

# Minnesota Valley National Wildlife Refuge

**Bloomington, Minnesota  
Fiscal Year 1997**



...“Flood’s Wrath Hits Home” “Area Waits, Prepares for Spring Flood” “A River Runs Wild and Vicious”... the headlines spoke as the water continued to rise.

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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 Twin Cities, Minnesota, is linear and extends 34 miles along the Minnesota River. It currently encompasses 10,514 acres in eight separate units. The Refuge Mission is to restore and protect the Minnesota River and associated habitats while providing opportunities for environmental education and recreation. It 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 oak savanna to oak-dominated forests.

Wetlands are thick with sedge meadows, cattail, and river bulrush. Water lilies, duckweed, and pondweeds thrive in open water areas. Over 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 overstory of ash, elm, oak, and other trees, with dogwood, chokecherry, and other shrubs beneath.

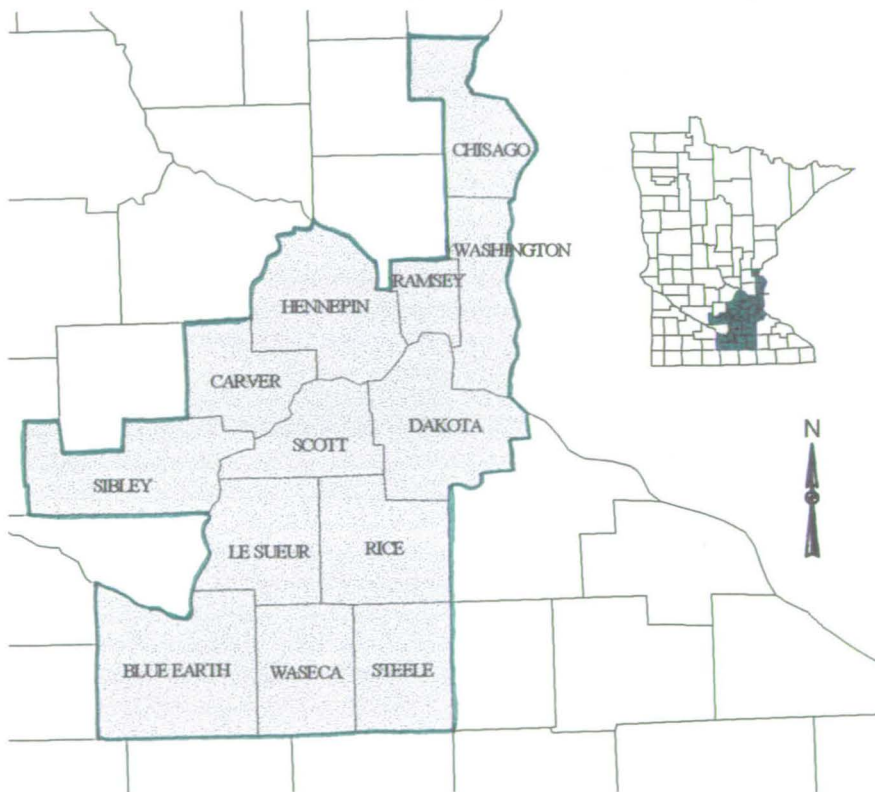
Shrubs such as sumac, hazel, and prickly ash encroach on the dry grasslands. Remnant prairies and savannas provide nesting habitat for dabbling ducks, wild turkeys, and a variety of songbirds. Native prairie grasses include big and little bluestem, switch grass, and Indian grass.

