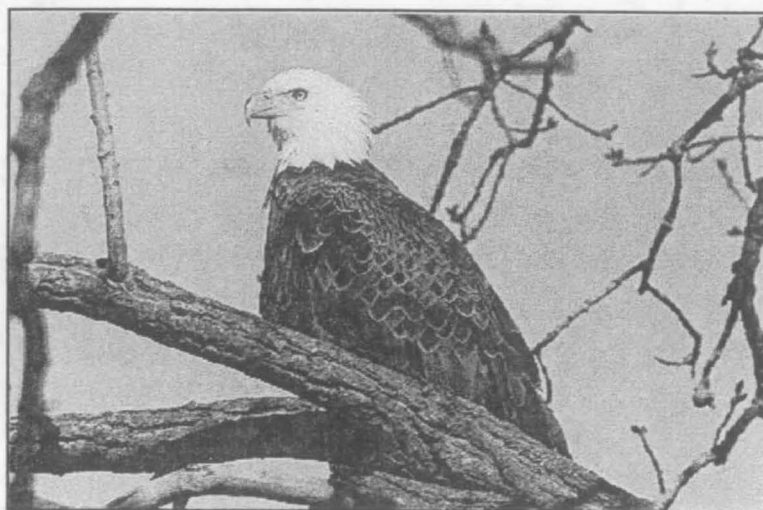


Minnesota Valley National Wildlife Refuge

Bloomington, Minnesota Fiscal Year 1998



Close to 100 migrating bald eagles stopped in to take advantage of a natural fish kill on Grass Lake of the Upgrala Unit. Hundreds of visitors came to view this brief, but spectacular phenomenon in March 1998. Photo by Claude Sinnen (Refuge visitor).

Rick Schultz 5/5/99
Refuge Manager Date

John A. Blumensiefel 5/10/99
Geographic ARD Date

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INTRODUCTION

Minnesota Valley National Wildlife Refuge (Refuge) was established in 1976 to preserve the Lower Minnesota River Valley. It resulted from the effort of a local citizen group, specifically, the Friends of the Minnesota Valley.

The Refuge, located in the Twin Cities metro area of Minnesota, is linear and extends 34 miles along the Minnesota River (Map 1). It currently encompasses 10,514 acres in eight separate units. The Refuge Mission is to restore and manage the ecological community of the Lower Minnesota River Valley and its watershed while providing environmental education and wildlife dependent recreation. The Refuge is a green belt of large marsh areas bordered by grain terminals, highways, residential areas, office buildings, and farm fields.

The wetland habitat includes fens, seeps, and marshy lakes along the cottonwood-lined Minnesota River. The valley's bluffs rise about 150 feet above the floodplain and the habitat ranges from prairie to oak savannah to oak dominated forests.

Wetlands are thick with sedge meadow, cattail, and river bulrush. Water lilies, duckweed, and pondweeds thrive in open water areas. More than 250 species of birds use the area, either year round or during migration. About 150 species nest in the valley. Bald eagles use the area for nesting, resting, and feeding. The avian diversity is complemented by at least 50 species of mammals and 30 species of reptiles and amphibians.

Forested areas on the floodplain are dominated by silver maple, willow, cottonwood, and elm. Small willows, dogwoods, and alders line forest edges. Inside the woods, there is a carpet of nettles with occasional river bank grape. Hillside forests include an over story of ash, elm, oak, and other trees, with dogwood, chokecherry, and other shrubs beneath.

Shrubs such as sumac, hazel, and prickly ash encroach on the dry grasslands. Remnant prairies and savannas provide nesting habitat for dabbling ducks, wild turkeys, and a variety of songbirds. Native prairie grasses include big and little bluestem, switch grass, and Indian grass.

The focal point of the Refuge is the Visitor Center, which features an 8,000 sq. ft. exhibit space, a 125-seat auditorium, a 1/4 mile loop hiking trail to the river valley, two multipurpose classrooms, a bookstore, and an observation deck. Environmental education and interpretation opportunities are conducted from this facility. Recreational activities such as hiking, cross-country skiing, hunting, and fishing occur in many areas of the Refuge.

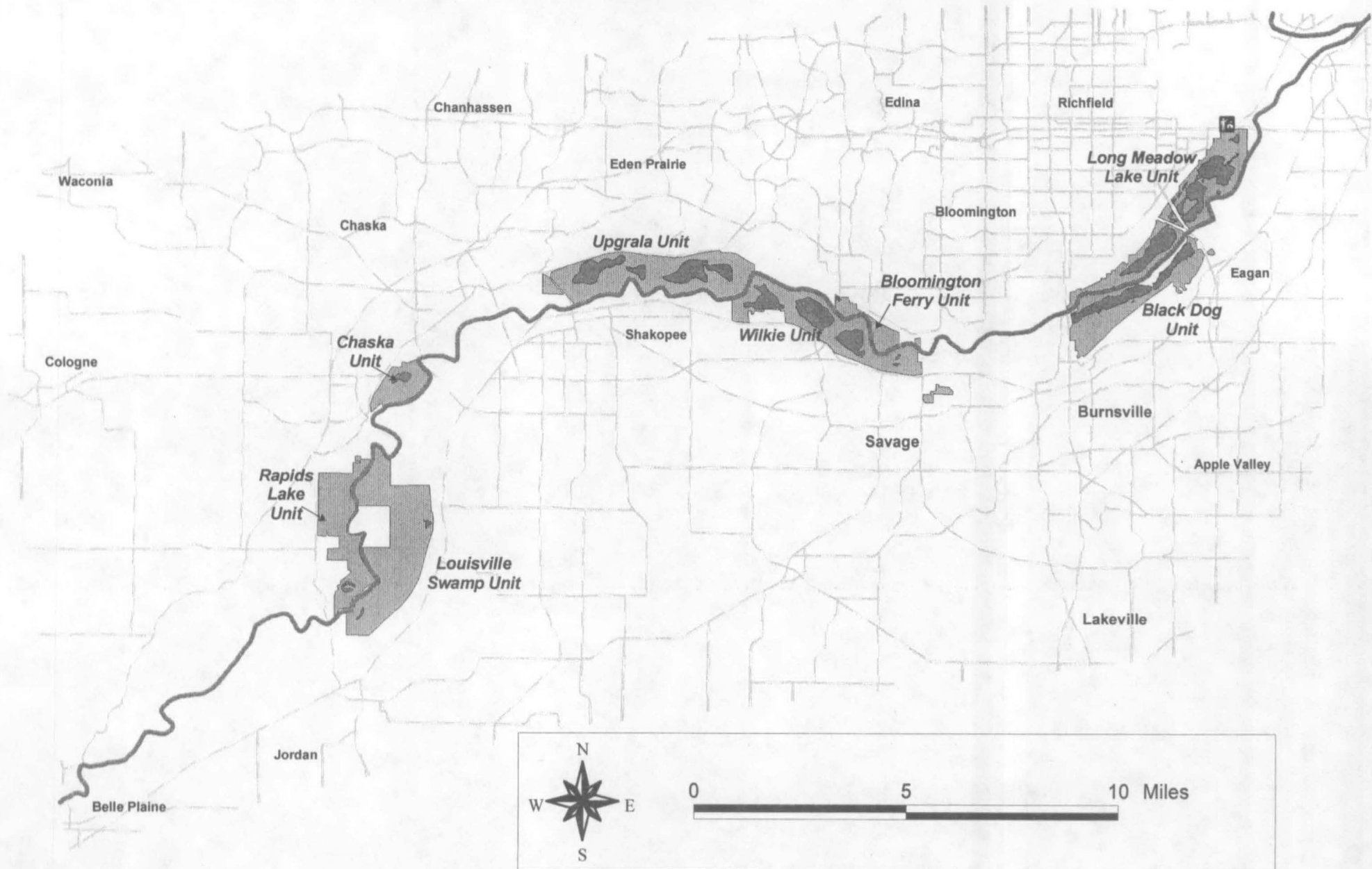
The Refuge also manages a 13-county Wetland Management District (WMD) that extends from Chisago County north of the Twin Cities to Blue Earth County south of Mankato (Map 2). Within the District, the Service manages 2,248 acres of Waterfowl Production Areas and over 1,230 acres of wetland, habitat, and FmHA easements. Outside of the metro area, the historic land use is intensive

agriculture, mainly corn and soybeans. Most of the wetlands in the district have been drained for agriculture. Remnant habitats found throughout the district include tallgrass prairie, prairie pothole, floodplain forest, upland forest, and oak savanna. As the population of the metro area increases, much of this area is being converted to suburban homes, hobby farms, and recreational areas.



