits and willets were commonly seen in the Hamden Lake area. Shorebirds common to the area include killdeer, upland plover (sandpiper), spotted and pectoral sandpiper, Wilson's phalarope, greater yellowlegs, and common snipe.



#97-9A-10.

BT Henkenius supervising frog collection with SpringHill/CEP crew. (DF 7/97)

Spring and mid-summer frog surveys were conducted on refuge wetlands with volunteer assistance.

2 - HABITAT RESTORATION

2a. Wetland restoration

One 27 acre wetland was restored adjacent to Hamden Lake in FY97. An additional 66 wetlands, including 55 around Bisson Lake, were surveyed, and designs drawn for permit applications. Two permits were approved by the Buffalo-Red River Watershed District, for the first 29 of those wetlands. The construction contractor arrived on September 30, 1997.



#97-18-0

AT Hendrickson serves as rod for wetland surveys, required for permit.
Hat used for high visibility at long distances. (MTM 11/97)

Planning, mapping and partners were organized for a restoration project titled: North Star 2000. The project will restore 220 wetlands and 965 upland acres in the Bisson Lake area. Total project costs are estimated at \$370,000. A \$10,000 challenge from DU to restore the first 65 wetlands in the North Star area, was made to the Service for FY98. Kick-off for North Star construction began with the restoration of the refuge's 100th wetland, on October 1, 1997. (5.a)



#97-15C-20. Restoration of 100th wetland on refuge. (JS 10/97)

Berm work on County Road #104 through the Hass Wetland was completed by a Ducks Unlimited contractor. The road was inspected and approved by the County Engineer as per the 1994 County/Refuge Construction Agreement with Becker County. Refuge/DU partnership funding was used to complete the road improvement.

Thirty-seven wetlands restored in September, 1996, were holding 6"- 8" of water, by the November 1996 freeze up.

2b. Upland restoration: On-refuge

A total of 76 acres around Bisson Lake were seeded with native grass in June. All seeding was in soybean stubble. An additional 40 acres was reseeded, around the office, after a failure of the 1996 seeding. Native wildflowers are spreading from older, remnant native prairie sites, and we hope small select seeded sites will duplicate the process on other parts of the refuge. Expensive wildflower seed (\$175/lb.) was purchased in 1996, from a commercial source to increase plant diversify, and was broadcast at five 0.25 acre sites.

3 - HABITAT MANAGEMENT

3a. Water level management



#97-3-10. The refuge didn't so much manage the water, as the water managed us.
(MTM 4/97)

During historic, 500 year flood events in the Red River Valley, the refuge was asked to assist with flood efforts by storing additional water in it's wetlands. The Buffalo-Red River Watershed District (BRRWD) requested on April 2, that additional water be stored to reduce the expected flood peak at Hawley, Minnesota. Stoplogs were immediately installed to Full Service Level (FSL) in 5 existing water control structures, holding an additional 400 acre feet of water on the refuge. With continuing snow melt, wetlands quickly exceeded their FSL, pushing water levels to near emergency spillways elevations. At that point, the estimated storage was 1000 acre feet, over and above beginning pool levels. The media picked up the story, giving the refuge some very positive press on flood control & watershed management.



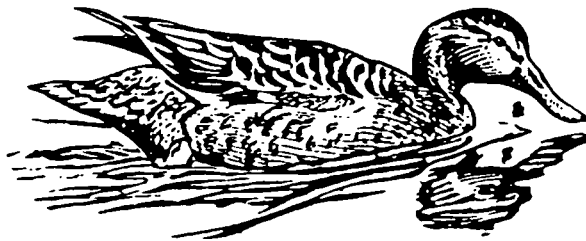
#97-4-7. AT Hendrickson checking flood water contained inside refuge.
(MTM 4/97)

Before Vice President Al Gore visited the Red River flooding area on April 11, 7th District Congressman Collin Peterson's office requested a briefing on wetland restoration. The refuge developed a two page brief of "bullet" statements on the benefit of wetlands. In earlier comments to the press, Congressman Peterson stated that wetlands and environmentalists were causing part of the flooding problem. (1.b)

Hamden Slough National Wildlife Refuge is participating in a Flood Mitigation Survey with the Minnesota Department of Natural Resources (DNR). The survey was prompted by the Red River Water Management Board, which suggested in an Environmental Impact Statement review of flood control structures that wetland restorations foster additional flooding. To arrest that belief, DNR Biologists Karen Terry and Shawn Johnson and Refuge Manager Mike Murphy checked the storage potential of restored wetlands, by measuring snow depths and shooting ice and ditch plug levels on older, restored refuge wetlands, in March. The wetland sites, randomly selected by computer, were resurveyed in May to determine the additional water capacity that was held, helping to reduce downstream flooding.

