

Hamden Slough National Wildlife Refuge

Audubon, Minnesota
Fiscal Year 2000

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Refuge Manager Date

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Regional Chief, NWRs Date

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INTRODUCTION

Eastern forests dramatically give way to the western prairie at Hamden Slough National Wildlife Refuge. Hardwood forests stretching from the Atlantic seaboard, rapidly transition to the vast western prairie grasses at this picturesque refuge. This biological diversity of vegetation is highly attractive to wildlife, especially migratory birds. But intense agriculture and the associated draining of wetlands over the past 100 years has had a cataclysmic effect on this historic wildlife area. In the north central plains, an estimated 99% of the tallgrass prairie has been plowed under, and over 90% of the prairie wetlands drained. Around Hamden Slough refuge, more than 55,000 wetlands have been drained. This loss and fragmentation of the prairie has resulted in a precipitous drop of prairie wildlife populations. Most notable during the last 30 years, has been the decline of migratory prairie bird populations. Hamden Slough, when fully restored, will provide the largest contiguous block of wetland-prairie habitat in the region encompassing nearly 6000 acres. Many species of waterfowl, including the Eastern Prairie Pothole population of Canada geese, shorebirds, neotropical migrants, and the threatened bald eagle rely on the shallow-water and prairie habitats that have been restored on the refuge. The station's objective is to restore/enhance 3,000 acres of wetlands and 2,250 acres of upland grass. During the last 5 years alone, refuge restoration work has resulted in an explosive growth of waterfowl and shorebird populations, including endangered piping plover.

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.

Inside Refuge

- 5944 acres in fee title on 35 tracts, with:
 - 275 restored or enhanced wetlands totaling 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 is expected to be near \$10,000,000. Work is expected to be completed in approximately 2015.

HAMDEN SLOUGH NATIONAL WILDLIFE REFUGE BECKER COUNTY, MINNESOTA

UNITED STATES
DEPARTMENT OF THE INTERIOR

94°00'00" R. 42 W.

95°55'00"

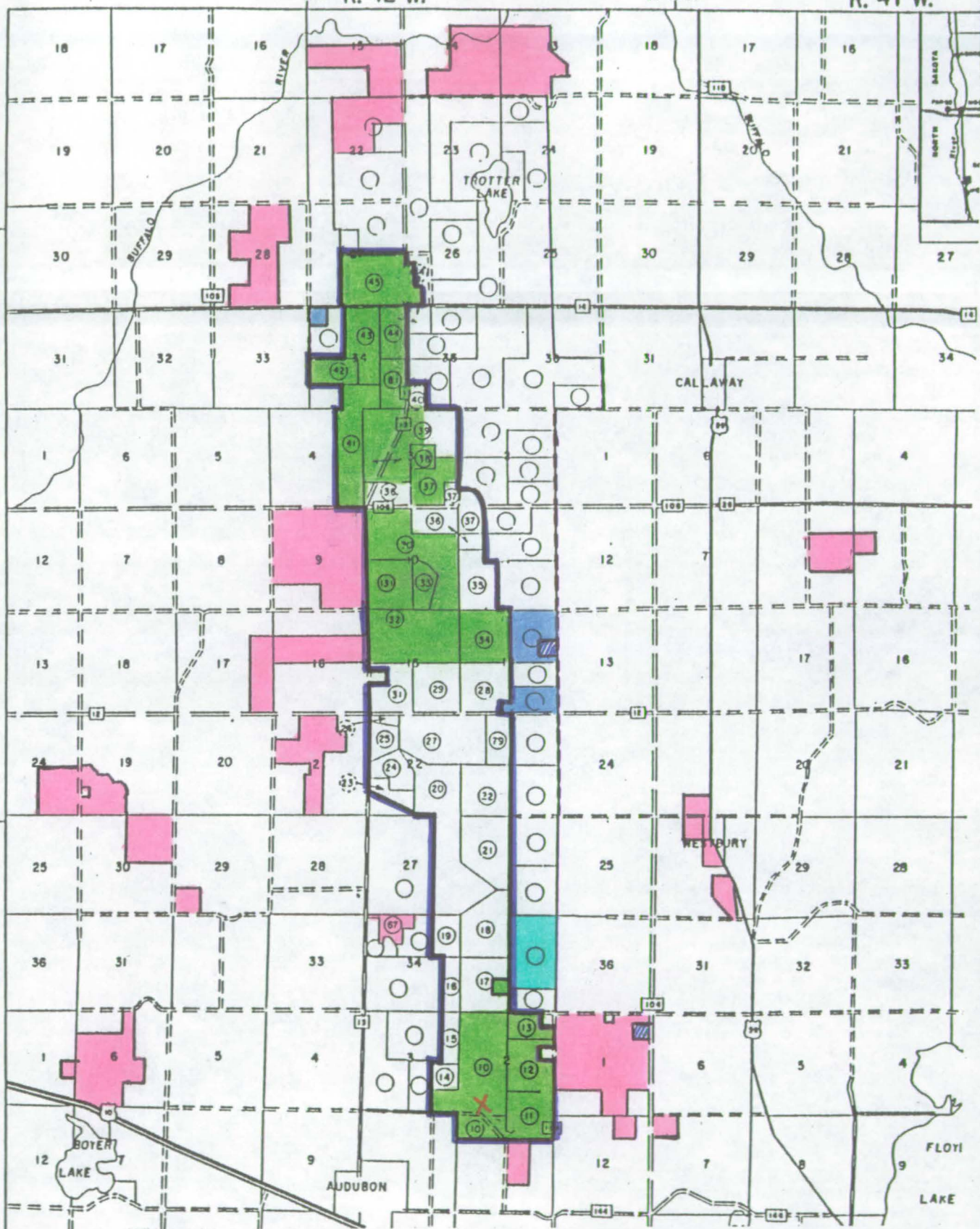
R. 41 W.