Photo 1. Visitors enjoying the Refuge overlook. Photo by Kathryn Cassem

Map 1: Units of the Minnesota Valley National Wildlife Refuge Authorized Boundaries



Map 2: Minnesota Valley National Wildlife Refuge Wetland Management District



Area of Interest

Chisago
4 - 349.07 acres

Washington

Hennepin

Ramsey

Carver
1 - 20.5 acres
1 - 219 acres

Scott
1 - 65.6 acres
1 - 40 acres

Dakota
2 - 12.9 acres
1 - 73.9 acres

Sibley
4 - 133.82 acres
3 - 521.87 acres

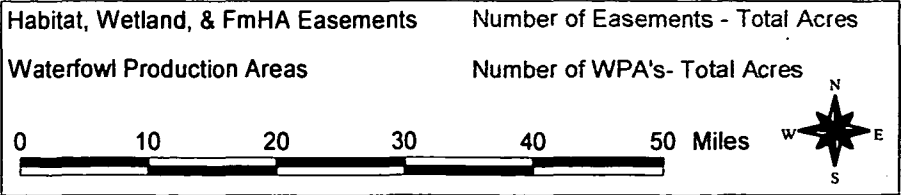
Le Sueur
6 - 220 acres
2 - 263.88 acres

Rice
7 - 226.38 acres
2 - 259.5 acres

Blue Earth
2 - 75.7 acres
2 - 546.98 acres

Waseca
1 - 21 acres

Steele
1 - 323.13 acres



Highlights

- Baseline vegetation monitoring was completed on the Rapids Lake unit oak savannah site (1a).
- A severe storm swept through the heron colony of the Wilkie unit on May 29th. More than 450 juvenile great blue herons and 45 adults perished in the storm (1a).
- Sixty one wetlands totaling 181 acres were restored on Waterfowl Production Areas and Refuge property. Fifty one wetlands totaling 264 acres were restored on various state, county, and private properties through the Partners for Fish and Wildlife program (2a).
- The Rice Lake Environmental Management Project on Rice Lake and Continental Grain Marsh of the Wilkie unit was completed. The project will enhance our ability to manage the water levels on these wetlands (3b).
- Refuge fire crews burned over 1,100 acres of Refuge and state lands during the spring prescribed fire season (3f).
- Negotiations with the Federal Aviation Administration and the Metropolitan Airports Commission over the expansion of the Minneapolis-St. Paul International Airport reached a successful conclusion (6h).
- Eleven new resource management based environmental education curriculum were completed for the environmental education program (7a).
- More than 1,000 entries were received for the Junior Duck Stamp competition which represented a 40% increase in the number of participants from previous years (7b).
- The Refuge developed a communications plan modeled after the national outreach plan. The goal of the plan is to increase the public's awareness of the Minnesota Valley NWR and the U.S. Fish and Wildlife Service and to enhance and improve the accuracy of information exchanged between Refuge staff and the public (7b).
- The Refuge initiated early discussions concerning the preparation of its Comprehensive Conservation Plan (CCP) (8a).

CLIMATE

The climate of the Minneapolis-St. Paul area is predominantly continental. Seasonal temperature variations are quite large. Temperatures range from less than -30 degrees to over 100 degrees. The growing season is 166 days. Because of this favorable growing season, all crops generally mature before the autumn freeze occurs.

The Twin Cities lie near the northern edge of the influx of moisture from the Gulf of Mexico. Severe storms such as blizzards, freezing rain (glaze), tornadoes, wind and hail storms do occur. The total annual precipitation is important. Even more significant is its proper distribution during the growing season. During the five month growing season, May through September, the major crops produced are corn, soybeans, small grains, and hay. During this period the normal rainfall is over 16 inches, approximately 65 percent of the annual precipitation. Winter snowfall is nearly 48 inches. Winter recreational weather is excellent because of the dry snow. These conditions exist from about Christmas into early March. Snow depths average 6 to 8 inches in the city and 8 to 10 inches in the suburbs during this period.

Climatological Review - 1998

Temperatures (in Fahrenheit)

Average high

Actual

58.1

Normal

54.3

Average low

39.5

35.3

Highest recorded: 94, July 13

Lowest recorded: -23, Jan 13

Precipitation (in inches)

Total for the year

33.39

28.32

Greatest in 24 hours

2.60, June 26-27

Snowfall (in inches)

Seasonal total, 1997-98

36.3

56.0

Greatest in 24 hours, 1998

4.0, Jan 26

Degree Days

Heating

Cooling

Actual

Normal

Actual

Normal

Total for calendar year

6558

7981

758

682

1

Monitoring and Studies

1.a. Surveys and Censuses

Significant wildlife occurrences at Minnesota Valley NWR in 1998 are summarized below.

Bald eagles have nested on the Long Meadow Lake Unit since 1986. One eaglet hatched at this nest in April. However, a severe wind storm in late May blew down the nest and tree. The eaglet and adult female perished in the storm. In addition, one eaglet fledged from the Wilkie Unit nest located near the great blue heron colony, and one fledged from the nest at the Rapids Lake Unit. In addition, we received reports that one eaglet was seen in a new nest which is located below the Issac Walton League Clubhouse east of Opus Marsh.

In March of 1998 a natural fish kill on Grass Lake of the Upgrala Unit attracted close to 100 migrating bald eagles. Hundreds of visitors came to view this brief, but spectacular phenomenon.

Peregrine falcons continue to utilize the hacking box located on the smoke stack of the Black Dog Power Plant which is surrounded by the Black Dog Unit of the Refuge. Two female falcons were fledged from this location in 1998.

Great blue heron production at the Wilkie Unit was an estimated 178 nestlings (Table 1). This dramatic decline in production can be attributed to a severe storm that went through the colony on May 29, 1998. More than 450 juvenile great blue herons and 45 adults perished in the storm, and many nests were blown out of the trees. Great egrets and double-crested cormorants appeared to survive the storm better than the great blue herons. Although a few dead great egrets (30 juveniles and three adults) and double-crested cormorants (10 juveniles) were observed, an overall increase was observed in these species. The number of double-crested cormorants increased from 7 to 30 nestlings, and great egrets increased from 14 to 61 nestlings. In addition, black-crowned night-heron nestlings increased from one to four. It appeared that the areas where these species were concentrated were spared by the storm.

Due to a very mild winter season, ice conditions on Refuge lakes and marshes were unsafe. Therefore, only one lake (Blue Lake) was surveyed for muskrat activity. Only visual counts of houses were conducted on other Wilkie Unit lakes/marshes (Fisher and Rice Lakes and Continental Grain Marsh). The 1998 fall population of muskrats on Blue Lake was lower than in the fall of 1997 (Table 2). However, this estimate may be low since staff conducting the survey could not reach the west end of the lake. The number of houses on Fisher Lake decreased this year (from 82 to 42) and the number of houses on Rice Lake increased (from 18 to 59). Continental Grain usage appeared to decrease from 300 to 170 houses. Since staff could not reach the remote areas of this marsh, this estimate could also be low.

Table 1. Wilkie Great Blue Heron Nestling Production Estimates from 1986-1998.

Survey Year	Winter # of Trees w/Nests	Usable # of Nests	# Nestlings Per Nest	Estimated # of Nests Used	Estimated Nestling Production
1986	254	639	1.50	279	418
1987	256	599	1.30	403	524
1988	218	630	1.70	330	561
1989	NO DATA				
1990	276	702	1.25	357	446
1991	230	716	1.40	246	347
1992	233	629	1.78	299	533
1993	233	604	1.89	421	796
1994	459	741	1.59	459	730
1995	301	766	1.42	536	762
1996	291	665	1.60	332	531
1997	247	654	1.35	340	459
1998	291	776	1.3	137	178

The 1997 total estimated fall population of muskrats on the Wilkie Unit (Rice, Fisher and Blue Lakes) was 141% higher than in 1996 (550 muskrats versus 228). Increases were observed on all three lakes, with the most dramatic increase occurring on Blue Lake (Table 2). Visual muskrat hut counts conducted on Continental Grain Marsh suggested high usage. More than 300 huts were observed and thirty-six of the sixty-five houses checked were active.

Table 2. Estimated fall muskrat population on three Wilkie Unit lakes.

	1991	1992	1993	1994	1995	1996	1997	1998
Blue	196	213	133	117	116	49	166	84
Fisher	50	204	154	103	90	167	364	No data
Rice	370	11	102	0	39	12	20	No data

Waterfowl and Waterbirds

The following information reflects trends observed in 1998.

Winter

Black Dog Lake is the most significant waterfowl wintering area on the Refuge due to open water created from warm water discharge of the Black Dog Power Plant. This area is primarily used by mallards with a total of 9,050 observed during the monthly winter counts in 1998. The one time peak count of 8,000 occurred in mid-December. Canada geese, common goldeneye, and common mergansers also were present.

Spring

Spring migration numbers were hard to determine due to flooding throughout April. During the first week of April, we were able to survey all Refuge sites and 16 species were observed. The most abundant species were ring-necked ducks, American coots, scaup, and canvasbacks. Migratory species were absent by mid-May which may have been due to abnormally high seasonal temperatures (low 90's). At this time, mostly summer nesting species were observed (mallards, wood ducks, blue-winged teal). Seventy black terns were also observed on Rice Lake.

Summer

Mallards, wood ducks, Canada geese, and occasionally blue-winged teal nest on the Refuge. Some special observations were of an immature little blue heron (*Egretta caerulea*) on Peterson Pond in June and 40 black terns on Rice Lake in July. In addition, hundreds of shorebirds were observed on the Upgrala and Chaska units in mid-August.

Fall

Fall migration appeared to begin in mid-August with the appearance of blue-winged teal. In 1997, peak numbers occurred the first week of October due to 26,194 American coots observed at Refuge observation points. The peak number of American coots observed during the first week of October was 8,570. The largest diversity of species was observed the last week of October. Eighteen total species were observed including mallards, northern pintails,

redheads, bufflehead, American coot, American wigeon, wood ducks, Canada geese, ring-billed gulls, northern shoveler, ring-necked ducks, canvasbacks, ruddy ducks, green-winged teal, scaup, double-crested cormorants, and pied-billed grebes. An unusual occurrence was the presence of six common eiders on Big Rice Lake on the Upgrala Unit. Flocks of green-winged teal, blue-winged teal, and American wigeon stopped over and stayed on the Peterson Pond during the whole month of October. Migration appeared to continue throughout the first week of November with about 16 species stopping over on the Refuge (including tundra swans). Most refuge wetlands and lakes were frozen by November 13th. Although the water did open up late in the month, this seemed to signal the end of fall migration

Oak Savanna Monitoring

Baseline vegetative data was collected on a 41-acre section of a 131- acre oak savanna in the Rapids Lake Unit. The fire monitoring method designed by the National Park Service was used to collect information on both woody and herbaceous vegetation present in ten 20 x 50 meter plots. The data is currently being analyzed.