In July, RM Murphy was a guest of the BRRWD, for a tour of water projects in Clay and Becker Counties. Commissioners from 5 counties, members of the Red River Water Management Board, and other interested agencies, were invited to tour and reviewed flood control and drainage projects. After the historic flooding of 1997's spring, interest was high and tour buses full.

In July, DU representatives Andy Anderson (past MN. DU President), Roger Sinner & John Pilgrim, along with Complex Supervisor Rollin Siegfried, toured Bisson Lake & Hamden Lake to review restoration projects.



3b. Moist soil management

A 1996 fall drawdown on the Hesby Wetland was continued. Vegetation began responding in June, as did a dense mat of algae. The 6 wheel ATV and a log wrapped with chain, were used to break up the mat, exposing underlying soil. The wetland had been drained in 1926, cropped, pastured, and abandoned. Left alone, it developed a very dense stand of canary reed grass. After 2 years of flooding to remove the canary reed grass, refuge personnel weren't sure if any or what type of aquatic vegetation would respond. Enough duck potato and smart weed appeared to be encouraging. The wetland was partially flooded with a few inches of water to coincide with the fall shorebird migration. Five American pipits were seen in the area.



#97-10-24. BT Henkenius dragging chain log to break up algae mat.
(MAH 7/97)

3c. Graze/mow/hay

Two grazing permits were issued in 1997. One was to compensate for the grass loss of an adjacent landowner, who provided a free wetland easement and had 3 acres of his pasture flooded by the South Wetland. The second permittee provided fencing labor and mowed the pasture for weed control.

A grazing permit also allows the Service to demonstrate to local landowners that different management techniques can be used within the refuge boundary. Grazing cooperators usually own land within and/or adjacent to the refuge designated boundary and are interested in working with the Service.

3d. Farming

Cooperative farmers got a late start, but completed their small grain seeding and summer weed control. Moist soil and a cold spring, made normal seeding difficult, until June. Then conditions quickly improved. Small grain quality was generally good, and relatively free of disease. Most of the farmers were satisfied with the harvest. Fall mallards and geese hit nearby harvested fields hard. Geese and ducks also clobbered partially harvested corn adjacent to Homstad Lake. Surprisingly, not one complaint was received. The second Special Goose Season for northern Minnesota, September 9-16, heartened most landowners with early hunting or leasing opportunities.

Farming was authorized on 6 tracts totalling 684 acres through the cash rent program. Special Use Permits (SUP) for cash rent were issued to prepare crop land for grass seedings in 1998 and 1999. A total of 76 acres of former cropland was seeded with native grass in 1997. The SUP's rent is reduced, if a food plot is maintained on the farmed tract.



1997 FARM SUMMARY

Cooperator	Tract	AC	Fee	Crop	Permit Dates
J. Hass	#10	84	\$25	barley/bean	1996-98
J. Hass	#11	65	\$25	corn/grain	1996-98
J. Matter	#41	133	\$25	small grain	1996-98
J. Flottemesch	#43	102	\$25	soybean/corn	1995-97
J. Steffl	#34	170	\$25	soybean	1997
B. Zurn	#43	130	\$25	corn/grain	1995-97

Cash rent rates are determined with information provided by the USDA Natural Resources Conservation Service, the Farm Services Agency, and county extension agents. Rental rates are typically well toward the low end of the local private rental scale, due to lowland soil types.

3e. Forest cutting - No activity this year.

3f. Fire Management

A third year of prescribed burnings was conducted on the refuge. Six burns were completed on 199 acres. This included a burn on one native prairie remnant. A ornate diversity of native wildflowers species appeared on the native parcel by July.

RM Murphy and AT Hendrickson assisted Tamarac NWR with a burn to expand their fire experience in wooded habitats.

