

Hamden Slough National Wildlife Refuge

Audubon, Minnesota
Fiscal Year 2001



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Refuge Manager Date

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Regional Chief, NWRS Date

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"

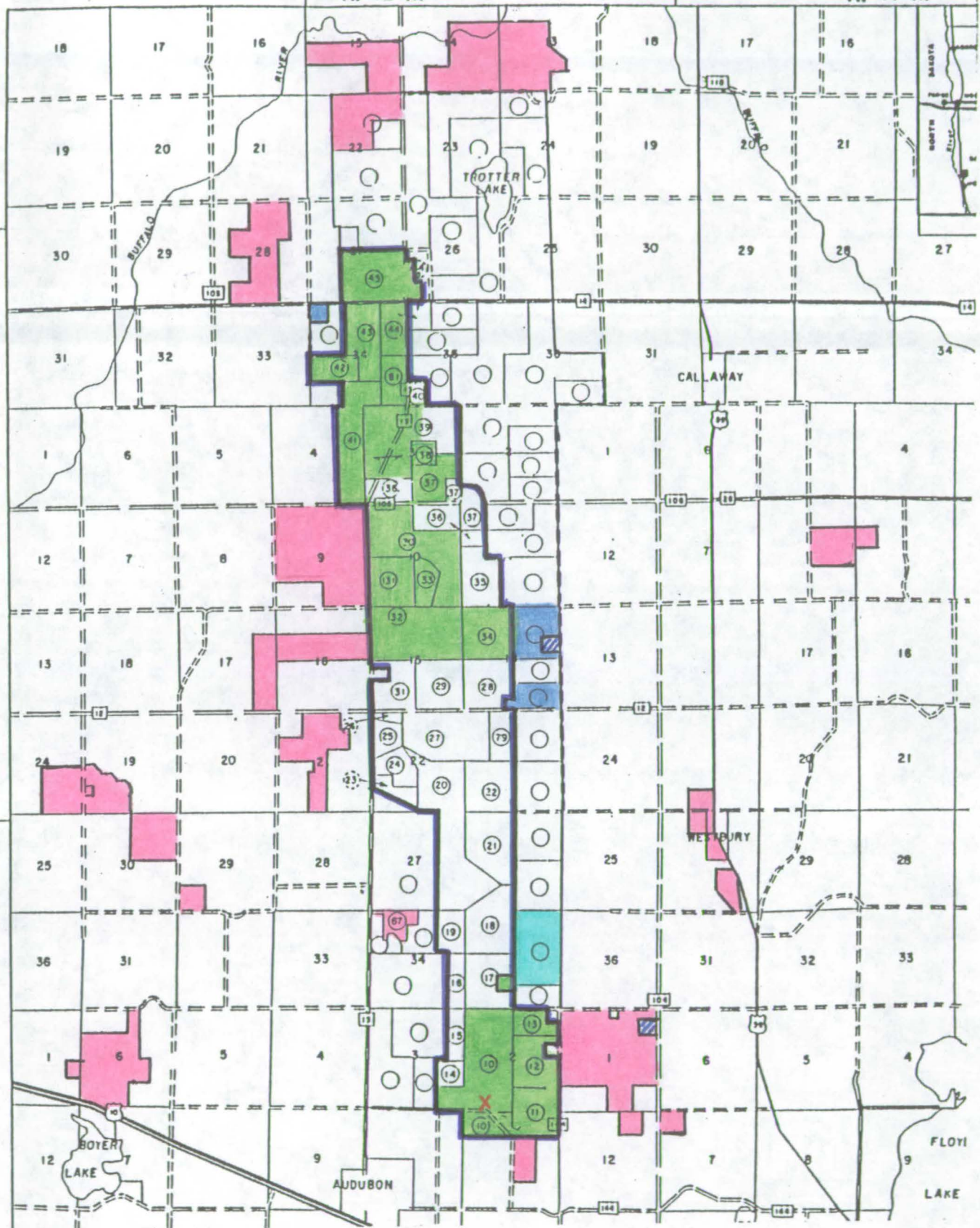
T. 141 N.

T. 140 N.

48°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

WETLAND & GRASSLAND EASEMENTS REQUESTED

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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.

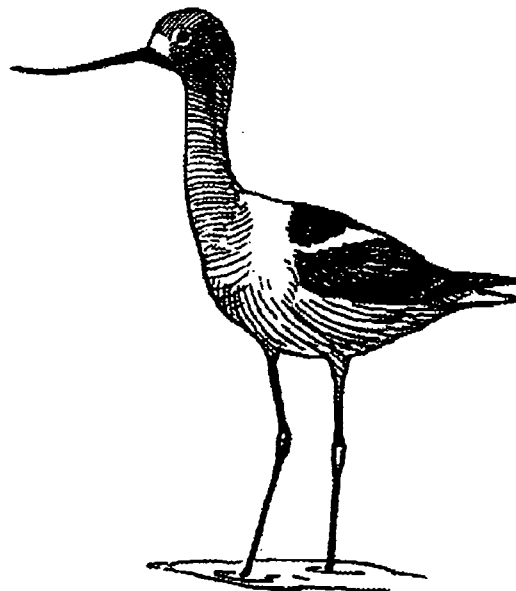
Adjacent to Refuge

- 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.