Gypsy Moths

Ten gypsy moth traps remain on the Refuge at the request of the U.S. Forest Service. According to their report, no gypsy moths were captured on the Refuge.

Non-game bird monitoring

Nine floodplain forest sites on the Refuge were selected for a non-game bird monitoring survey. The purpose of the monitoring is to determine the general vegetation structure of the floodplain forest sites and to determine which bird species are using the floodplain forest as breeding areas. Strip transects were used to sample the sites for bird species and 10m x 25m quadrats were used to sample the vegetation. The results for fiscal year 1998 are currently being tabulated.

1.b Studies and Investigations

Biologists from Northern States Power Company (NSP) completed a two-year study of the fish, invertebrate, and plant communities of Black Dog Lake as part of their discharge permit requirements. The Long Meadow Lake Unit was also sampled as a control site. Baseline data is currently being summarized and a copy will be given to the Refuge for our records.

2

Habitat Restoration

2.a. Wetland Restoration

On-Refuge

Sixty-one wetlands totaling 181 acres were restored this year on Waterfowl Production Areas and Refuge property. Highlights this past year included 1) completion of 38 wetland restorations at Straight Creek WPA in Steele County; 2) completion of eight wetland restorations at Perbix WPA in Carver County; 3) completion of ten wetland restorations at Redhead WPA in Sibley County; and 4) restoration of an 80-acre wetland at Jailhouse Marsh located on the Louisville Swamp Unit of the Refuge in Scott County.

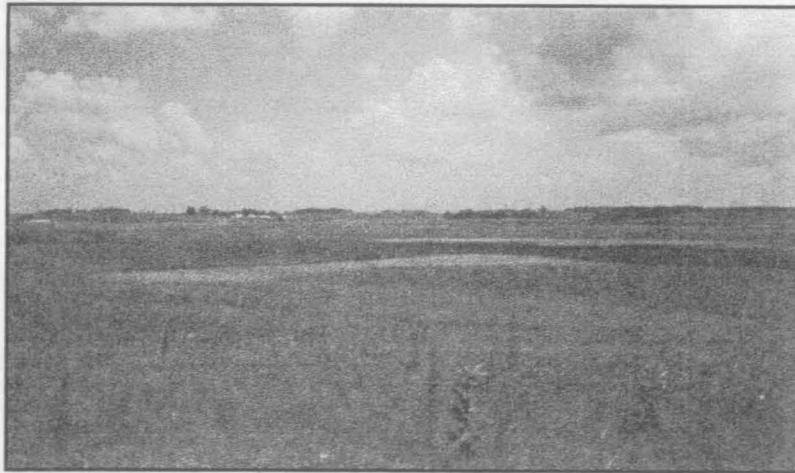


Photo 2. A nine-acre palustrine emergent wetland restored at Straight Creek WPA in Steele County. Photo by Mike Malling.

Off-Refuge

Fifty-one wetlands totaling 264 acres located on state, county, and private property were restored through the Partners for Fish and Wildlife program(PFFW). Partnerships with more than 20 different sportsman clubs, non-governmental organizations, private landowners, Natural Resource Conservation Service, various soil and water conservation districts, and private corporations continue to be the impetus that drives the PFFW program. Partnership dollars from the aforementioned partners were matched with several different grant sources including Challenge Cost Share, Conservation Partner, Prairie Pothole Joint Venture, and North American Wetland Conservation Act Grants. These contributed funds, matched with grant dollars, provided approximately 40% of the total funds needed to restore these wetlands.

Highlights of the PFFW program on private lands in 1998 included 1) restoration of a 60-acre wetland enrolled in the Wetland Reserve Program for the City of Shakopee; 2) restoration of a 60-acre wetland complex on private land located in Carver County; 3) restoration of five privately owned wetlands adjacent to Straight Creek WPA; and 4) restoration of an 80-acre wetland complex in Scott County. In addition to wetland restorations, the PFFW program also provided technical assistance and funds to enhance a 467- acre river marsh located next to Refuge property in the Minnesota River Watershed.

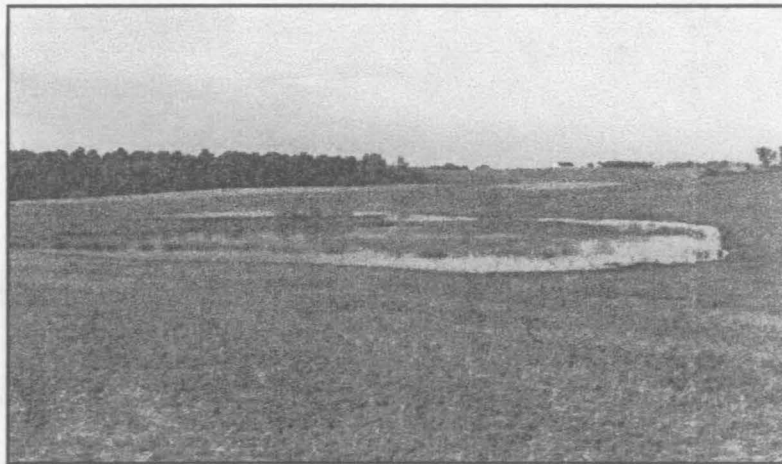


Photo 3. Wetland restoration on private property in Scott County. Photo by Mike Malling

2.b. Upland Restoration

On-Refuge

Partnerships with many different clubs and non-governmental organizations contributed more than \$50,000 for native prairie restoration. A total of 204 acres of cropland was restored to native prairie on WPA's located in Steele, Carver, and Sibley counties. Seeding was accomplished by refuge staff and by cooperative agreements with farmers. In descending order of species composition, big bluestem, Canada wild rye, Indian grass, switch grass, little bluestem, and side oats grama were seeded in conjunction with common ox-eye, purple prairie clover, and black-eyed susan. The showcase property for native prairie restoration was Straight Creek WPA in Steele County. In order to maintain local genotypes and to provide biodiversity, Straight Creek WPA was also seeded with more than 14 species of local prairie forbs.



Photo 4. Blue vervain, butterflyweed, side oats grama, and big bluestem at Straight Creek WPA in Steele County. Photo by Mike Mallong.

Off-Refuge

Refuge staff, through the PFFW program, provided seed and technical assistance to at least 10 private landowners resulting in over 20 acres of restored prairie.

2.c. Deepwater/Riverine Restoration

Off-Refuge

Riparian Restoration

Two sites totaling 5,000 linear feet of eroded, privately-owned riparian corridors located in Blue Earth and Waseca counties were restored via bioengineering practices. Bioengineering included resloping, reshaping, cedar tree revetments, willow fascines, willow and red osier stakes, shrub plants, native grass seeding, and fencing. Team work and partnerships were essential for the duration of these projects. A strong partnership with Minnesota Department of Natural Resources (Mn DNR) and the Blue Earth River Team, coordinated with more than 100 hours from Refuge volunteers and 400 hours from Refuge personnel, provided the necessary hours of hard work to complete these two riparian restorations. In addition, Refuge staff have been working with various soil and water conservation districts to restore more than 2,700 feet of streambank habitat in Carver, Scott, and Hennepin Counties. These projects are nearing completion and will be accomplished during Fiscal Year 1998.

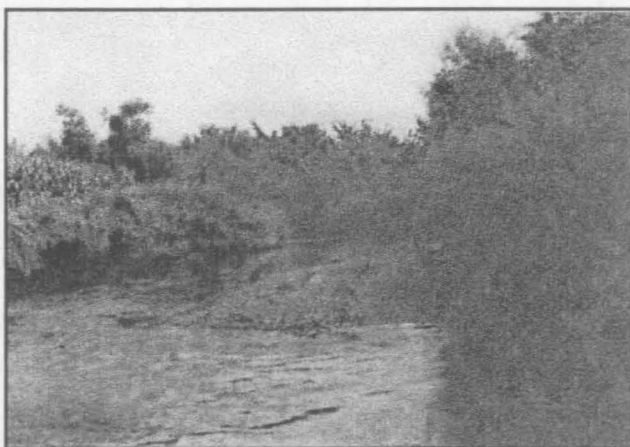


Photo 5. Hanson 1997 - Before restoration.
Photo by Mike Mallng.



Photo 6. Hanson 1998 - After restoration. Photo by Mike Mallng.

Lakeshore Restoration

Twenty-six hundred linear feet of eroded, privately owned shoreline along Lura Lake in Blue Earth County is currently being restored through bank reshaping, matting, riprapping, and revegetation. The Service continues to foster partnerships with private landowners, Mn DNR, Lura Lake Association, school groups, local sportsman clubs, Minnesota Conservation Corp, and NRCS in this ecosystem restoration project.

3

Habitat Management

3.a. Water Level Management

Consistent with the past several years, spring and summer flooding events from the Minnesota River took its toll on refuge pools. Late spring and summer drawdowns attempted on Fisher Lake and Rapids Lake were short-lived and emergent plant production was minimal. Wild rice production, however, was less impacted as Fisher Lake and Continental Grain Marsh continue to make annual gains. Cooperative management of Big Rice Lake with the Minnesota Valley Hunt Club, though hampered by flooding, played a key role in securing a relationship with our partners that will benefit the lake well into the future.

The Rice Lake Environmental Management Project on Rice Lake and Continental Grain Marsh was finally completed. On Rice Lake, this entailed a new structure, berm and intra-lake channel in order to facilitate better water control. On Continental Grain Marsh, a berm was constructed to replace a breach in the natural levee. Floodplain forest restoration via tree plantings was also conducted. Other water management related projects included construction of a ditch plug and water control device on Jailhouse Marsh; berm construction on Rapids Lake where the natural river levee has been breached; and construction of a ditchplug on a Rapids Lake outlet to prevent river backflooding. Both of these projects were funded by challenge grants and the Minnesota Waterfowl Association.