T. 141 N.
T. 140 N.

T. 140 N.
T. 139 N.

47°00'00"

46°55'00"



REFUGE BOUNDARY

FEE TITLE

FEE TITLE TRADED (1996)

FEE TITLE - AVAILABLE FOR
TRADE

OFFICE HEADQUARTERS

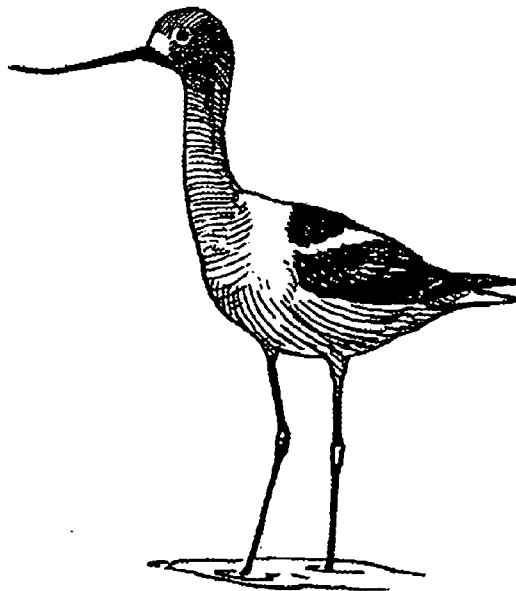
WPA

LEASE AUTHORIZED

WETLAND & GRASSLAND EASEMENTS
REQUESTED

HIGHLIGHTS

- Bisson Lake restoration completed. (2.a)
- The "Frog Pond " restored in North Star 2000 project area. (2.a)
- Record number of shorebird species observed on the refuge. (1.a)
- Five bird species observed on the refuge for the first time. (1.a)
- Groundwater study of Bisson Lake generating scientific interest. (1.b)(8.a)
- First private land initiatives begun by refuge. (3.f)(5.c)
- Birding Festival participants enthusiastic about refuge tours. (8.a)
- Budget and administrative functions for Rydell NWR assigned to Hamden Slough. (9.b)



CLIMATIC DATA

Weather conditions for FY00 were warm, with a wet summer. Record and near record warm temperatures were common, making the 99' - 00' winter the warmest on record. Bisson Lake construction was stopped by thunderstorms in mid-June. Some of the lake's lost construction time was made up during a warm August, which allowed grass seeding to get established on the rebuilt Bisson Lake road. The average temperature for the year was 45.3°F or 3.2°F above normal. A total of 25.43" of precipitation occurred, which is just above normal.

Quarterly summaries are as follows:

October-December. Very warm and dry conditions prevailed suggesting a much milder winter. Harvesting was completed on time; the first since the wet cycle began in 1992. Luckily, no dormant seedings were done in the fall, as record warm temperatures in early December would have germinated the seed. Local residents removed boats from storage and went waterskiing on area lakes, the first weekend of December. Much below normal snow of only 5.4" fell during the quarter, compared to the 47.0" received in the record 1996 - 97 snow.

January - March. Record warm weather persisted, making the winter, the warmest in 105 years of record keeping. Only one winter storm declared by the National Weather Service. For a third year, deer and upland bird populations got a winter reprieve, after steep population declines from the stress of the 1995-96, and 1996-97 successive, cold and snowy winters. The first migrants: eagles, harriers and Canada geese were seen the last week of February. Diving ducks, mallards, hawks, and even bluebirds and meadow larks were observed during the first week of March. A major influx of migratory birds, including tundra swans occurred on March 23.



April - June. Diving ducks and some avian predators were gone by late April. April and May were warm and relatively dry, allowing cooperative farm seeding to be completed on time. Shorebird species diversity increased dramatically during the second week of May. Drawdowns and construction hampered by a very wet June.

July - September. A moderate and relatively wet summer prevailed. Through September, wetlands held high water and kept waterfowl dispersed.