HIGHLIGHTS

- Bisson Lake re-flooded after 94 years of drainage.(3.a)
- North Star 2000 wetland restorations completed. (2.a)
- Record number of shorebird species nesting on the refuge. (1.a)
- First off-refuge wetland restored inside Audubon city limits. (2.a)(5.a)
- Groundwater study of Bisson Lake generating scientific interest. (1.b)(7.a)
- First private land initiatives begun by refuge. (3.f)(5.c)
- Birding Festival participants enthusiastic about refuge tours. (7.a)



CLIMATIC DATA

Weather conditions for FY01 were highly variable, with monthly extremes of temperatures and precipitation. Unusually cold months were balanced by unusually warm months. Precipitation was double the normal amount some months, and only half the norm in others. Construction time was lost during a wet and cold spring, with road weight restrictions maintained well into late May. The average temperature for the year was 43.4°F or 1.3°F above normal. A total of 22.86" of precipitation occurred, which is just below normal.

Quarterly summaries are as follows:

October-December. A mild October was followed by two months of snow and cold. Harvesting was completed on time; only the second time since the wet cycle began in 1992. Much above normal snow of 28.7" fell during November and December, compared to the norm of 13.5". Numerous flights of swans overflowed or rested on the refuge from November 5th - 8th. All refuge wetlands were frozen by November 8th. The cold continued through December.

January - March. A very warm and dry January was followed by a rather cold and snowy February. Well below normal temperatures continued in March, but little snow fell. The first migrants: swans and Canada geese were not seen until relatively late on March 19th. Diving ducks and mallards were not seen until the first week of April, which is 2 - 3 weeks behind schedule.



April - June. Temperatures in April were near the norm, but wet conditions returned. The major influx of migratory waterfowl, including loons, occurred on April 19th, which is about 4 - 5 weeks later than the norm. May was wet and cold, as was early June. Seeding on neighboring farms was far behind schedule. Migrating diving ducks and avian predators migrated behind schedule, not leaving the area until early May. Shorebird species diversity and numbers were very low through mid-May, but increased dramatically on May 17th. Construction was hampered by the wet May.

July - September. A moderate and relatively dry summer prevailed. Wetlands began drying, but were recharged by September thunderstorms. The wet pools kept waterfowl dispersed through the fall.

CLIMATOLOGICAL DATA - FY01							
Month	Max.	Min.	Avg.	Depart from 30 Year Norm	Prec.	(Snow)	40 Yr. Norm
October	75	15	45.9	+ 0.3	1.66		1.25
November	67	-01	26.6	- 1.4	3.91	(15.3")	0.76
December *	33	-21	1.6	- 10.1	1.22	(13.4")	0.75
January	42	-08	19.1	+13.2	0.09	(3.1")	0.63
February	37	-26	8.9	- 4.9	0.71	(11.6")	0.56
March	49	-07	26.9	- 5.7	0.14	(1.6")	0.89
April	82	19	43.2	+ 0.1	2.77	(12.0")	2.17
May	88	34	55.4	- 0.8	2.99		2.70
June	94	42	63.9	- 2.9	1.56		4.34
July	97	38	69.8	- 0.6	2.57		3.69
August	93	33	67.4	- 1.4	1.86		3.87
September	91	30	60.2	- 2.4	3.38		2.33
TOTAL			43.4		22.86		23.94

* 3rd coldest December on record

1 - MONITORING AND STUDIES

1a. Surveys and Censuses

Significant general wildlife occurrences at Hamden Slough NWR in FY01:

- First confirmed nesting of 3 bird species on the refuge, included:
 1. Marbled godwit
 2. Wilson's phalarope
 3. American bitterns
- Excellent spring and summer shorebird viewing. Twenty-two (22) species were observed on a regular basis. This included multiple observations of rare species such as stilt and solitary sandpipers, as well as semi-palmated and migrating black-bellied plovers. Participants in the May Birding Festival Shorebird Workshops were delighted with the diversity and numbers present on Bisson Lake. Hudsonian and marbled godwits were observed, next to the County road, feeding with phalaropes, dowitchers, and many species of sandpipers.
- Solitary sandpipers were observed throughout the summer and may be nesting on the refuge. Long-billed and short-billed dowitchers were observed more often and in increased numbers.
- 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 around the south end of the refuge. Ample numbers of coot and waterfowl provide them with excellent hunting opportunities.