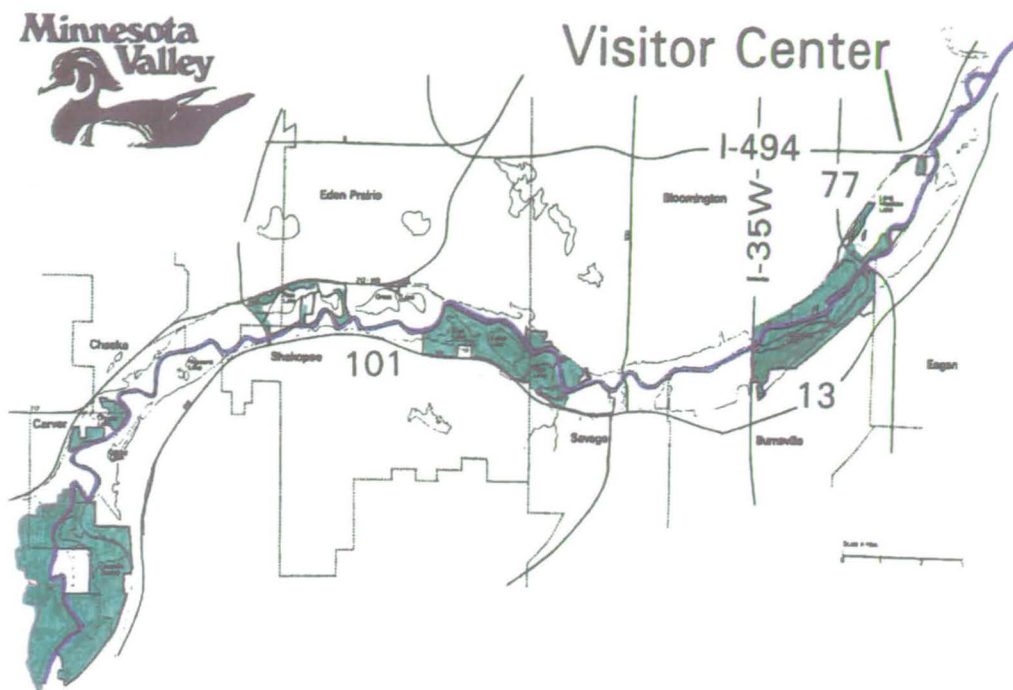
The focal point of the Refuge is the Visitor Center, which features an 8,000 sq. ft. exhibit space, a 125-seat auditorium, two multi-purpose classrooms, a bookstore, and an observation deck. Environmental education and interpretation opportunities are conducted from this facility. Recreational activities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

The Refuge also manages a 13-county wetland management district that extends from Chisago County north of the Twin Cities, to Blue Earth County south of Mankato. Outside 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.

Through 1997, eleven Waterfowl Production Areas totaling 1,884 acres were administered by Minnesota Valley NWR. In addition, 839 acres of easements are located within these 13 counties. Since 1987, refuge staff have worked with several hundred private landowners in this area.

### Counties With Land Managed by Minnesota Valley NWR





Refuge unit map.



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# 1

## ***Monitoring and Studies***

### ***1.a. Surveys and Censuses***

Significant wildlife occurrences at Minnesota Valley NWR in 1997 include:

One bald eagle was fledged on the Long Meadow Lake Unit in 1997. In addition, one eaglet was sighted at the Rapids Lake Unit nest and two eaglets at the Wilkie Unit nest located near the great blue heron colony. A new nest was also located near the Wilkie Unit late in the year.

Peregrine falcons continue to utilize the hacking box located on the smoke stack of the Black Dog Power Plant. Three falcons were fledged from this location in 1997.

Hundreds of monarch butterflies clustered together for overnight stopovers at the Visitor Center, and the Rapids Lake and Louisville Units in late August.

Great blue heron production at the Wilkie Unit was an estimated 459 nestlings (Table 1). This estimate is 22% below the seven year (1990-1996) average of 592 nestlings. This year's decline in production may be attributed to an increase of other species moving into the colony and the increased number of dead young herons observed on the ground during the June nestling count. Ten percent of the nests surveyed were occupied by species other than great blue herons (double-crested cormorants, great egrets and black-crowned night-herons).

**Table 1. Wilkie Great Blue Heron Nestling Production Estimates from 1986-1997.**

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

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. Over 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.**

	<b>1991</b>	<b>1992</b>	<b>1993</b>	<b>1994</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>
<b>Blue</b>	196	213	133	117	116	49	166
<b>Fisher</b>	50	204	154	103	90	167	364
<b>Rice</b>	370	11	102	0	39	12	20



### **Waterfowl and Waterbirds**

In 1997, the method used to conduct Refuge waterfowl surveys was modified. Sites were dropped from the survey that were impossible to access and other sites were added to include newly acquired property. Priority was given to sites that have water management capabilities. Since the changes, comparison of this year's data to previous surveys difficult, the following information reflects only the trends observed in 1997.

#### ***Winter***

Black Dog Lake is the most significant waterfowl wintering area on the Refuge. There is open water throughout the year due to warm water discharge from the Black Dog Power Plant. This area is primarily used by mallards with a total of 4,815 visiting in 1997. The one time peak count of 4,200 occurred in early January. Canada geese, common goldeneye, and common mergansers also were present, along with one injured white pelican who has made the lake his home for the last year.