CLIMATOLOGICAL DATA - FY00							
Month	Max.	Min.	Avg.	30 Yr Norm	Prec.	(Snow)	40 Yr Norm
October	74	18	42.2	- 1.5	1.34		1.25
November	54	05	28.2	+1.2	0.24	(0.9")	0.76
December	51	-15	23.9	+11.3	0.48	(4.3")	0.75
January	38	-14	8.7	+3.9	0.73	(6.5")	0.63
February	50	-12	22.1	+9.9	1.01	(11.6")	0.56
March*	65	04	29.6	+9.3	0.62	(5.6")	0.89
April	78	26	49.1	+ 6.0	1.67	(0.7")	2.17
May	93	31	57.2	+1.6	2.94		2.70
June	90	37	63.5	- 2.7	7.44		4.34
July	94	57	70.1	- 0.3	2.47		3.69
August	91	52	69.7	+0.9	4.22		3.87
September	83	31	54.9	- 2.4	2.83		2.33
TOTAL			45.3		25.43		23.94

* Warmest winter on record (NWS)

1 - MONITORING AND STUDIES

1a. Surveys and Censuses

Significant general wildlife occurrences at Hamden Slough NWR in FY00:

- First sighting of 5 new bird species on the refuge, included:
 1. White-rumped sandpiper
 2. Whimbrel
 3. Northern mockingbird
 4. American Black duck
 5. Richardson's Merlin
- A very rare sighting of 7 American avocets were made on the newly restored "Frog Pond", on the Zurn Tract.
- Excellent spring and summer shorebird viewing. A record 23 species were observed. This included multiple observations of rare species such as stilt sandpipers, and semi-palmated, black-bellied, and lesser golden plovers. Participants in the May Birding Festival Shorebird Workshops were delighted with the diversity and numbers present on drawdown pools. A total of 78 bird species were observed on Homstad Lake and adjacent South Wetland. After the Birding Festival, a whimbrel and 4 Hudsonian godwits landed on the same pools. The sightings were put on the MOU hotline and attracted bird watchers from as far as 400 miles away. Stilt sandpiper numbers exploded from one seen in all of 1998, to regular, multiple sightings in 1999 and 2000. Several factors helped in observation, including: excellent birding by the Lake's Area Birding Club and the Minnesota Ornithological Union (MOU), the draw-down of large refuge pools, and the migration of arctic nesting birds.
- Hawk and falcon numbers and diversity is increasing. Peregrine falcons and merlins use to be rare, but are now seen occasionally in the spring and fall. Before 1998, rough-legged hawks were rarely seen in the area. Now, they are now regularly sighted and remain in the refuge area for 4-5 weeks, during the spring and fall migration.
- Bald eagles are now a common sight, particularly around the south end of the refuge. Ample numbers of coot and waterfowl provide them with excellent hunting opportunities. Neighbors take some pride in this, and make an effort to show them to their visiting relatives.

1b. Studies and Investigations

The 1996 - 1999 seepage analysis completed by North Dakota State University (NDSU) at Bisson Lake has generated significant interest by the National Soils Laboratory (NSL), Lincoln, NE, and the US Geological Survey (USGS). After the 1997 flooding of the Red River Valley, USGS had been investigating sites to begin a study of water balance and wetland restoration potential to increase/decrease flood effects. NDSU's seepage analysis allowed USGS to account very closely for that portion of their water balance model. USGS selected the Bisson Lake site as an area to begin a 3 year, \$160,000/year study titled "Relations of Water Balance Processes on Wetlands and Small Watershed in the Red River of the North Basin". Their working title is "Red River Wetland Study". The USGS study closely monitors all factors affecting water entering and leaving Bisson Lake. This includes detailed factors such as snow reflection, sublimation, and transpiration. This spring and summer, USGS modified and updated 4 computerized water monitoring stations that had been installed in 1999. According to Kevin Vinning, USGS Study Coordinator, Bisson Lake is the only wetland in North America on which the USGS has water monitoring stations. He believes that within 2-3 years, Bisson Lake will be the most hydrological studied wetland in North America.

2 - HABITAT RESTORATION

2a. Wetland restoration

Four wetlands, including Bisson Lake and the "Frog Pond" were restored in the North Star 2000 project area. North Star 2000 is a multiple partnership project begun in 1996 to fund and restore 220 wetlands and 1000 acres of upland, on the north end of the refuge, and nearby Matter WPA (5.a). Most refuge North Star wetlands are done. Permits have been issued for all remaining refuge and WPA wetlands. The project will be completed by September, 2001. Refuge wetlands were restored with major Duck's Unlimited (DU) funding. Bisson Lake was designated by DU as their northwest Minnesota Flagship Project, in 2000. Bisson Lake's water control structure and road improvements were completed in September.