3.b. Moist Soil Management

Flooding has made it difficult to access refuge moist soil units for mechanical manipulation. Rank vegetation and woody species invasion needs to be brought under control. Prescribed burns are scheduled for 1999 on Fisher and Chaska moist soil units to aid in this process. Spring and Fall waterfowl use was minimal on these units, but should improve with more intensive management. Old Cedar moist soil unit has become completely inundated by purple loosestrife; beyond the point where spot-spraying is practical. Biological control has been implemented in the area

3.c. Graze/Mow/Hay

Canada thistle was mowed on 30 acres of Moravec WPA, five acres of the Upgrala Unit and 20 acres of the Rapids Lake Unit of the Refuge. Part of the prairie grass seeding (approximately 15 acres) on Perbix WPA was mowed to reduce weed competition.

3.d. Farming

Cooperative farming activities were conducted on the Meffert tract of High Island WPA and the Stradtman tract of Cobb River WPA. Soybeans were planted on 114 acres in preparation for planting of native grasses in 1999.

3.e. Forest Management

Nothing to report

3.f. Fire Management

This season's prescribed burning program will go down in Minnesota Valley history as one of the best. Spring conditions were ideal for burning and our crew of 17 people was able to take advantage of this with a total of 1,100 acres of refuge and state lands burned, 630 and 470 acres respectively. Of particular note was the burning of 300 acres of newly seeded natives on our Rapids Lake Unit. Native grass and forb response was excellent. With the help of neighboring Minnesota Valley State Park, we were able to burn most of our high priority units while lending a hand to state burning operations on lands complementing the Refuge.

A total of seven wildfires occurred on the Refuge this spring. All were less than ten acres in size and were a result of illegal campfires and pyromania.

3.g. Pest Plant Control

With the continued spread of leafy spurge and purple loosestrife on the Refuge, we continue to utilize as many tools as possible to give native plants a competitive edge.

Aphthona sp. beetles continue to thrive on leafy spurge sites. Pam Deerwood and staff from the United States Department of Agriculture continue to monitor the release of beetles to control leafy spurge on the Refuge. Beetles have been released on the Upgrala, Bloomington Ferry, and Wilkie units. Although the beetle's success has varied on the Refuge, it may take several years to truly assess the release efforts.

No chemical was applied for purple loosestrife control this year but 11,500 Gallerucella sp. beetles were released at two sites on the Wilkie and Long Meadow Lake units. Baseline and post-release

monitoring were conducted. We will continue to monitor the progress of these beetles according to the protocol outlined by Cornell University.

Small areas of Canada thistle were mowed on the Rapids Lake Unit and the Upgrala Unit. Canada thistle was also sprayed on the Rapids Lake Unit and by contract on the Cobb River WPA.

4

Fish and Wildlife Management

4.a. Bird Banding

Nothing to report

4.b. Disease Monitoring and Treatment

Nothing to report

4.c. Reintroductions

Nothing to report

4.d. Nest Structures

Refuge staff distributed approximately 50 wood duck boxes and 20 bluebird houses to private landowners within the Refuge's wetland management district. Literature discussing proper placement and care was given to the landowners with the structures. The material for the structures was purchased by the Refuge and they were constructed by the Boy Scouts.

For the coming year, Refuge staff in partnership with the Minnesota Waterfowl Association and Boy Scouts will construct 50 mallard nesting cylinders to be placed on Waterfowl Production Areas (WPA) and other high quality habitat areas in the wetland district. Work has also started on implementing an "Adopt a WPA" program with local conservation groups which will include placing and maintaining nesting structures on WPA's under the supervision of Refuge staff.

4.e. Pest, Predator, and Exotic Animal Control

A raccoon infected with mange was shot and killed by a Refuge officer near the Visitor Center observation deck.

5

Coordination Activities

5.a. Interagency Coordination

Savage Fen

In 1998, the Minnesota DNR began and completed another process to determine the type of development, if any, that would be allowed in the Savage Fen wetland complex. Meetings and open houses were held during the fall of 1997 and a final decision was issued by the MnDNR Commissioner in March of 1998. The decision was not to allow development in the fen complex. The major development proposal on the table was the extension of Scott County Highway 27, a highly controversial project first proposed in the early 1980's. This was a major decision with far reaching environmental and political ramifications. It is very encouraging for the future of the fen of which nearly half is owned and managed by the Refuge.

Ceridian Corporate Headquarters

Refuge and Friends staff worked closely with the City of Bloomington, Met Council, Army Corps of Engineers and MnDNR on a major development project on the bluffs overlooking Long Meadow Lake. The Ceridian Corporation proposed and is currently constructing its corporate headquarters and a four-level parking lot. A wing of the headquarters is to extend over the steep, highly erodible bluff but not below the maximum elevation allowed by city ordinance. Refuge staff encouraged Ceridian and Bloomington officials to re-design the building to stay on top of the bluff. Ceridian officials decided not to re-design the development but did agree to work with the Refuge in providing a trail corridor segment that will, hopefully, someday extend from the Visitor Center to the Bass Ponds. They also are willing to do some oak savanna restoration work on the portion of the bluff that will not be disturbed.

City of Bloomington

Refuge staff and City of Bloomington officials met several times to discuss the storm water in the watersheds in the extreme eastern part of the city that outlet to Long Meadow Lake. The city is working on the development of Comprehensive Water Management plans and Wetland Inventory and Management plans. Refuge staff reviewed the documents and provided comments.

Partnership Agencies:

Natural Resources Conservation Service

Refuge staff worked with the NRCS state office to promote WRP floodplain and wetland restoration projects by taking the lead on recruiting landowners, conducting site visits, developing restoration plans, and submitting applications. Approximately 12 WRP applications are at the NRCS state office and in various stages of completion.

Minnesota DNR Blue Earth River Team

The Refuge is a partner on the Blue Earth River Team, a multi-disciplinary team consisting of MnDNR representatives from various divisions, that work together on improving the Blue Earth River watershed. Refuge staff assist through the use of the WPA easement and acquisition programs and the private lands habitat restoration program.

Minnesota DNR State Parks

Refuge staff have continued to work cooperatively with the staff of the Lawrence Wayside and Carver Rapids State Park units on trail maintenance and prescribed fire. Refuge staff assisted on several prescribed fires on the park and state park employees assisted on several refuge burns.

National Park Service

The Refuge is a partner with the Mississippi National River and Recreation Area by providing a representative at the coordinating meetings as well as partnering with the Park Service on the Great River Journey, an environmental education program conducted on a paddleboat along the Mississippi River.

Soil and Water Conservation Districts

Carver County SWCD worked as a Refuge partner through a cooperative agreement to restore riparian habitat. Six projects were completed on Bevens Creek and Silver Creek restoring a total of 1,230 feet of stream bank.

Hennepin, Scott, Steele, and Rice SWCD's maintained cooperative agreements with the Refuge to assist with wetland restorations. The conservation districts contacted landowners and designed the wetland restorations to be accomplished. Blue Earth and Faribault County SWCD's were partners on the Lura Lake shoreline restorations.

MOU with Audubon

On September 24th, a Memorandum of Understanding (MOU) was signed between Minnesota Valley National Wildlife Refuge and the Minnesota River Valley Audubon Chapter. The MOU is part of the Audubon Refuge Keepers program which seeks to raise the visibility of the National Wildlife Refuge System. A few obligations of the Refuge are to provide a facility for monthly chapter meetings and a Refuge staff liaison. In exchange, the Minnesota River Valley Audubon Chapter will provide interpretive programs at the Refuge and participate in wildlife inventory programs.

Partnership Grants

Conservation Partners Grant

Refuge staff worked with the Minnesota Waterfowl Association and the Metropolitan Council to complete a conservation partners grant. Funds were used to restore the 80-acre Jailhouse Marsh located in the Louisville Swamp Unit and a 40-acre wetland on Murphy-Hanrehan Park in Scott County.

Met III Grant

In partnership with Refuge staff, Tom Cooper, a Minnesota Waterfowl Association (MWA) biologist, has been working with a \$100,000 Metropolitan Council Grant to restore wetland and grassland habitat in the Mississippi and Lower Minnesota River watersheds. The goals of this grant are to restore 65 acres of wetlands and 40 acres of upland habitat. A total of 39 wetlands for 240.4 acres have been restored within the target watersheds. In addition, 21 acres of prairie have been restored on two sites. The grant also pays the salary of MWA biologist Cooper. Grant work will continue until the completion date in December of 1999.

Met II Grant

Refuge staff have been working with the MWA and other conservation groups from a 1996 Metropolitan Council grant for wetland restorations in the Lower Minnesota River Watershed. The goal for this \$73,000 grant is to restore 140 acres of wetlands and 20 acres of upland buffer. To date, 68 wetlands totaling 218 acres have been restored on federal and private property in the target watersheds. Ten sites have been seeded to native prairie grasses for a total of 208 acres of upland buffer.

North American Wetlands Conservation Act

The Refuge is in the process of completing Phase III of the Minnesota River Watershed Project. In cooperation with more than 20 partners, this grant has accomplished the following; (1) purchased 2,311 acres in fee-title lands; (2) acquired 782 acres in fee-easement; (3) restored 1,610 acres of wetlands; (4) restored 1,004 acres of upland to native prairie; and (5) enhanced 1,555 acres of wetlands. This NAWCA grant will be completed during the 1999 field season. In addition to providing habitat for a host of wildlife species, this initiative has created new partnerships, alleviated downstream flooding and erosion, provided areas for public recreation and environmental education, and stimulated interest, communication, and cooperation in restoration and conservation of wetland complexes.