#### ***Spring***

Spring migration numbers were hard to determine due to extreme flooding. Actual survey points could not be reached, but during the first week of April we observed blue-winged teal, northern shovelers, scaup, ring-necked ducks, canvasbacks, bufflehead, ruddy ducks, common and hooded mergansers, and American coot using the Refuge.

#### ***Summer***

Mallards, wood ducks, Canada geese, and occasionally blue-winged teal nest on the Refuge. No blue-winged teal were observed during summer waterfowl surveys on the Refuge.

#### ***Fall***

Fall migration appeared to begin in mid-August with blue-winged teal, wood ducks, and white pelicans passing through. Peak numbers occurred the first week of October primarily due to the 26,194 American coots observed at Refuge observation points. Flocks of American wigeon, northern shovelers, northern pintails, double-crested cormorants, and ring-billed gulls also stopped over on Refuge wetlands and lakes. The largest diversity of species were observed on the Refuge in late October/early November. Species observed throughout the Refuge (in addition to species mentioned earlier in the Fall) included tundra swans, green-winged teal, canvasbacks, scaup, ring-necked ducks, bufflehead, and ruddy ducks. Thirty-seven caspian terns were observed at Black Dog Lake in mid September.

### **Oak Savanna Monitoring**

Baseline vegetative data was collected on a 15-acre degraded oak savanna in the Louisville Swamp Unit. The fire monitoring method designed by the National Park Service was used to collect information on both woody and herbaceous vegetation present in eight 20 x 50 meter plots. In addition, strip transects were used to determine the

nongame breeding birds associated with this site, and Dr. John Hamer from the Medical Institute of Minnesota assisted by collecting information on the reptiles and amphibians of this area. The data is currently being analyzed.

#### **Deformed Frogs**

This was the first year that frogs were monitored on the Refuge according to protocol established by the Regional Biologist. Volunteers searched for frogs at the Little Bass Pond (Long Meadow Lake Unit) and Soberg WPA. Although a lot of time was spent searching for frogs, only twenty-seven green frogs were captured at the Little Bass Pond. No deformities were found.

#### **Gypsy Moths**

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

### ***1.b. Studies and Investigations***

Volunteer Marcus Mueller, a student at the University of Minnesota, initiated a study of the water quality and vegetation of restored wetlands of Waterfowl Production Areas.

Biologists from Northern States Power Company (NSP) began a two year study of the fish, invertebrate, and plant communities of Black Dog Lake as part of their discharge permit requirements. 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**

Thirty-two wetlands totaling 188.5 acres were restored this year on Waterfowl Production Areas (WPA) and habitat easement property (Table 3).

**Table 3. Wetlands Restored on WPA's in 1997.**

Unit	County	Acres Restored
Cobb River WPA	Blue Earth	131.5
Perbix WPA	Carver	13.6
Redhead WPA	Sibley	25.4
Minkel Easement	Blue Earth	18.0

#### **Off-Refuge**

Forty-three wetlands, consisting of 129 acres, located on private, state, and county property were restored through the Partners for Wildlife program and contributions from local conservation groups.

A total of 2,615 flyers and brochures were sent to landowners within 10 counties to encourage participation in wetland, prairie, and riparian restoration programs. As in years past, most of this work was completed in cooperation with many partners. See section 5a for a listing of these cooperative efforts.



Photo 1: A 2.5 acre wetland restored on the Kittock property in Hennepin County.

## ***2.b. Upland Restoration***

### ***On-refuge***

A total of 298 acres of former agricultural land on the Rapids Lake Unit was seeded to native grasses and forbs during late May and early June. The seeding was accomplished with refuge staff and equipment. Approximately 58 acres were treated with Roundup Ultra herbicide by a contractor to control competition from weeds.

In order to maintain the genetic integrity of the adjacent native prairie (52 acres) and provide long term stability of the prairie planting, only local origin seed was used. To reduce costs, a large quantity of grass seed was picked up from nursery fields on Big Stone NWR. The seed used to establish the nursery fields was a local ecotype gathered from native grass stands on the refuge. The remainder of the seed and forbs were purchased from Prairie Restorations Inc. of Princeton, Minnesota.

The following is a listing of species planted and approximate amounts seeded per acre:

Big Bluestem.....	6.0 pounds (lbs.)
Indian Grass.....	.15 lbs.
Switchgrass.....	.15 lbs.
Little Bluestem.....	1.2 lbs.
Side Oats Grama .....	1.2 lbs.
Blue Grama.....	.25 lbs.
Kulm's Brome.....	.25 lbs.
June Grass.....	.25 lbs.
Leadplant.....	.20 ounce (oz.)