3g. Pest plant control

In July, the refuge crew mowed seeded native grass to control Canada and plumeless thistle, as well as shading by dense pigeon grass. After only 120 acres, a spirally number of repairs on the surplus Mott mower ended force account mowing. Two contractors were hired and completed an additional 140 acres of weed control. 100's of acres of pasture, in drained Hamden Lake bottom, did not need to be controlled this year, due to 1995's & 1996's mowing and spraying control.

Native grass seedings are usually mowed for broadleaf control. Mowing at a height of 10"-12", controls what weeds do develop without damaging the basal leaves of the native grass.

In July, RM Murphy and Ramona Johnson from Animal and Plant Health Inspection Service (APHIS), inspected the 1996 leafy spurge release site of Black Flea beetles on the Nietzsche Tract. The population appeared stable at 2000+ insects; quite a feat after the '96 - '97 winter. The beetles had definitely impacted the center of the leafy spurge and were spreading south and west. On the drier east side, ants were predating beetles, and plants were holding their own.

4 - FISH AND WILDLIFE MANAGEMENT

4a. Bird banding

Bio. Technician Neal Henkenius assisted Tamarac personnel in developing and maintaining lure/net sites on Hamden Slough refuge and nearby WPA's. A total of 75 ducks were banded, in July.

4b. Disease monitoring and treatment - No activity this year.

4c. Reintroductions - No activity this year.



4d. Nest structures

Two nest baskets were installed in 1997. One each on newly restored wetlands: Orphan Pool and 2-Fawn Wetland. Of 7 refuge nesting baskets, 4 were used, with one having multiple nests.



#97-4-16. Detroit Lakes Wetland Management District crew, Larry Hanson and Steve Maneval placing nest basket on Orphan Pool. (MTM 4/97)

The 45 box, blue bird trail had six successful nests. Boxes are paired to use tree swallows for biological control of starlings and sparrows. Tree swallows used 28 boxes.

4e. Predator and exotic control - No activity this year.

5 - COORDINATION ACTIVITIES

5a. Interagency coordination

The Bisson Lake restoration (112 acres) is being targeted for construction in 1999, during Phase II of a three year restoration program titled North Star 2000. County Commissioners, White Earth Tribal Reservation officers, the Buffalo-Red River Watershed District (BRRWD), the Soil and Water Conservation District, The state DNR, township officers, and conservation organizations were all briefed and are interested in the 220 wetland/1000 acre upland restoration project. All have joined or are considering funding or participation as project partners. (2.a)



#97-13-17. Many partners and agencies participate in kick-off to "North Star 2000".
(MAH 10/97)

The Preliminary Engineers's Report for Bisson Lake was previously completed by DU. Total cost of the construction of the water control structure is estimated at approximately \$20,000 - \$25,000. Road improvements, however, will be needed for Becker County Roads #13 and #14, which intersect in Bisson Lake (See Map). An additional cost of approximately \$100,000 will be needed to improve the roads to American Association of State Highway and Transportation Officials (AASHTO) Standards, which the Becker County Engineer is willing to use for recommendation of the restoration to the Becker County Commissioners.

Two permits for restoration of 29 wetlands was submitted to the BRRWD, in June. BRRWD members inspected the sites in July and approved the permits. Construction was begun on October 1, 1997.

5b. Tribal coordination - No activity this year.

5c. Private land activities - No activity this year.

5d. Oil & gas activities - No activity this year.

5e. Cooperative/Friends Organizations - No activity this year.

CO. RD. #14

RESTORED
1991

BISSON

LAKE

220

217
219
216

213
211
209
215
200

DITCH #15

HAMDEN

LAKE

- FWS BOUNDARY
- RESTORABLE WETLANDS
- DITCH #15

CO. RD. #13

6 - RESOURCE PROTECTION

6a. Law enforcement

Waterfowl hunters are very interested in the large number of waterfowl that are attracted to the restored wetlands near the refuge office. The refuge is closed to hunting. Most hunter use decoys on adjacent WPA's or in stubble fields on adjacent private land. From September-October, waterfowl hunters were checked. During the state's 1997 September Special Canada Goose hunt, two citations were issued, and a fair number of reports received on mallards being taken. In the fall of 1996, six cases were made.