#01-06-25. Hudsonian and marbled godwits were put on many "life lists".(MTM 05/01)

1b. Studies and Investigations

US Geological Survey: After the 1997 flooding of the Red River Valley, the US Geological Survey (USGS) began investigating sites to begin a study of water balance and wetland restoration potential to increase/decrease flood effects. The 1996 - 1999 seepage analysis completed by North Dakota State University (NDSU) at Bisson Lake generated significant interest by the National Soils Laboratory, Lincoln, NE, and the USGS, in groundwater movement. NDSU's seepage analysis allowed USGS to account very closely for the ground water portion of their water balance model. In 1998, 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. Since 1999, USGS collects, modifies and updates 4 computerized water monitoring stations, on a yearly basis. 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.

North Dakota State University: North Dakota State University (NDSU) began a study on soil changes related to wetland restoration. An official title for the study is to be determined. NDSU is particularly interested in the capacity of soil to retain water around wetlands. The University's earlier refuge seepage study indicated that soils can retain far more water than previously understood. There is some suggestion that more water is retained in the soil around a wetland, than the surface capacity of the restored wetland itself. In June, soil sampling and mapping was begun by a PhD. candidate, who was assisted by foreign graduate students.



#01-11-11. Graduate students and refuge personnel begin learning about soil's water storage capacity. (MTM 6/01)

2 - HABITAT RESTORATION

2a. Wetland restoration: On-refuge

In October, the last 16 refuge wetlands 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). The refuge portion of North Star 2000 includes Bisson Lake and the surrounding 129 refuge wetlands. A permit has been issued for the remaining 90 WPA wetlands. The North Star 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, 2000. Three additional wetlands were restored near the refuge office with major assistance from the nearby Tamarac refuge crew.



#00-30-05. The last few North Star 2000 wetland restorations being completed on the refuge. (MTM 10/00)



#00-30-19. Tamarac EO Tom Franklin building a ditch plug on the south end of the refuge. (MTM 10/00)

Wetland restoration: Off-refuge

A 13 acre wetland was restored adjacent to the Lake Park/Audubon (LP/A) Elementary School. The wetland is part of a 34 acre environmental "living laboratory", being developed with multiple partners in cooperation with the LP/A District School Board. The water control structure was designed for operation by the school students. The students use a Water Management Plan developed by the refuge, and use their own math and biological observations for water manipulation. Stoplogs for the water control structure were built with DU funding and delivered to the school in September, 2001. The refuge had the stoplogs painted in the school colors; red, black, and grey, and emblazoned with the school logo - a one-eyed pirate. Refuge personnel assisted with the survey and design of the restoration, and the "sweat equity" of obtaining permits, funding, an engineering design, contractor bidding, and community consensus for a water control structure, on a State Protected Wetland, inside the city limits. Numerous discussions were held with State personnel, County Commissioners, city council members, teachers, contractors, and school board members who had questions and concerns about many facets of wetland restorations in an urban area. This was the first wetland restored off the refuge, by Hamden Slough personnel. A 2002 spring dedication is planned for the site. (5.a)



#01-12-13. 34 acre "living laboratory" with water control structure, being built adjacent to school, within Audubon city limits. (MTM 07/01)

2b. Upland restoration: On-refuge

In mid-March, 55 acres were seeded with native grass, on cropland 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 55 acres of former cropland was sprayed in May with Round-up to reduce quack grass. The intention was to spray the quack grass and not affect the germinating grass seed. Snow seeded fields are checked during the spring and summer, and demonstrate more successful cover and diversity, than traditional spring seedings with drills. Wet spring conditions since 1992, have prevented traditional spring seeding and spraying, allowing only moderate success with the older methods of establishing grass.

An additional 80 acres of previously seeded native grass was inter-seeded to enhance cover. The inter-seeding area had been dormant seeded in November 1998. Record warm temperatures in December of that year, appears to have caused some seed to break dormancy and freeze during that winter.



#01-04-03. Looks like winter on top of snow. But first 1/4" of soil is soft and wet, allowing very successful seed germination. (MAH 3/01)

Eleven (11) wildflower "starter sites" were hand seeded in late May. A total of 48 wildflower sites have been planted on the refuge, and are beginning to flourish and attract insects. Insects are important in beginning the spring protein food web. At \$200/lb., and a recommended rate of 5 lbs. per acre, diversifying large tracts of restored prairie with seeded wildflower is cost restrictive. But the refuge staff and volunteers are encouraged by a prairie remnant site, where wildflowers spread into former cropland. The "starter sites" of 0.1 - 0.25 acre each are an attempt to speed up and duplicate that process. Will forb diversity be reflected in bird counts of the future?



#01-09-13. AT Hendrickson seeding wildflowers at small "starter site". (MTM 05/01)

Upland restoration: Off-refuge

Thirteen (13) acres of cropland at the LP/A Elementary School conservation site were snow seeded with native grass and wildflowers in March. This is the first off-refuge upland restoration done with Hamden Slough personnel and equipment. Grass and wildflowers response was impressive. (2.a)(5.a).