Butterflyweed.....	.16 oz.
Canada Tickfoil.....	.16 oz.
Common Ox-eye.....	.48 oz.
Purple Prairie Clover.....	.33 oz.
Yellow Cone Flower.....	.48 oz.
Black-eyed Susan.....	.33 oz.
Stiff Goldenrod.....	.33 oz.
Tall Blazing Star.....	.33 oz.
New England Aster.....	.08 oz.
Blue Vervain.....	.12 oz.
Gray Goldenrod.....	.08 oz.
Wild Bergamot.....	.16 oz.
Stiff Goldenrod.....	.16 oz.
Bush Clover.....	.08 oz.



Photo 2. Big bluestem growing to point of producing seed heads within 30 days after "release" from competition by mowing. Photo by Terry Schreiner.

The refuge staff worked together to seed 489 acres of native prairie grasses on refuge units, WPAs, and a USFWS grassland easement (Table 4).

**Table 4. Native Prairie Seeded in on the Refuge in 1997.**

Unit	County	Acres Restored
Rapids Lake Unit	Carver	320
Perbix WPA	Carver	39
Redhead WPA	Sibley	40
Straight Creek WPA	Steele	90
Minkel Easement	Blue Earth	22.5

### ***Off-Refuge***

One hundred sixty-six acres of native grasses were seeded on 10 parcels of public and private property located throughout the Lower Minnesota Watershed. Contributions by local conservation groups and by the Partners for Wildlife program provided funds for this accomplishment.

## ***2.c. Deepwater/Riverine Restoration***

### ***On-Refuge***

There were no riparian restorations conducted on Minnesota Valley NWR.

### ***Off-Refuge***

#### **Lakeshore restoration**

Twenty-six hundred linear feet of eroded, privately owned shoreline along Lura Lake in Blue Earth County was restored through bank resloping, matting, riprapping, and revegetation efforts. Partnerships between federal, state, and county agencies, private conservation groups, and public schools provided the teamwork and funding to accomplish this project. Please refer to section 5a for a complete listing of cooperators.

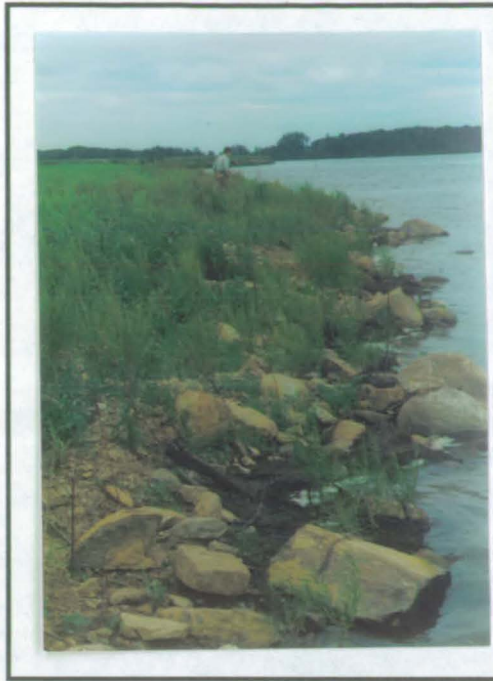


Photo 3. Shoreline restoration with willow stakes at Lura Lake. Photo by Anita Grover.

#### **Streambank restoration**

Carver Soil and Water Conservation District has been working in partnership with Refuge staff to restore streambank habitat through installation of cedar tree revetments, fence exclosures, and planting willow posts. Over 700 ft. of streambanks are in various stages of completion (will be completed in FY 1998).

In partnership with the Minnesota Department of Natural Resources, landowners were contacted and projects planned for restoration activities to occur in fiscal year 1998. Two landowners, situated in Blue Earth and Waseca counties, are slated for streambank restoration activities which include installation of cedar tree revetments; planting willow posts and fascines; installing fencing exclosures along streams; and planting native shrubs to revegetate riparian areas. More than 2000 ft. of streambank restoration activities will be completed by FY 1998.

#### **Floodplain restoration**

Over 30 site visits to landowners were made to promote protection and restoration of floodplain habitat located within the Lower Minnesota Watershed. Refuge staff took the lead to encourage floodplain habitat restoration through promotion of the Wetland Reserve Program, a United States Department of Agriculture program. A total of 248 acres of floodplain habitat on five different properties were submitted for approval by the Natural Resource Conservation Service.