FY97 violations include:

Violation	Code	#	Bond
Weapon capable of holding 5 shells	20.21b	1	Comm. Ser.
Hunting without state license	32.2a	3	** \$ 200
Hunting w/o valid federal stamp	718a	1*	
Hunting w/o valid state stamp	32.2d	1*	
Hunting within 100 yards of water	32.2d	2	1 - \$ 125 1 - Warrant

* Juvenile case

** One juvenile case; one adult later produced a certified photostat of his deer license

In June, 1996, an adjacent landowner was observed trespassing and knocking down the markers and boundary signs with agricultural machinery. The landowner has a 12 year history of trespass, threats, and congressional complaints with the Service. The suspect was charged with "Destruction of real and personal property of the United States" [16 USC 668dd and (e)]. His Public Defender recommended a pre-trial diversion agreement, but this was rejected by the defendant.

A trial was held in December, 1996, at the St. Paul U.S. District Court. During the morning session, the U.S. Attorney noted that the defendant had committed fraud on his public assistance application and was committing perjury by under-representing his land-holding and income in court. The judge recessed the court for lunch. After lunch, the defendant requested his plea be changed to guilty. He was ordered to make restitution of \$750, never trespass on the refuge again, and 1 year of supervised probation.

In November, 1996, RM Murphy assisted Becker County Deputy Sheriff Steve Viste in a vehicle stop and arrest, northeast of the refuge. The defendant was unwilling to stop for the deputy and was traveling at a high rate of speed in a snow squall, on ice covered roads. Eventually, the deputy bumped the defendant into the ditch. At the beginning of the pursuit, Deputy Viste requested backup from the sheriff's office. His request was acknowledged, but no backup response was made. A reprimand was later given to a dispatcher and another deputy. The defendant was intoxicated, and had a loaded rifle on his seat. Deputy Viste found RM Murphy in a near blizzard the next day to personally thank him.

On a cold and wet May 14, Refuge Officer Murphy assisted in the search for a retarded 12 year old girl, who was missing after school. The refuge 4x4 truck can get to areas not passable for police sedans. The young lady was found at the home of a friend. Two 4x4 vehicles have since been requested for the Sheriff's Department.

6b. Permits & economic use management - No activity this year.

6c. Cultural resource management - No activity this year.

6d. Contaminant investigation and cleanup - No activity this year.

6e. Manage water rights - No activity this year.

6f. Manage cultural resources

IMA Consulting, Inc. was contracted to develop a cultural resource management plan for the refuge under FWS-3-96-RFQ-70. After numerous suggestions and maps were added to their document, a final draft was ready by September, 1997.

6g. Land acquisition support - No activity this year.

6h. Land acquisition

Acquisition activity for FY97 is as shown:

Landowner	Acres	Tract No.	Appraisal	Status
Olund	93.10	39	\$53,500	Offer Accepted
Becker Sportsmen	38.24	38	\$ 2,900	Title Clearing
Anderson	12.96	34a	-	Exchanged



#97-11-17. Complex Supervisor Rollie Siegfried, Senior Realty Officer Bill Swanson, reviewing acquisition in North Star area with RM Murphy.
(MAH 9/97)

Pressure continues on county and township boards to conduct local government business with dwindling tax bases. Sixteen successive years of less than 100% entitlement in Revenue Sharing payments has left the Service open to criticism; especially when the boards are asked to certify private, tax producing, property for federal acquisition.

6i. Wilderness and natural areas - No activity this year.

6j. Threats and conflicts - No activity this year.

7 - PUBLIC EDUCATION AND RECREATION

7a. Provide visitor services

A guided bus tour of the refuge was given to 37 participants during Detroit Lake's first Birding Festival in May. One visitor suggested that the refuge's name be changed because the area was too pretty to be called a "slough". Visitors enthusiastically reported to papers covering the event, that a large diversity of birds could be found on Hamden Slough. A second tour was provided after the weekend event, to 24 participants who remained in the area for resort sponsored, birding bus tours.



#97-7-11. Detroit Lakes first Birding Festival received very positive comments of refuge tour. (MTM 5/97)

In response to very positive remarks by visitors about birding opportunities at the refuge, Maplelag Resort requested 2 guided tours in September, while they hosted the week-long Elderhostel studying northern Minnesota culture and landscapes. A total of 43 "students" were provided a guided bus tour.



#97-11-13. Elderhostel Tours now include refuge in Minnesota Studies program.
(MAH 9/97)

Sixty students from the Lake Park/Audubon (LP/A) high school 11th grade Advanced Ecology class and 7th grade General Ecology class received a guided tour of the refuge, on May 2 and 6, respectively. Prior to these tours, the refuge staff briefs the students at school, alerting them to potential ecological discoveries.