- #01-04-17. Tractor Operator Bob Scherzer using Vicon spreader, near Audubon school, to apply grass seed over snow. This method much preferred over battling with spring mud, requires no seed cleaning, and cuts personnel time. (MTM 3/01)

3 - HABITAT MANAGEMENT

3a. Water level management

In April, 2001, Bisson Lake was re-flooded for the first time since 1907. The lake's water control structure was completed in September, 2000, with major funding from DU. Bisson Lake was designated as DU's Northwest Minnesota's 2000 Flagship Project. The lake was not re-flooded in the fall of 2000, to allow \$200,000 in road improvements to settle, prior to flooding. Road improvements were required for Becker County Roads #13 and #14, which intersect in Bisson Lake.

3b. Moist soil management No activity this year.

3c. Graze/mow/hay

Three haying permits were issued to remove 155 acres of grass from Hamden Lake. The haying enhances the spring production of grass shoots in shallow water, attracting waterfowl and shorebirds. During drier springs, prairie chickens have been observed "booming" in the lake's hayed grass. No grazing permits were issued in FY01.

3d. Farming

Farming was authorized on 6 tracts totaling 338 acres through the cash rent program. Special Use Permits (SUP) for cash rent were issued to prepare cropland for grass seeding, or as a depredation lure crop.(2.b). The SUP's rent is reduced, if a food plot is maintained on the farmed tract.

2001 FARM SUMMARY

Cooperator	Tract	AC	Fee	Crop	Permit Dates
A. Anderson	10 &11	80	\$30	soybean	2001
J. Hass	#11	15	\$30	corn	2001
J. Steffl	#34	170	\$30	soybean	2001
T. Andresen	#12	45	\$30	soybean	2001 - 2004
J. Flottesmesch	#44	28	\$30	small grain	2001 - 2003

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 were raised to \$30 acre.

3e. Forest cutting - No activity this year.

3f. Fire Management

The Hamden Slough fire crew assisted Tamarac firefighters on 2 of their larger prescribed burns. Firefighter Mary Hendrickson also assisted the Detroit Lakes WMD crew with two prairie fires.

3.g Pest plant control

All 1996 - 2000 grass seedings were mowed or partially mowed at least twice, to reduce invasive broadleaf competition. 1996 - 1997 grass seedings had reduced thistle this year, allowing minimal mowing on some fields. 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 260 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. Re-introductions - No activity this year.

4d. Nest structures

The 40 box, blue bird trail had 3 successful bluebird nests. Boxes are paired to use tree swallows for biological control of starlings and sparrows. Tree swallows used 21 boxes. Twenty-four (24) wood duck nests were checked and cleaned in March. No woodduck broods were observed in 2001.

Of 8 over-water baskets, 5 had successful Canada goose or mallard nests. Two unused baskets had metal bands put over them, to make them less attractive to geese, and encourage duck use. Of three baskets at the Audubon School, two had successful mallard nests.

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

5 - COORDINATION ACTIVITIES

5a. Interagency coordination

In September, 2001, the Lake Park/Audubon Elementary School Wetland Education Demonstration Site was completed on 34 acres of former cropland. This "living laboratory" is adjacent to the elementary school and inside the city limits of Audubon, MN. The area was restored with: a water control structure on a 13 acre wetland, 13 acres of native prairie grass and wildflowers, oak savanna modeled shelter belts, wildlife shrub and tree plantings, and nesting boxes. Many local, state, and federal agencies, conservation clubs, local individuals, as well as students, were partners in planning, funding, and restoration of the site. Total team contributions of labor, materials, and funds is valued at \$41,215. The water control structure was designed for operation by the school students. The students use a Water Management Plan developed by the refuge, and use their own math and biological observations for water manipulation. Stoplogs for the water control structure were built with DU funding and delivered to the school in September, 2001. The stoplogs are painted in the school colors; red, black, and grey, and are emblazoned with the school logo - a one-eyed pirate. Refuge personnel assisted with the survey and design of the restoration, and the "sweat equity" of obtaining permits, funding, an engineering design, contractor bidding, and community consensus for a water control structure, on a State Protected Wetland, inside the city limits. Numerous discussions were held with State personnel, County Commissioners, city council members, teachers, contractors, and school board members who had questions and concerns about many facets of wetland restorations in an urban area. This was the first wetland restored by Hamden Slough personnel, off the refuge. A 2002 spring dedication is planned for the site. Accessibility trails and interpretive signs are planned for development in 2002 - 2004.

Project and funding partners include:

- Audubon Elementary School Students and Teachers
- Becker County Commissioners
- Becker County Soil and Water Conservation District
- Buffalo-Red River Watershed District
- City of Audubon
- Cormorant Lakes Sportsmen's Club
- Duck's Unlimited
- Lake Park/Audubon School District
- Minnesota Department of Natural Resources
- Natural Resource Conservation Service
- Joe Stenger (Contractor contribution)
- St. Olaf College (SNAP Grant)
- West Central Minnesota Joint Powers Board



#01-12-24. SWCD personnel assisting contractor with installation of school's water control structure. (MTM 07/01)

North Star 2000 was a multiple partnership, 3 year project to restore 220 wetlands and 1000 acres of upland, on Service property, by FY00. During FY00, 100 acre Bisson Lake and all remaining wetlands were to be completed. It was close. Bisson Lake was finished in September, 2000. In October, the last 16 wetlands of the refuge's 130 wetlands were finished. Ninety (90) wetland restorations on the Matter WPA remain to be done, but the Watershed District permit is in hand. (2.a). Major funding partners for North Star 2000 included: Buffalo-Red River Watershed District, Duck's Unlimited, Minnesota Waterfowl Association, National Fish & Wildlife Foundation, North American Wetlands Conservation Council, and the Red River Water Management Board.