#00-12-07. North Star 2000 area after a 4.37" rain. The "Frog Pond" is at upper right; Bisson Lake near center. (MTM 6/00)

In late January, the Buffalo-Red River Watershed District (BRRWD) voted to approve a construction permit for 100 acre Bisson Lake, ending a 5 year struggle for the lake's restoration. In 1995, neighbors had suggested that restoring Bisson Lake would damage their cropland and ruin County Road #14, running through the middle of lake. Beginning in 1996, extensive, "state-of-the-art" seepage analysis was conducted (1.b), and was incorporated in the engineering plan. In addition, DU engineers used American Association of State Highway Transportation Officials (AASHTO) specifications in the restoration design and satisfied county officials concern for both traffic safety, detour routes and road protection from water damage. In early January, the Becker County Commissioners finally approved a Construction Agreement with the refuge. After years of seepage and soil boring analysis, numerous hydrological models, public hearings, frequent County and Watershed District meetings, letter writing campaigns, unprofessional interference by a Minnesota Department of Transportation employee, repeated costly demands for more engineering and/or materials, and addressing every objection raised by Becker County's representative on the Watershed District board, the refuge manager armed with the County's Agreement, pushed for a resolution with the Watershed District. In late January, the BRRWD voted 3 - 2 to approve the restoration. The Becker County board representative resigned at the February meeting of the Watershed District.

Construction activity on Bisson Lake was scheduled to begin in June. Four days of rain in mid-June and a 3.65" thunderstorm on June 20, inundated the basin and delayed construction until mid-July. By September 22, the final stop log was put in the water control structure. After 5 years, total cost for seepage analysis, borings, engineering, permits, public hearings, construction, and staff time is estimated near \$300,000.



#00-17-12. North half of Bisson Lake needed to be hydrologically connected to south half, through county road. (MTM 7/00)



#00-19-01. Cost of road shoulders and culverts was 80% of restoration costs. (MTM 7/00)



#00-25-19. Sheet metal pilings being driven for Bisson Lake structure.
(MTM 9/00)



#00-28-07. Bisson Lake structure nearing completion. Bisson Lake in background.
(MTM 9/00)

Wetlands #200 & #215 totaling 30 acres were restored on the Zurn Tract, just southwest of Bisson Lake. Local residents refer to both wetlands as the "Frog Pond", and also note that they are some of the most productive wildlife wetlands in western Minnesota. Both wetlands have peat bottoms. The wetlands were plugged in November, by Tamarac NWR personnel. To everyone's surprise, 7 American avocets were observed on the pools in May. Only one pair of avocets had been previously seen in Becker County.



#00-2-09. Tamarac EO Tom Franklin building ditch plug for the "Frog Pond"
(MTM 11/99)



#00-18-21. The "Frog Pond" - 8 months later. (MTM 7/00)

2b. Upland restoration: On-refuge

In mid-March, a total of 125 acres were seeded with native grass, on 2 fields previously farmed by Special Use Permits (SUP). Seeding was done over the snow to duplicate the natural condition of freezing and thawing action driving the seed into a thin moist layer of soil, under the snow. The fields were sprayed in May with Round-up to reduce quack grass. The intention was to spray the quack grass and not affect the ungerminated grass seed. Fields checks during the spring and summer of 2000, revealed one of the refuge's most successful seeding yet. Wet spring conditions since 1992, have prevented traditional spring seeding and spraying, and have allowed only moderate success with establishing grass.



#00-02-11. Tractor Operator Bob Scherzer adjusting new Vicon snow seeder. Snow seeding requires no seed cleaning, allows use of simpler machines, and cuts personnel time. (MTM 3/00)

Thirty-one wildflower "starter sites" dormant seeded in November, 1998, are beginning to flourish, providing color and attracting insects to the North Star 2000 area. At \$175/lb., and a recommended rate of 5 lbs. per acre, diversifying large tracts of restored prairie with seeded wildflower is cost prohibitive. But the refuge staff and volunteers are encouraged by a prairie remnant site, where wildflowers spread into inaccessible cropland. The 31 "starter sites" of 0.1 - 0.25 acre each are an attempt to speed up and duplicate that process. So far, so good!

HABITAT MANAGEMENT

3a. Water level management

A 18 month drawdown of Homstad Lake (70 acres) begun in June, 1999, was continued. But precipitation in June and September was far above normal, and did not allow the wetland bottom to dry as much as desired. Due to landowner ditching, the watershed into Homstad Lake is 2500 acres. That prevents any real drying during wet periods.

3b. Moist soil management No activity this year.

3c. Graze/mow/hay

One grazing permit was issued in 2000. This 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 South Wetland.

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 had an relatively dry spring for planting. By August, small grain quality was generally good, and surprisingly free of disease. August was dry enough to allow timely harvesting. Fall mallards and geese hit 2 refuge stubble fields in large numbers. Geese and ducks also clobbered partially harvested corn adjacent to Homstad Lake. Surprisingly, not one complaint was received about spring cygnets (6.a.). The long September Special Goose Season heartens most landowners with early hunting or hunt leasing opportunities.