A total of 500 volunteer and staff hours were used to develop the refuge's first bird list. 224 species were listed with their seasonal abundance noted.



#97-11-0. Lakes Area Birding Club member Mary Wyatt, donated 100's of hours to refuge bird list. (MTM 9/97)

The refuge staff provided "Skip Day" tours, in May, to 20 Audubon/Lake Park (LP/A) 3 - 6th grade students. The students were at the refuge for bird observation, a wetland walk and beaver dam check. They are selected by their teachers for exceptional work, during the school year. S.K.I.P Day is a LP/A school program to reward selected students with a choice of participating in 38 special classes or site visits.

Parents, teachers and counselors received many excited comments about S.K.I.P day. Children of some of the refuge's worst critics were enthusiastic about their tour of the refuge, and probably made an impression at the family evening supper. The school partnership is an extremely good tool for showing Audubon community leaders and parents some of the positive benefits of the refuge.

In October, a wetland experience program was provided to 50 - 4th graders from LP/A elementary school. Twenty pairs of hip boots are available for this event. On the first day, students were given a slide show on waterfowl, at the school. On the second day, the 4th graders roamed the refuge and the wetlands, with the refuge staff. Students tested their waterfowl identification skills and discovered wetland values. It's always surprising to have students, who never realized there are different species of ducks.

North Dakota State University is developing an curriculum leading to a degree in Resource Management. For a third year, resource management students toured Hamden Slough refuge in September, to review management responsibilities. RM Murphy discussed the changing responsibilities of the modern "Conflict Manager." Communication skills with the public and local governing agencies, public perception, and intra-personnel management were discussed. The students were challenged to view their role as a communicator and to create "win-win" situations to resolve disagreement.

A nature and discovery walk was provided to 5 Head Start students in October, by AT Hendrickson. This is the youngest group to tour the refuge. AT Hendrickson has been working on presentations for younger people.

The Hesby Memorial Site, adjacent to the "Big 5" restorations, draws a steady stream of sight-seers, especially during the fall. They were attracted by the diversity and concentration of migratory birds. The Memorial Site has a ¼ mile foot trail, pergola, monument and parking lot.

Hunter interest continued high, on the restored, south end of the refuge. All refuge property was closed to hunting in FY97, but WPA's and private lands adjacent to the south end of the refuge are used intensely in the fall. Hunters were attracted by the concentration of waterfowl on the restored refuge wetlands. Hundreds of hunters drove to and visit the office to view the 1000's of ducks and geese on Homstad Lake.

Deer hunter numbers were down approximately 30%-50%, in the zone around the refuge. The Zone #408 and #297 deer population was jarred by the last 2 severe winters. The population had few or no births, in 1996 or 1997. Deer hunters were also discouraged by cold temperatures and blowing snow, during early November.

7b. Outreach

In April, TV Channel #3, Detroit Lake's local TV, filmed five, 10 minute segments on refuge management. The segments included: wetland values and water manipulation, wetland restorations and flood control, burning in native grass, an office interview on refuge development, and an interview on public use on the refuge. The segments were aired during 2 weeks in June.

In January, a "Mini-Narrative" was mailed to 90+, neighbors, friends, government officials, and other interested persons. Later compliments indicated a public satisfied with refuge information.

RM Mike Murphy was interviewed by KDLM radio, Detroit Lakes, for 30 minutes on April 24. The interview was conducted in relation to Earth Day and also covered endangered species. The media package developed by the Service on endangered species was used extensively during the interview. He was again a guest for a July interview on flood control and the development of Red River Basin Board.

During some chilly and snowy May days, the refuge staff participated in the 5th Grade Conservation Tours for 625 students, sponsored by the Becker County Soil & Water Conservation District. AT Hendrickson and BT Henkenius acted as a guide/interpreter for the tour's 6 sites. They worked with over 400 high energy, Becker County students from 4 schools, during 2 days of tours. RM Murphy provided 12 LE demonstrations/day for 2 days at one subject site. One day of the Conservation Tour was canceled due to poor weather.