5.b Tribal Coordination

Nothing to report

5.c. Private Land Activities

Refuge private lands biologists provided technical assistance to more than 200 landowners and organizations regarding wetland and prairie restoration projects. More than 50 private landowners signed wildlife management agreements resulting in the restoration of 264 acres of wetlands. The Refuge's private lands staff also performed the following duties: attended public meetings; authored more than ten grant applications; gave presentations to more than 15 different groups; participated on screening committees for the State's Reinvest-In-Minnesota (RIM) and Farm Service Agency's Conservation Contract easement program; assisted with SWCD's wetland restoration program; delineated lands for WRP easements in cooperation with NRCS; and assisted watershed organizations in education and restoration of the Minnesota River Watershed.

6

Resource Protection

6.a. Law Enforcement

The past year was a very busy for Refuge law enforcement officers. The addition of a permanent full time officer and a collateral officer resulted in a large increase of citations issued. A total of 120 citations were issued in 1998 versus only 17 issued in 1997. The majority of the 120 citations issued were for hunting, fishing, and drug type violations. There has also been an increasing number of violations being noted in the area of resource collection. The illegal collection of water cress has become a familiar sight as numerous individuals were contacted and warned for the violation. Water cress is a plant which is sold at the local farmers market and its collection has become a serious resource issue. Other resource violations included the collection of frogs, buckets of worms, rocks, flowers, and tree parts.

The growing concerns regarding resource collection prompted the Refuge to review its policy regarding which specific natural items may be harvested within the Refuge. "Personal consumption" is no longer an adequate phrase to describe the amount of any natural product which may be harvested within the Refuge. Limits have been designated and the public has been notified via press release as to what amounts are acceptable to be collected for "personal consumption".

Dumping violations continue to occur at an alarming rate. Every road into and near the Refuge provides the avenue for illegal dumping. Hidden from view parking lots seem to bear the brunt of the violations. Everything from old bed springs to broken down motorcycles and household garbage have been dumped on Refuge lands.

The newly instituted bike patrol program was a success as refuge officers made numerous cases while in the bike patrol mode. Dogs off leash continue to be a big problem on many of the trails. Refuge officers plan to keep a database in order to effectively enforce the Refuge's leash law.

6.b. Permits and Economic Use Management

A right of way (ROW) permit was granted to the City of Carver to rehabilitate a flood control dike around the City. A very small portion of land on the western boundary of the Chaska Unit was effected.

A ROW permit was granted to Northern Natural Gas for the installation of a second pipeline within a portion of the Louisville Swamp Unit. The 12-inch line was laid adjacent to an existing line across both the Rapids Lake and Louisville Swamp units. Northern Natural Gas already had rights for a second line over most of the ROW. The pipe was laid in sensitive areas by underground directional boring techniques which essentially has no environmental impact. The technique was used across most of the Rapids Lake Unit, the Minnesota River, and Sand Creek. Areas in the floodplain where trenching was used will be restored to the native floodplain forest. The reforestation involved a planting plan developed by Refuge staff that involved 30-foot circular modules spaced 60 feet apart. The modules include five, two-inch caliper trees and 50 seedlings of seven species of native trees. Once the trees are established, two trees will be identified in each module as the "keeper" trees. These trees will not be disturbed in any way. The remaining trees can, if necessary be cut back. The idea is to ultimately have mature trees with canopies that nearly reach each other and extend over the entire width and length of the ROW to prevent the unnatural corridor appearance and fragmentation and edge effect in the forest. Traditionally, gas lines are re vegetated with grasses but in order to reduce the fragmentation of the Rapids Lake Unit, the tree planting plan was implemented.

The City of Arden Hills was granted a 500-foot ROW for a trail section within the Round Lake Unit. The ROW was needed because there was not room for the trail off Refuge land. Once the entire trail is finished, staff from the City Parks and Recreation Department, in cooperation with Refuge staff, will develop appropriate interpretive signage.

Special Use Permits Issued

Joseph Atterbery	Remove scrap metal around building sites
City of Eden Prairie	Sharpshoot deer - Upgrala Unit
Dr. Jim Cooper	University of Minnesota- remove 50 Canada geese
Jim Schleusner	Archaeological survey- Louisville Swamp Unit
Tom Bailey	Archaeological investigation - Rapids Lake Unit
Travis Durkin	Burger Brothers - Demonstrate canoeing skills
Dave Stanoch	Access - hunter with disabilities
Ollie Sieberg	Access - hunter with disabilities
Dennis Laukala	Access - hunter with physical disabilities
Jonathon Leslie	Capable Partners - access to Upgrala Unit - Hunters with disabilities program.

Economic Use Management

Nothing to Report

6.c. Contaminant Investigation

Refuge and Ecological Services staff continue to work with the Department of the Army on the continued investigation and potential clean up of the Round Lake Unit located in the City of Arden Hills. This unit, which was transferred to the Service from Army several years ago, is downstream from the Twin Cities Arsenal where a whole array of toxic chemicals were discharged into the environment during the 1940s and 1950s. During Fiscal Year 1998, the Army drafted the "Tier II Ecological Risk Assessment Work Plan" which essentially describes the Army's plan for assessing the presence of toxic chemicals in this area and determining their apparent risk. We remain concerned about Army's approach in determining the availability of toxic chemicals to aquatic organisms and their commitment to clean up the area if problems are discovered.

6.d. Contaminant Cleanup

Nothing to report

6.e. Water Rights Management

Nothing to report

6.f. Cultural Resource Management

An archeological investigation was conducted at the Rapids Lake Unit prior to issuing a ROW permit to Northern Natural Gas for the pipeline mentioned in section 6b. The investigation found four archeological sites. Of those four sites, site IMAC 4-2 met the Minnesota Historical Societies criteria for eligibility for the National Register of Historic Places. The site was identified as a prehistoric/Woodland campsite.

6.g. Land Acquisition Support

WPA Acquisition

Through the excellent support of the Litchfield Wetland Acquisition Office, the Refuge was able to acquire 344 acres of WPA's (Table 3) and 122 acres of habitat easements (Table 4).

Table 3. Waterfowl Production Areas Acquired in FY 1998.

Name of WPA	County	Acres Acquired
Bachmann	Carver	120
Meffert	Sibley	68.6
Ziegler	Blue Earth	58.48
Mariska	Rice	96.5

Table 4. USFWS Habitat Easements Acquired in FY 1998.

Name of Easement	County	Acres Protected
Westerhouse	Rice	84.35
Oelfke	Sibley	37.42

6.h. Threats and Conflicts

A variety of projects in or near the Lower Minnesota River Valley potentially threaten the biological and aesthetic values of the Refuge. These projects are summarized below.

Airport Expansions

Negotiations with the Federal Aviation Administration (FAA) and the Metropolitan Airports Commission (MAC) over the expansion of the Minneapolis-St. Paul International Airport reached a successful conclusion during the year. On September 21, 1998, the Service and MAC entered into a Memorandum of Agreement which assured that no less than \$20 million would be provided to the Refuge for impacts to lands and facilities associated with the airport expansion project. The final amount for compensation was to be determined through an appraisal prepared by Shenennon Company, Inc., and paid for by MAC. At this writing, the draft appraisal indicates that no less than \$25.3 million will be provided to the Service.

Our discussions with FAA and MAC were very challenging. In May, FAA released their Section 4(f) Evaluation [Department of Transportation Act of 1966] and the Final Environmental Impact Statement over our objections. Both documents lacked specific detail in terms of appropriate Refuge mitigation. These issues were not resolved until local citizens, including the Friends of Minnesota Valley, and Congressman Martin Sabo engaged in the process.

For background purposes, the Service was not in a position to oppose this project due to our enabling legislation. It was, however, our responsibility to ensure that the interests of the Refuge were considered and compensated for as part of the overall airport expansion project. Our underlying

principle going into these negotiations was to assure that the Refuge would not experience a net loss of wildlife habitat and that the public would not experience a net loss of opportunity to view wildlife in its natural setting.

Due to the complexity of this project and its associated mitigation, we chose a cash settlement whereby mitigation funds, under Service administration and control, would be used on projects to directly offset impacts to the Refuge. Most of these projects will be identified through the preparation of the Comprehensive Conservation Plan for Minnesota Valley NWR, which was initiated during the year. Approximately 60% of the mitigation funds will be used for land acquisition and remainder will be used to replace facilities.

Scott County Highway 27

Yet another round of interagency and public meetings concerning the construction of Scott County Highway 27 through the Savage Fen was initiated in 1997. A final no build decision was announced by the DNR Commissioner in March of 1998. Efforts continue to work with the citizens and private and public officials to get consensus on a holistic approach to the management of the wetland complex in the future. The Refuge has over 200 acres of fee title lands within the complex.

Smith Pond

The City of Bloomington proposed the rehabilitation of Smith Pond which is located in the watershed that feeds Pond C of the Long Meadow Lake Unit. Refuge and Ecological Services staff provided technical input and concerns. To alleviate our concerns about the resuspension of the contaminated sediments and the possibility of contamination in Pond C, the project was amended to require winter construction only. This project prompted several meetings with City officials concerning watershed management. The Service encouraged the City to approach the management of the watersheds feeding the Refuge in a holistic approach instead of the current and past piece-meal approach. Negotiations on these issues continue as of this writing.

Motocross Park

A motocross track was proposed to be constructed on an 80-acre portion of a mined out area next to the Louisville Swamp Unit. Refuge staff attended a test run to get an idea of the noise generated and how it may affect Refuge users. The results of the test proved the activity was very noisy and would definitely adversely affect most recreational users. The project was dropped.

Golf Improvement Center

Service staff conferred with officials from the City of Chanhassen, the MnDNR, and the developers of a 40-acre Golf Improvement Center proposed to be constructed adjacent to the Upgrala Unit. Night lighting, ball nets, and point runoff were the major concerns. The project was approved with all recommended conditions. Refuge staff informed City officials that this kind of development is inconsistent with the "spirit" of the enabling legislation for the Refuge and the State Recreation Area.