5b. Tribal coordination - No activity this year.

5c. Private land activities

A 230 acre private land tract in the refuge's designated lease zone was purchased by local sportsmen, who want to reduce cropping and begin some restorations. Potential wetland and upland restorations were mapped in 2000, with the landowners interested in permanent easements. A wetland easement was purchased on a 70 acre wetland in 2001. Combining forces with the Natural Resource Conservation Service and the Becker County Soil and Water Conservation District, the refuge developed optional maps and plans for different mixes of restorations, cropland and hunting sites. The owners finally selected the option of restoring 11 wetlands and 65 acres of upland around the wetlands. Refuge personnel surveyed the wetlands in September, for development of a Watershed District permit application.

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

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

6 - RESOURCE PROTECTION

6a. Law enforcement

The Minnesota Department of Natural Resources (DNR) began issuing goose depredation permits in May, 2000, which allowed farmers to take 20 geese to protect their crops. Compliance monitoring was not done, by either the DNR or refuge personnel. By July of that year, rumors were abundant, and the Becker County paper announced in a headline article that 20,000 geese had been taken in the county. The credibility of the story was in doubt, but it certainly got people's attention. In May, 2001, refuge and DNR personnel discussed how to better monitor compliance for the spring and summer. The assignment of a new DNR Conservation Officer to the area was helpful. Some landowners were still disturbed by the presence of any Canada geese, killing them first then requesting a permit, or shooting geese in areas with no crops. Patrols, checks, and investigations got the word around that compliance with the terms of the permits was being enforced.

Some landowners were still disgruntle. On Memorial Day, May 28th, three mature Canada geese were killed by shotgun on the refuge. The 3 geese would feed with 3 goslings, and were seen daily in Bisson Lake, next to County Road #14, by local conservationists and neighbors. Local residents called RO Murphy, who retrieved the geese, collected evidence, and spoke with nearby landowners. Neighbors were suspicious of a landowner and his sons, who had been annoyed and vocal about geese and the permit system. The three goslings were never found. Increased patrols, daily evidence collection, and interviews about depredation permit non-compliance were noted positively by most surrounding landowners. On May 30th, a seed salesman observed two males firing a pistol from their vehicle, while parked in Bisson Lake. They were stopped by a Becker County Deputy Sheriff and the pistol seized. They stated they had shot a "black bird". RO Murphy retrieved a freshly killed American coot in the lake. State and federal citations were issued. On June 4, personnel from multiple agencies reviewed depredation permit compliance, directed additional landowner interviews, and drafted a news article. Depredation compliance and complaints were substantially reduced from 2000, especially after neighbors read that a prominent Fargo lawyer and his son had been cited and their weapon seized. The culpability for killing the Bisson Lake geese was not resolved.

On June 21, a mature Canada goose and her 2 goslings were killed on County Road #14, about 5 miles west of Bisson Lake. That section of road is gravel and runs through a DNR Wildlife Management Area. The road is low and wet, with a wetland sitting high on both road embankments. RO Murphy responded to the site at the request of the DNR. He gathered evidence and re-constructed the event. The geese were killed by a vehicle traveling at a very unsafe, high rate of speed though the wet gravel. A vehicle description matching the truck of the vocal landowner's son had been seen, but was too vague for confirmation.

In August, RO Murphy stopped a suicidal male with a shotgun. The male was despondent over losing his job and had been drinking. He earlier had aimed the shotgun at a County employee, but discharged the weapon into the ground. He left the assault site with the weapon, riding a yellow ATV. Deputies were looking for him, but were hampered by heavy radio traffic. Radio traffic was intense with police and medical calls for WE Feast Weekend. WE Feast attracts 50,000 fun loving county-western fans to the Detroit Lakes area, for 3 days of music. While patrolling, RO Murphy observed the yellow ATV and male proceed through a stop sign at a high rate of speed, heading west toward Audubon, just 2 miles away. He attempted to stop the ATV, but the male drove off the road and evaded pursuit in heavy brush. The male attempted to escape on the ATV, repeatedly moving away from the refuge truck. RO Murphy was able to keep the driver bottled up until deputies arrived. When officers surrounded the area in force and proceeded to enter the brush, the male surrendered. The suspect was sent to the Fergus Falls Regional Health Center for a psychological evaluation.