A weekly program was presented to the Northern Lights Council of the Boy Scouts of America, in June and July. The Council covers all of North Dakota, western Minnesota, and parts of South Dakota and Montana. The Council's camp, Camp Wilderness near Park Rapids, attracts 1600 scouts and adult leaders each summer. RM Murphy provides the program to scouts and adults interested in natural resources. This is the 6th year for the program.

A combined display was produced by the 3 Detroit Lake's area Service offices: Detroit Lakes WMD, Tamarac NWR, and Hamden Slough NWR. Staffing limitations prevented individual station displays, which had been done in the past.

In March, AT Hendrickson represented the Service for the 1997 Volunteer Fair held at the Holiday Inn, Detroit Lakes. Mary is a coordinator on the Volunteer Fair committee, and is the refuge Volunteer Coordinator.

The following programs were given:

- Slide presentation to 26 members of the Detroit Lakes Kiwains Club. (July)
- Slide presentation to 19 members of the Detroit Lakes Morning Rotary Club. (April)
- Slide presentation to 50 members at the Annual Barnesville Rod & Gun Club Dinner. (February)
- 3 migration presentations to a total of 76, 3rd grade students, during Frazee elementary school's Outdoor Day.

8 - PLANNING AND ADMINISTRATION

8a. Comprehensive management planning - No activity this year.

8b. General administration



Name	Title	Status
1. Michael T. Murphy,	Refuge Builder since 1990	PFT
2. Mary A. Hendrickson,	Refuge Builder since 1992	PPT
3. Neil Henkenius,	Refuge Builder since 1997	TEMP

#97-11-6.

(MW 9/97)

During FY97, AT Hendrickson was promoted to Administrative Officer, GS-7. RM Murphy was given a STAR Award for the survey, design, and engineering effort needed to develop 2 restoration permit applications with the Buffalo-Red River Watershed District (BRRWD). The permits were approved by the BRRWD, after a 3 year moratorium by that board. AT Hendrickson was given an On-The-Spot Award for her participation on the survey and design team, and her follow-up support for construction staking and on-site inspections with BRRWD board members. BT Henkenius received an On-The-Spot Award for his creative use of chains and posts to develop an algae bloom drag.

Ten teenagers from the SpringHill Group Home worked on the refuge during parts of June, July, and August, with funding from the Minnesota Concentrated Employment Program (CEP). The CEP program is designed to provide basic working skills for teens. CEP supervisors review proposed work projects during the spring for quality of experience and safety, and inspect actual work in progress. They rate the quality of the work experience on the refuge as exceptional, particularly environmental education. The group home provides for development of social and individual communication skills in a structured counseling environment. The home also provided an adult leader with the crew. The CEP crew completed 900 hours of work on the refuge, including fence building and removal, weed control, and frog surveys. The teenagers also receive 5 - 6 hours of environmental education each week.



#97-9-2. CEP/SpringHill crew. (MTM 6/97)

FUNDING - FY 1993-1997 (Thousands of Dollars)					
Activity	93	94	95	96	97
1221 - Drug Intervention				.5	
1230 - Non Game		2.3	1.0	6.2	.3
1261 - Base	35.0	53.5	56.2	83.5	104.5
1262 - MMS Mtc.	68.0	37.0	43.9	10.0	7.5
2957-E3HK - Flood					15.0
2957-E3HM - Flood					55.0
3110 - Realty	2.5				5.0
8451 - Realty				5.0	5.0
9110 - Fire			2.8	.3	
9120 -Fire	8.7	2.1			
9251-5003 - Fire					1.0
30130-1261 - Permit					7.5
Nongame Bird		2.5			
YCC	4.2				
COOP Student	13.1				
Challenge Grant	16.3	50.0			6.0
TOTAL	147.8	147.4	103.9	105.5	206.8

The new RONS II request includes \$ 7.3 million for engineering, construction, and habitat development. A total of 10.2 FTE's is estimated to be needed to complete refuge development. When completed, the refuge will require an O & M expenditure of approximated \$200,000/year and 4 FTE's. Challenge Grants are slowly chipping away at refuge construction.

Refuge volunteers provided 1300 hours of work in FY97.

Volunteer achievements included:

- * develop refuge bird list
- * bird census and data entry
- * building and removal of fences
- * weed control
- * beaver control/water management
- * frog survey/deformities



#97-8-8. CEP/SpringHill crew removing beaver dams. (NH 7/97)

[illegible]