Silica-Sand Mining

A silica-sand mining operation was proposed near the east boundary of the Louisville Swamp Unit. Refuge concerns include wetland and stream degradation from ground water withdrawal and runoff from washing operations and excessive noise. Negotiations continue as of this writing.

Gateway Center

Work was completed and a large light manufacturing and industrial park bordering the entire west boundary of the Round Lake Unit. Most all of the recommendations by the Refuge were implemented including stormwater treatment ponds.

Blue Lake Wastewater Treatment Plant Ground Water Relief Project

This plant is surrounded on two sides by the Wilkie Unit. Plans are to install large capacity pumps to keep facilities from flooding and pump water will outlet to Blue Lake. Refuge concerns include pumping effects on the water table, plant community, and water levels on Blue Lake. Negotiations continue as of this writing.

Flying Cloud Airport Expansion

A runway expansion project proposed by the Metropolitan Airport Commission will significantly increase the amount of jet flights over the Upgrala Unit of the Refuge. Concerns include noise factor for Refuge users and wildlife. Negotiations continue as of this writing.

7

Public Education and Recreation

7.a. Provide Visitor Services

Minnesota Valley continues to provide a quality location for visitors to participate in activities ranging from wildlife viewing to environmental learning. Throughout Fiscal Year 1998 over 180,000 people utilized the Refuge in some way. Over 120,000 visited the Refuge for wildlife observation or to participate in interpretation programs offered throughout the year. Another 43,000 used the Refuge for recreation such as hunting, fishing, hiking, or biking. Environmental education continues to be successful as well with almost 10,000 students and teachers receiving instruction from Refuge staff and volunteers. Some of the highlights are summarized below.

Preschool Program

In it's third year, the Preschool Program continues to attract preschools throughout the Twin City area. In 1998, over 2,400 children participated in one or more of five different 1 ½ hour programs. This is a 100%+ growth over last year. By fall there will also be some K-3 curriculum available.



Photo 6. Park Ranger Cassem instructs a group of students in the hearth room. Photo by Ed Moyer.

Big River Journey

In cooperation with the Mississippi National River and Recreation Area (a unit of the National Park Service), Refuge and park staff presented programs to 4th - 6th grade students and explored the Minnesota and Mississippi rivers on a paddleboat. Over a three week period in May, a total of 1,901 students participated in this program. An additional 83 teachers were trained at three teacher workshops prior to the boat excursions.

Scouting

The scout program continues to enjoy success. The Explorer Post, now in it's sixth year, helps highschool students learn about the natural resource field while helping the Refuge restore habitat. In Fiscal Year 1998, four eagle scouts built wood duck boxes and removed invasive trees from the Visitor Center prairie. In addition, a "Project Wild" scout leader workshop was held during the spring. The "Watching Wildlife" scout program serves the younger Boy Scouts and Girl Scouts and reached over 300 students. Finally, merit badge programs and orientations were provided to a variety of scout groups.

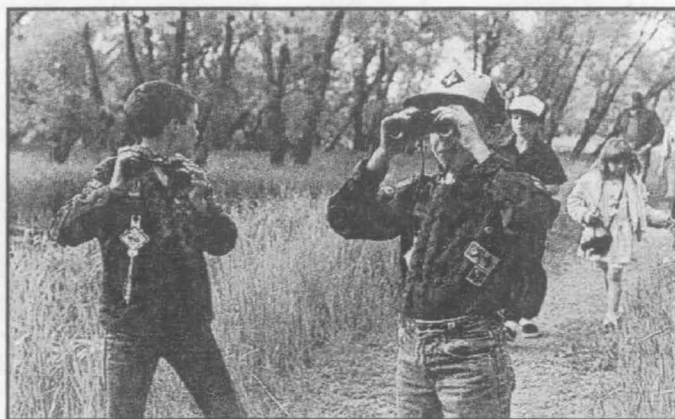


Photo 7. Scouts enjoying a day on the Refuge.
Photo by Kathryn Cassem.

Environmental Education Curriculum

Eleven new curriculum were completed for the environmental education program at the Refuge. The curriculum is resource management based and focuses on the theme of "How Should We Live Together?" It was designed by Refuge staff and volunteers for grades 4-12.

Partnership Schools

This year the partnership between the Refuge and the schools took a different twist by supporting Fish and Wildlife Service (Service) the cultural diversity objective. Our plan is to educate more minority students about the Refuge and the opportunities that the Service offers. There are currently six schools and one community center with high minority enrollment that participate in this program.

Interpretive Programs

Staff and volunteers offered 108 programs from cross-country ski trips to bird watching explorations. A total of 3,196 visitors attended these programs. Some of the more popular programs included the Wednesday evening wildlife walks led by Duke Addicks (Volunteer) and the bird watching treks led by Craig Mandel (Volunteer).

Region 3 Resource Library

The Refuge houses the Region's Resource Library, the purpose of which is to distribute a variety of materials to other Service offices, teachers and conservation agencies. Services provided by the Resource Library in 1998 are as follows:

Displays were distributed 47 times to Service offices and public conservation agencies.

A total of 698 videos and films were distributed to teachers, Service offices, and public conservation agencies.

Responded to 222 requests for information and natural resource materials.

Educational Kits were distributed 85 times to Service offices, teachers and public conservation agencies. A summary of the uses of this kits is as follows:

Prairie Trunk	18
Project Wet Trunk	0
Suitcase for Survival	15
Enviroscape Model	10
Wetland Trunk	17
Wolf Box	16
Zebra Mussel	2
Songbird Trunk	<u>7</u> (new late in the year)
Total	85

7.b Outreach

Staff and volunteers continue to use outreach in a variety of ways to spread Minnesota Valley's message to a diverse audience. There were at least 55 presentations to groups and clubs which reached over 4,000 people. Refuge events were also a popular attraction for visitors of all ages. Some of the highlights are summarized below.

National Wildlife Week

Each year Refuge staff present programs at local school in conjunction with National Wildlife Week in April. This year, 1,477 students were contacted during the week. The theme of the program was "Nature's Web: Caring for the Land".

Youth Fishing Day

In 1998, the Refuge once again hosted a Youth Fishing Day at the Bass Ponds. Over 500 people attended the event including 275 inner city youth and kids involved with the Big Brothers and Big Sisters program. A change to this year's event was that the afternoon session was opened up to the general public. Sixty fishing experts and volunteers educated the participants on proper and ethical fishing techniques. Following the fish fry hosted by the Red Lake Nation, participants spent the afternoon catching bluegill and largemouth bass. Each child also took home educational literature and their own rod and reel.

International Migratory Bird Day

In cooperation with the Como Zoo in St. Paul, approximately 3,796 people were provided information about migratory birds during International Migratory Bird Day on May 8, 1998.

Endangered Species Day

To celebrate the 25th anniversary of the Endangered Species Act, Refuge staff and volunteers hosted an event at the Visitor Center on April 11th. More than 200 visitors attended events and activities throughout the afternoon. The Raptor Center (non-profit organization) presentation, with live birds, attracted 126 visitors in the auditorium.

National Wildlife Refuge Week

Staff and 20 Refuge volunteers provided the general public with opportunities to participate in a week long celebration. The week included interpretive events including bird hikes, wildlife observation hikes, and canoe tours. The week culminated with the "Great Fall Adventure," a festival of activities at the Bass Ponds on Saturday, October 17. It was a family event with opportunities to participate in goose and duck calling, dog retriever demonstrations, canoeing, face painting, duck viewing, pond netting, or to interact with critters from the Minnesota Zoo Mobile. Approximately 300 people enjoyed the week long events. The events were highlighted in the Star Tribune, St. Paul Pioneer Press, and the Sun Current newspapers. KARE 11 television spotlighted the Fall Adventure on its Morning News Program.

Steve Stark of Fargo, North Dakota, entertained approximately 50 refuge visitors in the Visitor Center Auditorium with his impersonation of Teddy Roosevelt on Tuesday night, October 13th. "Teddy" spoke about the values of life, service, work, family, conservation, and country. He reminded his audience of his conservation efforts and his establishment of the first wildlife refuge, Pelican Island, in 1903 as a bird sanctuary.

Dr. Scott Sharkey of Bloomington, MN provided a slide presentation, entitled, "The Secret Life of the Minnesota River Valley" to 40 Refuge visitors on October 15th at 7:00 p.m. in the auditorium. Dr. Scott Sharkey was featured not only because he is an expert photographer but also because he primarily uses the Refuge as subject for his photographs. His slides depicted the refuge throughout the season and highlighted photographic techniques such as back lighting. In addition to his remarkable photography, Dr. Sharkey provided a naturalist interpretation of his subject matter. Many of the visitors stayed to asked individual questions of the photographer and/or enjoyed the current photographic exhibit in the Center's gallery.

Private Lands Reach Out

Refuge staff made presentations to over 25 conservation organizations and attended many banquet and evening meetings to promote the Refuge's private lands and wetland management district programs. Many of these groups have become valuable partners that contribute financially to habitat restoration. The groups also serve as contacts with the local community.

Communications Plan

During the year, Refuge staff developed a communications plan modeled after the national outreach plan. The goal of the Refuge's plan is to increase the public's awareness of Minnesota Valley NWR and the U.S. Fish and Wildlife Service and to enhance and improve the accuracy of information exchanged between Refuge staff and the public. The communications plan lists action items that will be implemented to achieve these goals. The Refuge also refined its mission statement which along with the Service mission statement is displayed throughout the Visitor Center and staff work areas.

Junior Duck Stamp Program

More than one thousand entries were submitted for the competition representing a 40% increase in the number of participants from previous years.

Rebecca Latham won Best-of-State with her rendition of a pair of Redheads done in acrylic. Rebecca went on to take second place in the National Competition. Rebecca and her family were honored with a trip to Washington, D.C. for an award ceremony and to attend the judging of the Federal Duck Stamp Program.