Other LE events:

- Rendered assistance to 2 vehicles in the ditch, during February.
- Assist DNR CO investigating report of poached deer, in March.
- Checked hunting trespassers on private land, adjacent to the refuge, in September

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. Hunters are a bit confused by the state's 2 year old electronic license system, and electronic stamps, but are catching on. Some instructions were helpful.

FY01 violations include:

Violation	Code	#	Fine
Unplugged shotgun	20.21(b)	1	juvenile*
Unsigned federal waterfowl stamp	16US718	1	juvenile*
Hunting w/o state small game license	32.2(d)	1	juvenile*
No federal waterfowl stamp	16USC718	1	juvenile*
Unlawful use of firearm	50CER27.41	2	\$400

* - Case referred to DNR Conservation officer

6b. Permits & economic use management

An EA and R-O-W for 500' of improvements to Becker County Road #14, adjacent to the refuge, was approved by the Regional Office, in September, 2000. No wetland was involved. During FY01, the County began the road project and mitigated upland disturbance by building an access road to the eastside of Tract #44a. The access allows better management of that tract. That portion of the tract was previously only accessible across private cropland. The access was completed in September, 2001.

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

The possible exchange of land was discussed with two landowners, who hold property inside the refuge designated boundary.

6h. Land acquisition

The Service's Fergus Falls Realty Office made an offer for one tract of land. The offer was rejected.

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

The refuge's largest visitor influx is during the Detroit Lake's May Birding Festival. This year was no different with a bus tour and 4 separate workshops taking place on the refuge, during the 3 day event. Interest was stimulated by enthusiastic reports of 1998 - 2000's refuge tours, as well as, small articles on Hamden Slough and letters to the editor, in several birding publications. Demand for the workshops was intense as Ken Kaufman, noted birding author, was anticipated to take part in several of the workshops. Two sparrow and 2 shorebird workshops were planned. On Wednesday, May 16th, prior to the Festival, sparrow diversity was good, but very few shorebirds were present due to a cold May. Festival coordinators began surveys in 3 counties looking for any shorebird activity. As if on cue, abundant numbers and many species of shorebirds poured in to the refuge on Wednesday afternoon and Thursday. Birders participating in the Friday Shorebird Workshop were delighted with both diversity and numbers. Hudsonian and marbled godwits, Wilson's phalaropes, dunlin, and short-billed and long-billed dowitchers feed for the weekend, adjacent to the road in Bisson Lake. An elusive La Conte's sparrow was heard, but only briefly glimpsed during one Sparrow Workshop. Many visitors were elate to observed one or more "life list" bird during the workshops or refuge tours.



#01-08-10. Shorebird Workshop elates participants with "life list" birds. (MTM 5/01)



#01-07-22. Sparrow Workshop easing up on a La Conte's sparrow. (MTM 5/01)

In November, 50 of the world's foremost soil scientists toured the refuge to review ground water movement in glacial terrain. The tour was lead by Drs. Jim Richardson and Cheryl Feigum, from North Dakota State University, who have been developing "state-of-the art" techniques to measure ground water movement, since 1996. With some skepticism of their results, the scientists were particularly intrigued by ground water movement adjacent to Bisson Lake. A 100' long trench was dug adjacent to Bisson Lake for the tour. Several scientists stated that Bisson Lake was "...the best place in the world to see groundwater movement." In 1999, the National Soils Lab conducted an similar trench survey adjacent to Bisson Lake. Results of that work are described by soil scientists as a "...quantum leap forward..." in knowledge, and "...future text book material."

The Hamden Slough tour was held to begin the National Soils Convention, held in Minneapolis, from November 5 - 9. The Soils Convention, sponsored by the Soil Scientist Society of America, the Crop Scientist Society of America, and the Agronomy Society of America, hosted 6000 attendees from around the world.



#00-31-05. Soil scientists learning about ground water analysis prior to National Soils Convention. (MTM 11/00)

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 and wetland discovery. 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. The students usually aren't the only ones discovering the refuge. The refuge staff also learns a few things, as youthful eyes see in different hues and "outside the box".