Farming was authorized on 5 tracts totaling 350 acres through the cash rent program. Special Use Permits (SUP) for cash rent were issued to prepare cropland for grass seeding. In March, a total of 125 acres of former cropland was seeded with native grass and wildflowers (2.b). In 1999, the USGS asked that the farming agreement on the Zurn Tract be extended for one year to allow additional measurement of water runoff and retention in cropland (1.b). At the refuge request, the Zurn's planted early maturing soybeans on the Zurn Tract to allow an early harvest. The early harvest will allow for a fall restoration of the remaining refuge North Star wetlands, in FY01. The SUP's rent is reduced, if a food plot is maintained on the farmed tract.

2000 FARM SUMMARY

Cooperator	Tract	AC	Fee	Crop	Permit Dates
A. Anderson	#10	62	\$25	soybean	1998-2000
J. Hass	#11	50	\$25	soybean	1999-2000
J. Steffl	#34	140	\$25	soybean	2000
B. Zurn	#42	70	\$25	soybean	1997-2000
J. Flottemesch	#44	28	\$25	small grain	1998-2000

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. Rates for 2001 will be raised to \$30 acre.

3e. Forest cutting - No activity this year.

3f. Fire Management

Three prescribed burns were completed on 615 acres. One of these was on nearby Audubon school property. The largest fire yet prescribed on the refuge, 455 acres, was conducted on the west side of Hamden Lake. The refuge was assisted on all refuge burns by Tamarac firefighters. The Hamden crew assisted Tamarac firefighters on 2 of their larger prescribed burns.

In September, RM Murphy was mobilized as a Security Specialist I for the Thompson - Flat Complex fire, near St. Regis, MT. The refuge's new dual-wheel truck was delivered in June, replacing the surplus 1980 truck used as the fire truck. The new truck was equipped with lights, slip-on pumper, radio, and associated fire gear and tools.



#00-03-25. 455 acre burn on west side of Hamden Lake was refuge's most complex prescribed fire yet. Cattails and transmission lines can be a interesting combination. (MTM 4/00)

On May 3, refuge firefighters burned 80 acres of school property immediately adjacent to the east side of Audubon, Minnesota. The Audubon School Board had received the acreage as a tax forfeiture. The School Board decided to restore wetlands and native prairie and develop the site as a natural resource/conservation area. Hamden Slough personnel are working with the MN Department of Natural Resources (DNR), Becker County Soil & Water Conservation District, and Audubon School Board in a cooperative venture to develop the site and teach conservation techniques. The fire was the first demonstration for the school, with 250 students watching the fire crews from a designated safe area. Refuge Manager Mike Murphy served as fire boss for the burn and coordinated DNR fire crews and the Audubon Fire Department. The refuge fire crew learned a lot about urban interface, working with apartments, garages, storage buildings, and discarded debris.

One refuge wildfire of 125 acres was started on Halloween night. Vandals also started fires within a few miles of the refuge. Refuge firefighters and MN DNR personnel had control of the fire by 9:00PM and out by 10:30PM.

3.g Pest plant control

All 1996 - 1999 grass seedings were mowed at least twice, which reduced invasive broadleaf competition. Fields were mowed at a height of 10"-12", to control what weeds do develop without damaging the basal leaves of the native grass and wildflowers (2.b). An additional 300 acres of older restorations, fallow fields, and former pasture were mowed for control of Canada thistle, sweet clover, and other undesirable plants. Mowing was done with refuge personnel and equipment.

4 - FISH AND WILDLIFE MANAGEMENT

4a. Bird banding - No activity this year

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

4c. Reintroductions - No activity this year.

4d. Nest structures

The 40 box, blue bird trail had 4 bluebird nests, one of which was successful. Boxes are paired to use tree swallows for biological control of starlings and sparrows. Tree swallows used 26 boxes.

Of 8 overwater baskets, 2 had successful Canada goose nests. Two other baskets had a single mallard nest each. Of those, one nest was abandoned after a prescribed burn on an adjacent WPA.

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

5 - COORDINATION ACTIVITIES

5a. Interagency coordination

North Star 2000 is a multiple partnership project to restore 220 wetlands and 1000 acres of upland, by the year 2000. During Phase III (FY00), 100 acre Bisson Lake and all remaining wetlands were to be completed. It was close: 125 wetlands finished on the refuge; permit for wetland restoration on the Matter WPA in hand. Restoration permit reviews, preliminary and final engineer's reports, construction agreements, groundwater and surface drainage analysis, construction inspections, scheduling of equipment and personnel, and county and township briefings, all required numerous meetings with project partners (2.a). During Phase III, the following were completed with partners: soil and seepage review, DU's final engineering report, Becker County Construction Agreement, Watershed District's restoration permit, and \$54,000 of additional funding and engineering work.