Photo 8. Rebecca Latham in Washington D.C. Pictured from left to right: Jamie Clark (USFWS), Rebecca Latham (National Winner), Karen Latham (Mother), Ted Latham (Father), Bonnie Latham (Sister). Photo by Duck Stamp Office, Washington D.C.

A traveling exhibit consisting of 36 pieces of art representing the first, second, and third place winners was on display throughout Minnesota through December 1998. The exhibit traveled to 11 sites/events reaching an audience of 90,000 plus. It was the first time the exhibit was on display at the Minnesota State Fair.

Approximately 450 guests attended the awards ceremony at the Minnesota School of Environmental Studies in Apple Valley on May 16, 1998.

We had the greatest number of cooperators with \$19,000 raised in in-kind service, awards, and materials including more than 250 volunteer hours. Sources for actual dollars included \$5,000 from the Minnesota Waterfowl Association, \$250 from Wildwings, and \$3,000 from USFWS Challenge Cost Share. Other contributors included Gander Mountain L.C.C., Bridgeman's Restaurants Inc., Jim Hautman, Artist, Robert Hautman, Artist, Roger Preuss, Artist, in conjunction with Wildlife America, Nicollet Conservation Club, Minnesota School of Environmental Studies, Knotts Camp Snoopy, Friends of Minnesota Valley Regional Library, Mankato, Minnesota, and the National Duck Stamp Collectors Society.

The Minnesota program was honored by nomination and inclusion in the 1998-1999 "Reach for the Stars Program" sponsored by the Minnesota Academic Excellence Foundation. The Program was

featured in two major metro daily newspapers, one television station, and approximately fifty articles appeared in local papers throughout the state, with several magazines and newsletters also carrying pictures and/or articles. It was the first ever that the MN Program Coordinator was honored by being invited to Federal Duck Stamp Judging and ceremonies in Washington, D.C. this November. Also for the first time, the National Junior Duck Stamp Exhibit came to Minnesota and was on display for three weeks at MN Valley NWR.

The judges for this year's competition included: Artist John House, Artist Marian Anderson, Jeff Hedtke, Board of Water and Soil Resources, Marvin Moriarity, DRD USFWS, and Jeff Holmin, President, Nicollet Conservation Club.



Photo 9. Well deserved family pride. Pictured from left to right: Sandy Hasse (Mother), Alex Hasse (Brother), Christopher Hasse (1st place winner), Steve Hasse (Father). Photo by Kwo Wei.

Art Gallery Exhibits

Seven artists and several student artists displayed their original paintings and/or photography at the Visitor Center Art Gallery during the fiscal year. There was no lapse in the use of the gallery. Approximately 200 individual art pieces were hung. The duration of each exhibit was six weeks. In addition, the gallery hosted two traveling exhibits which were displayed in the Visitor Center but outside the gallery itself. Both the National Junior Duck Stamp Exhibit and the Minnesota Junior Duck Stamp were exhibited for a duration of three weeks.

Art is an important avenue to create a sense of stewardship and awareness of the natural environment and the mission of the Service. The artists exhibiting at the Gallery have brought an entire new audience to the Visitor Center. Many hosted opening receptions which drew approximately 75-100 guests per event. Often these guests were first time visitors to the Refuge. We were successful in advertising the art exhibits in local newspapers, art newsletters, and through the INTERNET thus

creating additional outreach efforts. The Gallery has developed a good image and reputation as evidenced by the facts that exhibits are booked through the Year 2000, the artists' exhibits have prompted invitations to display in other galleries, and the artists have sold their work.

The exhibits included:

"Natural Surroundings," an exhibit of pastel and watercolor renderings of Minnesota Landscapes by artist Carl Nelson.

"A Celebration of the Seasons," an exhibit of watercolor paintings of flowers and wildlife by Sally Tamplin.

"Native Flora to Domestic flowers of Minnesota Gardens," an exhibit of large pastels by Lisa Wittnebel.

"Water Landscapes," an exhibit of waterfalls by Darin Anderson.

"Seasonal Changes," photographs and paintings by Craig Lindgren and Lisa Wittnebel.

"Photographs of Minnesota Flora and Fauna," by photographer John A. Gregor.

"Where Land and Water Meet," color photos by photographer Francine Corcoran.

"From a Child's Eye," paintings and sculpture by the students of Nature's Palette Art Gallery, Hastings, MN.

Press Releases

There were 46 press releases issued in Fiscal Year 1998. They covered items ranging from hot spots for wildlife viewing to upcoming special events to law enforcement policies.

Carver County Days

Refuge staff presented educational programs to over 300 sixth graders from Carver County schools in September. Presentation topics included wildlife and the Minnesota Valley.

Ecommunity

The Mall of America sponsored the third annual Ecommunity program October 16 & 17, 1998. Over 4,500 visitors participated in this program that showcased environmentally conscious organizations from around the State. Our display dealt with the plight of endangered species.

Young Waterfowlers Program

A total of five youth and six mentors participated in the Young Waterfowlers Program during the period. Other than the actual hunt, the firearms training system and the field day exercises continued to be a favorite among participants. Following a close second in popularity were three new lesson plans that were added to the curriculum this year. They are as follows:

- Cold Weather Clothing - Instructed by Laurel Schulenberg, Apparel Specialist for Burger Brothers Outfitters.
- Waterfowl Habitat Management and Wetland Values - Tom Kerr, Refuge staff.
- Waterfowl Foods - Tom Cooper, MWA and Vicki Sherry, Refuge staff.

Youth harvested eleven ducks and two geese during trips on Long Meadow Lake.

A wild game recognition dinner was held on January 23, 1998 for the participants and supporters of the Young Waterfowlers Program class of 1997. A total of 43 people attended the event.

Waterfowl Hunting for Sportsmen and Sportswomen With Disabilities

Another successful year was realized in the hunting programs for people with disabilities. Seventeen people participated in 12 hunts harvesting eight ducks and nine geese. The Capable Partners organization was granted a special use permit which included guidelines for conducting the hunt. The Refuge provided and maintained the facilities which included two blinds, a boat dock and an access road. Capable Partners handled reservations and conducted the hunts. The facility is located on the north shore of Rice Lake within the Upgrala Unit. The boat dock and boardwalk were installed by Twin Cities Tree Trust at the request of Capable Partners. The facility will make launching and removing their boat easier and less damaging to wetland vegetation. Participants of the program also joined in the festivities during the Young Waterfowler wild game recognition dinner.



Photo 10. Accessible combination boardwalk\boat dock installed at Upgrala hunting site. Photo by Terry Schreiner.

8

Planning and Administration

8.a. Comprehensive Conservation Planning

In September of this year, the Refuge initiated early discussions concerning the preparation of its Comprehensive Conservation Plan (CCP). As part of this effort, we established a Technical Working Group comprised of staff from the Refuge, from the MnDNR, and from the Friends of the Minnesota Valley. The preparation of our CCP is very important in light of the expected mitigation funds in association with the airport expansion project. In addition, the time is right for the Refuge and its associated partners to review where we have been and where we hope to go with our respective programs over the course of the next 15 years. The CCP will require a great deal of energy and resources over the course of the next year and we hope to have a final product by April 1, 2000.

8.b. General Administration

REFUGE FUNDING - FY'98

Refuge Operations	1261	\$1,166,467
Volunteer Program	1261	19,900
Challenge Grant Programs	1261	15,000
Refuge Contaminants	1261-3C14	5,000
Maintenance Management	1262	116,800
Private Lands	1121	122,000
Nongame/Neotropical	1231	3,000
NAWMP Projects	1234	23,325
Fire Management	9251	32,848
Migratory Bird Conser.	3110	5,000
Resource Center	various	<u>55,000</u>
TOTAL		\$1,812,340.00

Refuge Staffing

The Refuge saw many personnel changes during Fiscal Year 1998. Although nine employees departed, four new employees were hired. Sue McDonald was hired in December 1997 as a Park Ranger, and is in charge of the Environmental Education and Interpretation Programs. She previously worked for the National Park Service. Deb Gaunitz came to Minnesota Valley from St. Croix WMD in June of 1998. She works as a Refuge Operations Specialist, which includes law enforcement duties. Mike Malling was hired as a private lands Wildlife Biologist in August 1998. He was formerly a temporary Biological Technician. Dawn Newbrough transferred to the Service from the Bureau of Indian Affairs in Phoenix, Arizona in July 1998. She replaced Barb McDonough, who retired in December 1997, as the Administrative Officer. Other employees who left are Todd Luke, who transferred to Litchfield WMD ; Timothy Munn, who transferred to St. Croix WMD ; Penny Robinson, Suzanne Trapp and Anita Grover, who all resigned; and Maria Olson and Andy Anderson, whose temporary appointments expired.