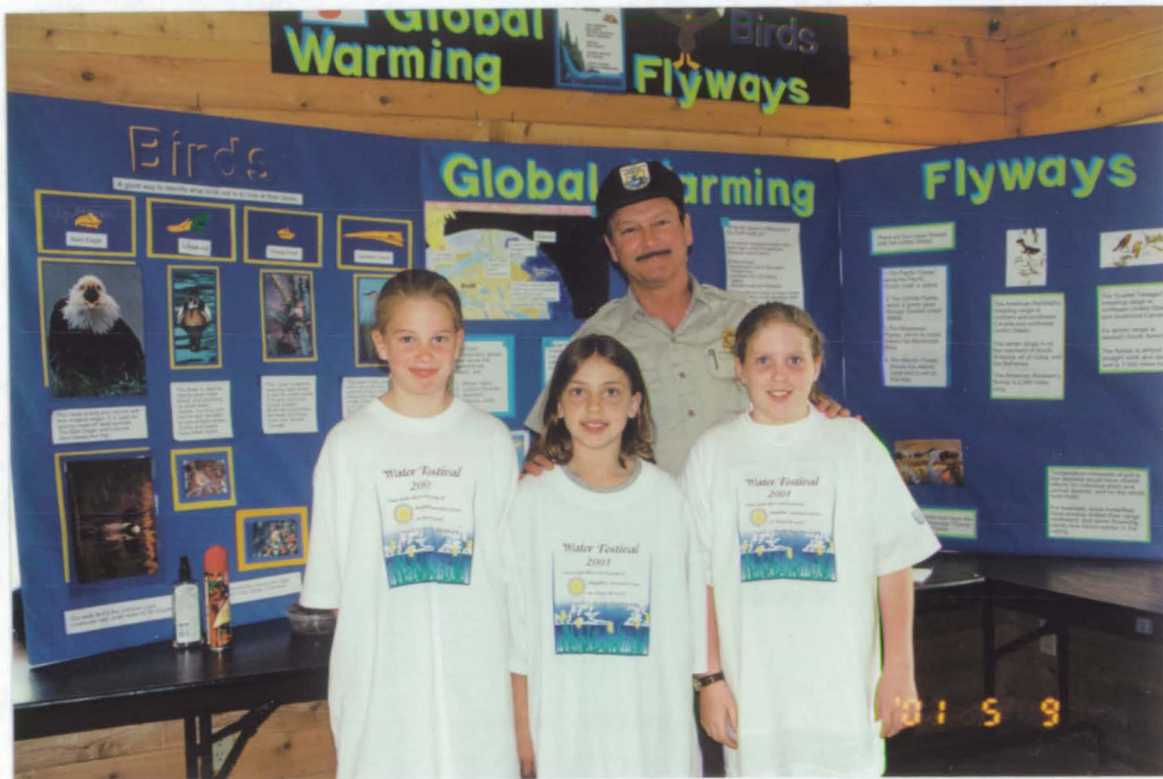
#01-06-18. Cold weather never reduces the enthusiasm of SKIP Day students.
(MAH 05/01)

A Japanese graduate student Hidehito Kobayashi, from the Kyoto University visited Hamden Slough refuge for 2 days in November. Mr. Kobayashi was reviewing the NWR System, it's organization, governmental support, and funding. Various programs, including the Pittman - Robertson Act, Dingle-Johnson Act, Duck Stamp Act, LWCF Funds, and Refuge Revenue Sharing were reviewed. Mr. Kobayashi and the University were particularly interested in the development of a refuge in an initially hostile, agricultural community. Community perceptions and involvement were discussed at length. Mr. Kobayashi and the University are looking at the development of a refuge on the northern Japanese island of Hokkaido. All wolves have been eliminated on this island and deer populations have become a problem. Mr. Kobayashi spent a month in the United States and also visited Alaskan refuges. No system of wildlife refuges currently exist in Japan.



#00-31-09. Is this the "Paul Kroegel" of the future Japanese Fish and Wildlife Service?
(MTM 11/00)

Detroit Lake's Rossman Elementary School has developed an exceptional conservation program for 4th - 6th Grade students, using The Groundwater Foundation's process of "...create a legacy of groundwater protection through local action, education, and government service." RM Murphy was asked to be a mentor for students interested in water and wildlife. They learned as much as he did. He assisted them in sorting through information and developing a presentation. They showed him how to use the computer and internet. Students were delighted that they could leave school for a refuge tour and off-school presentations. In September, Rossman School was selected as the first elementary school in the U.S. to be designated as a National Groundwater Guardian. The Groundwater Foundation, begun in 1985, has previously only awarded the honor to individuals and high schools.



#01-06-10. National Award winning students pose with mentor after first presentation.
(MAH 05/01)

North Dakota State University 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.

Other refuge tours included:

- Audubon 4th Grade students, after birding slide show orientation. (October).
- North Star 2000 tour for DU State Coordinator Tom Landwehr. (November).
- Birding and wetland tour with Twin Valley elementary students. (May).

Hunter interest continued high around the restored north and south end of the refuge. All refuge property was closed to hunting in FY01, 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. 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 deer populations have returned to near normal. The Zone #297 deer population is still low. 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.

7b. Outreach

During May, the refuge staff and volunteers participated in the 5th Grade Conservation Tours for 478 students, sponsored by the Becker County Soil & Water Conservation District. AT Hendrickson and NDSU Biology Student Tom Murphy acted as a guides/interpreters between the tour's 6 sites. They worked with over 300 high energy, Becker County students from 8 schools, during 3 days of tours. RM Murphy provided 8 LE demonstrations for 1 day, and guided on another.

The following programs were also given:

- Slide presentation to 27 members of the Retired School Teachers Association (November).
- Program on the NWR System and flyways to Detroit Lakes 4th grade. (February)
- Slide presentation to 65 members of the Detroit Lakes Noon Kiwanis (April).

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	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, work with visitors and neighbors, count waterfowl, and answer the phone.