Project and funding partners include:

- Becker County
- Becker County Soil and Water Conservation District
- Buffalo-Red River Watershed District (BRRWD)
- Detroit Lakes Wetland Management District
- Duck's Unlimited
- Minnesota Department of Natural Resources
- Minnesota Waterfowl Association (MWA)
- National Fish & Wildlife Foundation
- North American Wetlands Conservation Council (NAWCC)
- Red River Water Management Board
- Tamarac NWR
- White Earth Tribal Council



#00-01-06. DU engineers surveying for Bisson Lake water control structure. Soil boring at WCS site in background. (MTM 3/00)

The Preliminary Engineers's Report for Bisson Lake was completed by DU, in 1994. By November, 1999, the final draft was agreed to by Becker County and the Buffalo-Red River Watershed District engineer. Total cost of the construction of the water control structure is approximately \$25,000. Road improvements, however, were required for Becker County Roads #13 and #14, which intersect in Bisson Lake. An additional cost of approximately \$200,000 was needed to improve the roads to American Association of State Highway and Transportation Officials (AASHTO) Standards. The Becker County Engineer was willing to use AASHTO standards for recommendation of the restoration to the Becker County Commissioners.

5b. Tribal coordination

Eight hundred (800) acres of the refuge and the North Star 2000 area is within the White Earth Indian Reservation. In March, RM Murphy briefed the White Earth Conservation Council on the North Star 2000/Bisson Lake restorations. After reviewing the information, the Conservation Council recommended to the White Earth Tribal Council that the portion of the refuge inside the reservation boundary, be closed to tribal waterfowl hunting. The Tribal Council decided not to accept their recommendation. This presents a public perception problem of the refuge closed to hunting, but open to tribal members within the reservation boundary. Tribal Biologist Everett Goodwin toured the North Star project with refuge personnel in November. A reciprocal tour was made to view the progress of wetland and upland restorations on over 2000 acres of tribal land.

5c. Private land activities

A 230 acre tract in the refuge's designated lease zone was purchased by local sportsmen, who want it restored. Potential wetland and upland restorations were mapped, with the landowners interested in permanent easements. Refuge personnel developed optional maps and plans for different mixes of restorations, cropland and hunting sites. The owners selected the option of restoring 21 wetlands and 85 acres of upland, leaving 13 acres of cropland. All of their cropland was in soybean stubble and ideal for seeding in 2001. Leaving the stubble for seeding was discussed with them on several occasions. In early September, their farming cooperator plowed it under. He was asked to roll and re-pack the fields. Wet September conditions prevented any significant field work. During the summer, the new landowners at their own expense repaired an old water control structure and added an extra 2' of water to a 70 acre wetland.

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

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

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, and now also in the North Star 2000 area. The refuge is closed to hunting. Most hunters use decoys on adjacent WPA wetlands or in stubble fields on adjacent private land. In the fall of 1999, limited checks were made of waterfowl hunters, as RM Murphy was assigned to the Regional Office as Acting Refuge Supervisor for part of October and November. On November 15, 1999, RM Murphy assisted the Becker County Sheriff Department in looking for 2 female teenagers missing from a home near Callaway. In April, RM Murphy investigated a reported suspicious vehicle parked near a wildfire on the Anderson WPA. In April he also rendered assistance twice to vehicles in distress. In one case, a woman slide off Hwy. #10, blew 2 tires, and was disquieted. Officer Murphy calmed her down, called her husband, and took her to the Highway Patrol office for assistance. On the waterfowl opener, September 30, 2000, Officer Murphy was near a residence, which reported a missing 65 year old female with Alzheimer's disease. The first to arrive on scene, Officer Murphy coordinated worried neighbors and arriving LE units. He asked 2 neighbors to search inside the house. They found her trapped between a bed and the wall. During the state's September 2000 Special Canada Goose hunt, one check was made of mallards being taken. No mallards were found. Hunters were a bit confused by the state's new electronic license system, and electronic stamps. Helpful instructions were better than citations. On 2000's waterfowl opener, a hunter with a 2-day old shotgun, discovered it was unplugged with the assistance of Officer Murphy. Only 3 shells were in it, and he had the receipt for the purchase. In September, a new Dodge 2500, 4x4 truck was received and was outfitted for law enforcement.

The Minnesota Department of Natural Resources began issuing goose depredation permits in May, which allowed farmers to take 20 geese to protect their crops. By July, rumors were abundant, and the Becker County paper announced in a headline article that 20,000 geese were taken in the county. Compliance monitoring was not done, as the local MN Conservation Officer retired in May, and the refuge was assigned other tasks that took precedence (9.b).

FY00 violations include:

Violation	Code	#	Fine
Unplugged shotgun	20.21(b)	1	warning
Unsigned federal waterfowl stamp	16US718	1	warning
Unsigned state waterfowl stamp	32.2(d)	1	warning

6b. Permits & economic use management

An EA and Road Right-of-Way Permit for 500' of Becker County Road #14 was approved at the Regional Office, in September. The county is improving 3 miles of the road from Bisson Lake to Callaway. No wetland was involved. The county will mitigate any upland disturbance or damage by building an access road to the eastside of Tract #45, allowing better management. That portion of the tract is currently only accessible across private cropland.