Photo 11. Refuge Staff. Photo by Andy Mitzel

The following is a list of the entire Minnesota Valley staff for Fiscal Year 1998, including the Friends of the Minnesota Valley who are located in the Visitor Center:

Permanent Full Time

NAME	TITLE	GRADE	REPORT DATE	STATUS
Boyd, Lonnie	Maintenance Worker	WG-7	11/13/94	
Bradley, Jim	Park Ranger	GS-7	11/15/92	
Collier, Linda	Administrative Technician	GS-6	10/01/95	
Endrizzi, Deanne	Park Ranger	GS-7	09/09/90	
Franke, Dean	Maintenance Worker	WG-8	03/30/97	
Gaunitz, Debbie	Refuge Operations Specialist	GS-7	06/21/98	
Hjelmgren, Jim	Park Ranger - LE	GS-9	09/14/97	
Kane, Chris	Bio-Science Technician	GS-7	07/24/94	
Kerr, Tom	Refuge Operations Specialist	GS-12	04/05/92	
Luke, Todd	Wildlife Biologist	GS-9	06/14/92	Transferred
Malling, Mike	Wildlife Biologist	GS-5	04/27/97	
McDonough, Barb	Administrative Officer	GS-9	10/08/90	Retired
McDonald, Sue	Park Ranger	GS-7	12/07/97	
Miller, Judith	Park Ranger	GS-11	06/28/92	
Mitzel, Andy	Park Ranger	GS-6	08/03/97	
Moyer, Ed	Park Ranger	GS-7	11/14/82	
Newbrough, Dawn	Administrative Officer	GS-9	07/05/98	
Samuels, Vickie	Park Ranger	GS-7	08/28/90	
Schreiner, Terry	Refuge Operations Specialist	GS-12	07/21/85	
Schultz, Rick	Refuge Manager	GS-14	10/16/94	
Sherry, Vicki	Wildlife Biologist	GS-9	03/20/94	
Wassather, Roy	Maintenance Worker	WG-9	07/28/91	

Grieme, Amy	Communications Coord.		09/09/96	
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East Side Neighborhood Services

Virginia Richmond continues to assist Refuge staff through the Neighborhood Services program which pays her salary and provides transportation to and from work. Ginny assists the administrative staff with various tasks including daily mail sorting, filing, and data entry projects.

Career Awareness Institute

The Career Awareness Institute is a federal program that provides paid training and skills development in fisheries and wildlife biology, landscape ecology, conservation biology, and other aspects of natural resource management. The program includes a three week academic phase and a six week work assignment at a selected field station. Katy Kraemer and Christopher Kessenich attended the National Conservation Training Center training session and spent the summer assisting the station biologist with various projects including oak savanna monitoring, purple loosestrife mapping, and floodplain forest monitoring. Chris also went on to be selected as a Student Career Experience Program student for the 1999 field season.

Volunteer Program

Volunteers contributed 9,064 hours to the Refuge this past year. A total of 322 volunteers participated in the program. This year was the second year for participating in the "Summer Stretch" program for local churches. Five churches chose the Refuge as their work site. Groups came out three days a week and did outdoor projects that the maintenance staff was not able to get to. They removed fence line, pulled trees and exotics from the prairie, cleaned up tree damage from the spring storms, and pulled weeds from around the Visitor Center. A total of 341 hours were contributed by 188 people with 162 of them under the age of 18.

Unit tours were added to the training offered to volunteers. Tours were given on cross country skis and snowshoes, in vans, and hiking. Next year we hope to expand on this program and get more incoming volunteers to participate.

Our unique partnership with The Nature Conservancy (TNC) continued for the third year in a row. The Refuge was the host site for a recognition event involving both organization's volunteers. We provided the site and TNC provided the speaker and food. About 65 people participated in this years event. The Volunteer Council received special recognition for the first time to honor their hard work and efforts.

Our Volunteer of the Month awards continue to be popular. Each month staff nominate a volunteer of the month who is awarded with a book of up to a \$40 value from the Blufftop Bookshop. This year a family and group were honored for the first time. This program has been going on since 1995 and is a fun way to recognize volunteers for their efforts.

Jan Anderson receives our Volunteer of the Year award. Jan has been the Volunteer Council Co-Chair for this past year. She is also a wildlife ranger who hikes the trails on a regular basis. She has made an extra effort this past year to keep the flow of communication going between volunteers and paid staff. She has also been at many of our special events taking photos and being the extra hand where ever needed. This past year Jan also crossed over her 500 hour mark for lifetime volunteer hours. With this her name goes on the plaque in our visitor center with other distinguished volunteers who have accomplished this goal. Jan is always a positive outlook and bright moment at any meeting or event. Her great spirit and sense of humor is an asset for any program.

Cooperative Work Programs

Twin Cities Tree Trust

Twin Cities Tree Trust once again took on several much needed public use projects. This organization has been our sole source for support in the completion of new and the rehabilitation of existing public use projects over the last 15 years. The only cost to the Refuge is for the materials. The projects completed and/or initiated during the time period are as follows:

- Installed post and rail fencing and a new entrance sign was constructed at the Russel Sorensen Landing/Parking Lot on Long Meadow Lake Unit.
- Constructed a new information kiosk and entrance sign at the Bloomington Circle Parking Lot within the Bloomington Ferry Unit.
- Initiated the construction of a section of the connecting trail between the Bass Ponds and Old Cedar Avenue parking lot. The project will be completed in 1999.



Photo 12. Post and rail fencing installed as an attempt to steer visitors to use the trail access provided from Russel Sorensen parking lot, Long Meadow Lake Unit. Photo by Terry Schreiner.

RCAR report

Forward

The transition to having both the RCAR and narrative reports based on the fiscal year has resulted in an improved method of compiling information. However, due to the differences in due dates (RCAR is due in October, the narrative in March) there are still several discrepancies in some of the numbers that are reported in the various sections. In 1999 we will strive to improve on the accuracy of the numbers and do a better job of recording them for the various reports.

1. a. Surveys & Censuses		Outcomes:
Inputs:	Outputs:	
\$43 1260 funds (\$K)	14 wildlife surveys conducted	TE: 10%
\$1 Other funds (\$K)	2 habitat surveys conducted	WF: 15%
\$44 Total funds (\$K)	0 % off-refuge	OMB: 15%
47 1260 Staff Days		HEC: 25%
0 Other Staff Days		IAF: %
47 Total Staff Days		SDA: %
115 Volunteer Days		RFW: 15%
		PED: 10%
		PRC: 10%

Baseline vegetation monitoring was completed at the Rapids Lake unit oak savanna site. Vegetation monitoring and nongame breeding bird surveys were completed at 9 floodplain forest sites.

A spring storm destroyed most of the nestling production at the Blue Lake heron colony as well as an eagle nest containing one eaglet and an adult at the Long Meadow Lake unit.

1. b. Studies & Investigations		Outcomes:
Inputs:	Outputs:	
\$5 1260 funds (\$K)	2 studies conducted	TE: %
\$1 Other funds (\$K)	0 % off refuge	WF: %
\$6 Total funds (\$K)		OMB: %
19 1260 Staff Days		HEC: 50%
13 Other Staff Days		IAF: %
32 Total Staff Days		SDA: %
75 Volunteer Days		RFW: 50%
		PED: %
		PRC: %

Leafy spurge beetles were monitored by the Dept. of Agriculture
NSP staff conducted vegetation, fish and invertebrate studies on the Black Dog unit

2. a. Wetland Restoration		Outcomes:
Inputs:	Outputs:	
\$30 1260 funds (\$K)	141 refuge acres restored	TE: %
\$53 Other funds (\$K)	214 off-refuge acres restored	WF: 50%
\$83 Total funds (\$K)		OMB: 20%
79 1260 Staff Days		HEC: 20%
670 Other Staff Days		IAF: %
749 Total Staff Days		SDA: %
3 Volunteer Days		RFW: 10%
		PED: %
		PRC: %

Restored the 72 acre Jailhouse Marsh located at the Louisville swamp unit. Also restored a 45 acre wetland at Murphy Hanrehan Park Reserve.

Outcomes:

TE - Threat. & Endangered Species
WF - Waterfowl
OMB - Other Migratory Birds
HEC - Healthy Ecosystems

IAF - Interjurisdictional & Anadromous Fish
SDA - Special Designation Areas
RFW - Resident Fish & Wildlife
PED - Public Education
PRC - Public Recreation

2. b. Upland Restoration		Outcomes:
Inputs:	Outputs:	TE: 10%
\$67 1260 funds (\$K)	180 refuge acres restored	WF: 20%
\$26 Other funds (\$K)	28 off-refuge acres restored	OMB: 20%
\$92 Total funds (\$K)		HEC: 20%
181 1260 Staff Days		IAF: %
214 Other Staff Days		SDA: %
395 Total Staff Days		RFW: 10%
4 Volunteer Days		PED: 10%
		PRC: 10%
Restored 115 acres to native grasses at Straight Creek WPA.		
2. c. Deepwater/Riverine Restoration		Outcomes:
Inputs:	Outputs:	TE: %
\$5 1260 funds (\$K)	0 acres of refuge deepwater habitat restored	WF: 25%
\$2 Other funds (\$K)	0 acres of off-refuge deepwater habitat restored	OMB: 25%
\$7 Total funds (\$K)	0 miles of refuge rivers restored	HEC: 25%
100 1260 Staff Days	2.1 miles of non-refuge rivers restored	IAF: %
54 Other Staff Days		SDA: %
154 Total Staff Days		RFW: 25%
318 Volunteer Days		PED: %
		PRC: %
Conducted riparian restorations along Minneopa creek and the LeSeur river to restore habitat for fish and wildlife, promote streambank stabilization, and reduce sediment loading within the watersheds. Restoration activities included: planting shrubs, willow posts, and willow fascines along streambanks and adjacent upland, installing cedar tree revetments, and constructing fences to exclude cattle.		
3. a. Water Level Management		Outcomes:
Inputs:	Outputs:	TE: 10%
\$8 1260 funds (\$K)	1667 acres managed	WF: 30%
\$7 Other funds (\$K)	18 units managed	OMB: 30%
\$15 Total funds (\$K)		HEC: 10%
72 1260 Staff Days		IAF: %
0 Other Staff Days		SDA: %
72 Total Staff Days		RFW: %
0 Volunteer Days		PED: 10%
		PRC: 10%
3. b. Moist Soil Management		Outcomes:
Inputs:	Outputs:	TE: 10%
\$4 1260 funds (\$K)	38 acres managed	WF: 30%
\$7 Other funds (\$K)	4 units managed	OMB: 30%
\$10 Total funds (\$K)		HEC: 10%
34 1260 Staff Days		IAF: %
0 Other Staff Days		SDA: %
34 Total Staff Days		RFW: %
0 Volunteer Days		PED: 10%
		PRC: 10%

[illegible]