Ten teenagers from the SpringHill Group Home worked on the refuge during part of 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 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 2001, the CEP crew volunteered 240 hours at Hamden Slough National Wildlife Refuge. A split rail fence was installed at the new maintenance building site and general maintenance work accomplished around the refuge headquarters.

Mary Wyatt continues to volunteer valuable time and expertise to the refuge. She was the first to observe Marbled godwits, Wilson's phalarope, and American bitterns nesting on the refuge.

Off refuge water control structure and refuge storage building constructed with retired Civil Engineer Jim Elletson, acting as contract representative under direction of Refuge Manager.

All refuge volunteers provided 792 hours of work in FY01.

Volunteer achievements included:

- * tour guides for conservation tours
- * building construction management
- * bird surveys and censuses
- * wetland hydrology and soil impacts measured





#01-11-24. Volunteer Jim Elletson, retired civil engineer, surveys school water control structure site with RM Murphy. (MAH 07/01)



#01-17-00. Volunteer Mary Wyatt, a six year refuge veteran, and one of best birders in Becker County, assists with bird surveys. (MTM 9/01)



#01-12-07. First new refuge building will replace old quonset storage facility. (MAH 07/01)



#01-16-24. This is still called a "pole barn"? The workmanship was exceptional.
(MAH 07/01)

FUNDING - FY 1997-2001 (Thousands of Dollars)					
Activity	97	98	99	00	01
1221 - Drug Intervention	.5				
1230 - Non Game	.3				
1234 - NAWMP		10.0	7.5		
1261 - Base	104.5	138.7	124.2	200.3	152.4
1261 - Congressional/RONS		25.0	60.0		
1262 - 3110 -Radios					27.6
1262 - MMS Mtc.	7.5	42.9	80.7	115.0	25.0
2957-E3HK - Floodk	15.0				
2957-E3HM - Flood	55.0				
3110 - Realty	5.0	5.0	5.0		
8451 - Realty	5.0				
7201-0524 - NFWF					5.0
9251- Fire	1.0	1.7	2.3	2.7	3.0
30130-1261 - Permit	7.5				
Challenge Grants	6.0	25.0	46.7		3.5
TOTAL	206.8	248.3	326.4	318.0	216.5

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 \$250,000/year and 4 FTE's. Challenge Grants are slowly chipping away at refuge construction.

Community Vision Arises from Ashes of Wetland Wars

Old beliefs die hard. But they do die. And their passing has allowed a community vision to rise from the ashes. Citizens of Audubon, MN, and surrounding farms saw little value in a proposed new refuge in 1988. Loss of neighbors and taxes, crop reduction and economic impact, uncaring bureaucrats, and the strong arm of the federal government were only a few of the concerns voiced over morning coffee at the local café. Public meeting that year would be described politely as angry, belligerent, and tense. The refuge staff arriving in 1990 were unwelcome. On several occasions threats were made.

But a decade allows time for change. Bonds with community leaders and local landowners grew in small increments. School children were delighted with returning eagles, broods of ducks, and muddy walks on beaver dams. The excitement of their small voices surprised parents at the evening meal. Refuge employee's credibility grew with honest words, long hours, and constructive attitudes. Landowners noted an increasing number of visitors and hunters attracted to the area.

By 1999, old beliefs were largely gone and new alliances were forming. The Lake Park/Audubon School District had just received 34 acres of farm land adjacent to the school, as a gift from Becker County. The land was inside the city limits of Audubon. Discussions on it's use, value and potential returns evolved with an increasing numbers of interested parties and creative concepts. Would continued farming provide a financial return to the strained school budget? Would city development be enhanced by expansion on that area? How about expansion of the industrial park? Could school children use the land as an outdoor classroom? In the end, the school board decided as all good school boards do: using the land to educate students for the future was their goal.

Was a "living laboratory" adjacent to the school and in the backyard of city residents possible? So many ideas, and so much to do. And the negatives. So little knowledge! How could it be done! The budget just won't allow it to happen! An outdoor classroom champion arises from an old refuge foe. He draws on the expertise of county, state and refuge personnel. Numerous meetings with and between multiple agencies allows a wide review of available funding, resources, and expertise. Excitement grows along with a plan. Can a drained, cattail infested wetland be restored within city limits? Shouldn't the site include native prairie with wildflowers. Are shelter belts valuable to soils? To wildlife? Can they be adapted to represent nearby remnants of the oak savanna? Many discussions, many meetings, many modifications. Details are worked out.

In 2000, federal, state, and city fire units display their craftsmanship with a prescribed burn. School children watch from a safe viewing area. Neighbors from their kitchen windows. The work has begun. Are perceptions of the refuge changing? Some still unimpressed, say it won't happen.

A new century begins with 2001. Work advances on engineering drafts, permits, partnership funding, easements, supplies, details. Native prairie is snow seeded in March. Bird houses placed in April. Oakes planted in May. Stakes painted white and signed by a student stand by each tree they have installed. Construction of the water control structure begins in June.

In July, a refuge truck arrives at the work site. Neighbors smile, dogs bark, children wave.