6c. Contaminant investigation - No activity this year.

6d. Contaminant cleanup - No activity this year.

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

6f. Manage cultural resources - No activity this year.

6g. Land acquisition support

Wet soils, low commodity prices, and aging landowners are transforming rural socio-economic systems. It all leads to questions by landowners on the value of the farm and a possible sale/exchange to the FWS. But rural beliefs and attitudes about the refuge change slowly. The availability of refuge personnel in the Audubon-Callaway vicinity allows landowners to explore ideas about future sales. This usually converts to a regular call from the refuge staff to the Service Realtors in Fergus Falls. In July, 2000, a neighboring landowner with cancer, had trouble controlling weeds in his hayland. Tractor Operator Bob Scherzer cleaned it up with the refuge mower in an hour. Two days later, the landowner asked the Service to make an offer on his property inside the designated refuge boundary.

6h. Land acquisition

Three tracts were acquired in FY99. None were acquired in FY00. 20 tracts down, 15 to go.

Pressure continues on county and township boards to conduct local government business with dwindling tax bases. Nineteen 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.

8 - PUBLIC EDUCATION AND RECREATION

8a. Provide visitor services

Two days of guided bus tours of the refuge was given to 118 "standing room only" participants during Detroit Lake's fourth May Birding Festival. Interest was stimulated by enthusiastic reports of 1998's & 1999's refuge tours, as well as, a small article and letters to the editor on Hamden Slough, in several birding publications. Demand was so great for Sunday's tour that the Chamber of Commerce (Festival Sponsor) added a second bus. RM Murphy ran between the busses that morning. Bird diversity for the weekend was exceptional. On just the first leg of the Saturday's tour, between Homstad Lake and South Wetland, 72 species were observed. Sunday's group found 78 in the same area. This included: black-bellied plover, red-necked phalarope, rudy turnstone, American black duck, and marbled godwit. All visitors were delighted with the exceptional diversity of birds, with 94 sighting at least one "life list" bird. Three days after the Festival, a whimbrel and 4 Hudsonian godwits were observed feeding in South Wetland (1.a). A mini-Festival began as visitors from up to 400 miles away arrived to catch a peek of the tundra visitors.



#00-06-17. Birding Festival tour group spies a La Conte's sparrow near the refuge office.
(MTM 5/00)

The main speakers for the birding festival were Don and Lillian Stokes. The Stokes are known internationally for their 23 books on birds and their PBS television series on birds and birding areas. The Stokes were members of the Sunday tour and took extensive film footage of the refuge and the various birds. They were delighted with the refuge and the participation of the tour group. They returned on Sunday afternoon for additional footage of birds and interviews with RM Murphy.



#00-08-06. Don and Lillian Stokes photographing birds for their PBS series.
(MAH 5/00)

On Friday and Sunday of the Birding Festival, a shorebird identification workshop was conducted adjacent to Homstad Lake and South Wetland. Organizers took a chance that enough shorebirds would be present on Homstad Lake, which was in drawdown. They weren't disappointed, with the lake attracting many species in abundant numbers.



#00-06-09. Shorebird workshop adjacent to Homstad Lake. (MTM 5/00)

In August, the Minnesota Association of Professional Scientists (MAPS) toured the refuge to review ground water movement in glacial terrain. Fifty-two members of the Association were provided an overview of the unique biome transition area in and around the refuge. The central idea of the tour was to review North Dakota State University's hydrological research on ground water movement in Bisson Lake. Interest was very high on the interaction of soil, vegetation and crops, surface and ground water, and the changing economics of farming.



#00-23-06. MAPS scientists asking educated and challenging questions during refuge tour.
(MAH 8/00)

The refuge staff provided "Skip Day" tours, in May, to 14 Lake Park/Audubon (LP/A) 5th - 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 36 different skill classes or site visits.

In late September, the Detroit Lakes Chamber of Commerce Agri-Business Committee hosted a farming tour for 18 state and local legislators. The development of the refuge, Bisson Lake and the lake's comprehensive design, and the changing farm economy were reviewed during the afternoon.

Other refuge tours included:

- 6 "job shadowing" students for a day, including Bisson Lake design meeting with Becker County Engineer (January).
- Refuge tour for 6 Italians, as part of the Rotary Geographic Study Exchange program (May).
- North Star 2000 tour for DU Regional Personnel (June).
- Water control structure hydrology and ground water storage capacity with 8 members of the 3-county Joint Powers Board (July).

The Hesby Memorial Site, adjacent to the Hesby Wetland, draws a steady stream of sight-seers, especially during the fall. They are 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 north and south end of the refuge. All refuge property was closed to hunting in FY00, but WPA's and private lands adjacent to the restored portions of the refuge are used intensely in the fall. Hunters are attracted by the concentration of waterfowl on the restored refuge wetlands. For a second season, however, surprisingly few ducks were taken in this part of Minnesota. The September Goose hunt was good, but the regular waterfowl season was only fair. The few successful hunters had to work to get their limit.

Deer hunter numbers have rebounded to roughly the pre-1996 levels. The Zone #408 and #297 deer populations were jarred by the 2 severe winters of '95 -'96 and '96 -'97. The population had few or no births, in 1996 or 1997. The last three successive winters have been mild, allowing the fawning rate to move from near 0% to almost 100%. During the 1996 - 1998 deer seasons, most hunters moved further south.

8b. Outreach

In May, RM Murphy taped 3 segments on Conservation Careers for the Armed Forces Radio. The pieces were played from June 5 - 11 and provided information on job qualifications, educational requirements, and personal expectations. An estimated audience of 225,000 armed services personnel heard the tapes.

North Dakota State University is developing a curriculum leading to a degree in Natural Resource Management. In February, RM Murphy spoke at NDSU's graduate seminars. His talk was titled: "Hard Facts about Soft Skills". The yearly resource management/communication skills tour and discussion scheduled in September, was canceled due to RM Murphy's fire assignment in Montana.

During May, the refuge staff and volunteers participated in the 5th Grade Conservation Tours for 609 students, sponsored by the Becker County Soil & Water Conservation District. AT Hendrickson acted as a guide/interpreter between the tour's 6 sites. She worked with over 400 high energy, Becker County students from 3 schools, during 2 days of tours. RM Murphy provided 12 LE demonstrations for one day, and guided 3 schools on the other 2 days.

The following programs were also given:

- Four presentations to 93 students at the Frazee High School Career Day (October).
- Slide presentation to 72 members of the Minnesota Deer Hunter Association (March).
- Slide presentation to 34 members of the Fargo-Moorhead Audubon Society(March).
- Presentation to 27 members of the Minnesota Waterfowl Association (August)

9 - PLANNING AND ADMINISTRATION

9a. Comprehensive management planning - No activity this year.

9b. General administration



Name	Title	Status
1. Michael T. Murphy,	* Refuge Builder since 1990	PFT
2. Mary A. Hendrickson,	* Refuge Builder since 1992	PFT
3. Bob Scherzer,	* Refuge Builder since 1999	TEMP

* Refuge builder is an unofficial description. Every staff member is involved in every refuge activity. All staff members are tractor and fire certified, run computers, type reports, count waterfowl, give tours, and answer the phone.

Seven teenagers from the SpringHill Group Home worked on the refuge during part of June, 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 refuge 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. In 2000, the CEP crew volunteered 294 hours at Hamden Slough National Wildlife Refuge and Detroit Lakes Wetland Management District. The program could not be supported on Hamden Slough, when the refuge was assigned Rydell NWR administrative and budget functions. The Hamden staff could not provide timely and safe on-site orientation and supervision. Working out of refuge facilities and using refuge equipment and safety gear, the CEP crew volunteered 336 hours at the Cities of Frazee, and Vergas, Minnesota, working on flower gardens and beach clean-up. The highlight of their summer was working 420 hours for Habitat for Humanity, clearing building sites and landscaping for newly built houses.

The Lake's Area Birding Club continues to volunteer valuable time and expertise to the refuge. They observed a piping plover on the refuge and have substantially increased bird surveys to monitor the dramatic increase in shorebird species and numbers.

All refuge volunteers provided 1270 hours of work in FY00.

Volunteer achievements included:

- * building Bisson Lake parking lot
- * removal of barb wire fences in Hamden Lake
- * beaver dam removal and water management
- * bird surveys and censuses





#00-27-08. Volunteers and TO Bob Scherzer completing a natural looking parking lot adjacent to Bisson Lake. (MAH 9/00)

In June, the refuge was assigned to support the administrative and budget functions of Rydell NWR. Approximately 200 staff hours were required to perform this assignment. This reduced hours available for restoration permits, construction support, volunteer activities, and monitoring compliance with goose depredation permits. An 8 year old outreach program with the Boys Scouts of America was also canceled.

FUNDING - FY 1996-2000 (Thousands of Dollars)					
Activity	96	97	98	99	00
1221 - Drug Intervention		.5			
1230 - Non Game	6.2	.3			
1234 - NAWMP			10.0	7.5	
1261 - Base	83.5	104.5	138.7	124.2	200.3
1261 - Congressional/RONS			25.0	60.0	
1262 - MMS Mtc.	10.0	7.5	42.9	80.7	115.0
2957-E3HK - Flood		15.0			
2957-E3HM - Flood		55.0			
3110 - Realty		5.0	5.0	5.0	
8451 - Realty	5.0	5.0			
9110 - Fire	.3				
9251- Fire		1.0	1.7	2.3	2.7
30130-1261 - Permit		7.5			
Challenge Grants		6.0	25.0	46.7	
TOTAL	105.5	206.8	248.3	326.4	318.0

The new RONS II request includes \$ 6.3 million for engineering, construction, and habitat development. A total of 5.3 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.