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# 3

## ***Habitat Management***

### ***3.a. Water Level Management***

Efforts to manipulate water levels in 1997 were again dictated by the Minnesota River. Excessive spring flooding delayed drawdown attempts and growing season flooding set-back production of moist soil plants in most pools. Fisher Lake was drawn down completely for the first time due to the new structure and intra-lake channel. Although flooding prevented the establishment of vegetation, the basin began to consolidate and will now provide a good substrate for new plants.

The newest addition to the refuge water management scheme, Rapids Lake, experienced conditions similar to Fisher Lake. Partial drawdowns over the last two years have helped to stimulate submergents. A diking and channeling project slated for 1998 will help to gain more control over water levels.

Blue Lake water levels were held above normal pool this past summer to open monotypical stands of river bulrush. The wetland is returning to a hemi-marsh condition as anticipated. Future drawdowns will be needed to increase plant diversity.

It was a slow year for progress on the Rice Lake Environmental Management Project (E.M.P.). Flooding put work behind schedule, although, a ditch plug was completed on Rice Lake and a berm was constructed between Continental Grain Marsh and the Minnesota River to protect the natural levee. In addition, bottomland hardwood trees were planted in the floodplain on the north side of Rice Lake. Completion of the project with an intra-lake channel is expected in 1998.

### ***3.b. Moist Soil Management***

Moist soil units were completely inundated by the Minnesota River throughout the spring season, rendering a lot of food resources inaccessible to migrating waterfowl. Plant production was adequate this summer, however, woody species invasion is keeping these units from realizing their full potential. Flooding prevented any mechanized

manipulation. Fall bird use was minimal. Seepage continues to hamper efforts to maintain the schedule of fall water levels, although Chaska North improves every year as the bottom appears to be sealing itself. Other units are under evaluation by the U.S. Army Corps of Engineers for potential rehabilitation projects.

### ***3.c. Graze/Mow/Hay***

Four hundred twenty acres of recently planted prairie situated on Perbix, Mud Lake, and Straight Creek Waterfowl Production Areas were mowed by refuge staff to control weeds.

### ***3.d. Farming***

Cooperative farming activities were conducted on Straight Creek, Perbix, and Redhead Waterfowl Production Areas. Soybeans were planted on 190 acres of land, divided among these three areas, to prepare for native prairie seeding activities in 1998.

### ***3.e. Forest Management***

No activity this year.

### ***3.f. Fire Management***

With 11 prescribed fire crew members, 6 prescribed fires were conducted totaling 125 acres. This included Refuge, WPA, and easement lands. Fourteen lower priority burns were scheduled for this year but weather conditions along with the narrow prescription required for urban burning prevented their being carried-out. One of our smallest yet most important burns in terms of visibility was the visitor center burn. With an international airport on one side and a hotel on the other side, this provided an excellent opportunity to educate the public on the virtues of prescribed fire.

### ***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 as well as the Rice Lake Wayside. Although the beetle's success has varied on the Refuge, it may take several years to truly assess the release efforts. New outbreaks were chemically treated with Krenite S, and this appears to

be keeping these areas in check.

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 thistle were mowed on the Upgrala Unit. Thistle were also sprayed by contract on the Cobb River WPA.

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# 4

## ***Fish and Wildlife Management***

### ***4.a. Bird Banding***

Wood duck trapping efforts were tried at Blue Lake. No wood ducks were captured, probably due to the numerous predators visiting the trap sites.

### ***4.b. Disease Monitoring and Treatment***

No activity this year.

### ***4.c. Reintroductions***

No activity this year.

### ***4.d. Nest Structures***

Intern Sue Aker checked the condition of existing structures for evaluation. Volunteer Adam Robbins removed all existing structures with the exception of those in our Bass Ponds Unit. These will be maintained for environmental education and demonstration purposes.

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

No activity this year.

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# 5

## ***Coordination Activities***

### ***5.a. Interagency Coordination***

#### ***Partnership Grants***

##### **Conservation Partners Grant**

Refuge staff worked with the Friends of the Minnesota Valley and the Carver Soil and Water Conservation District to complete two conservation partner grants that provided cost sharing on the restoration of 105.5 acres of prairie and the completion of two riparian fencing projects.

##### **Met III Grant**

In partnership with Refuge staff, a Minnesota Waterfowl Association (MWA) biologist has been working from 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. Seventeen wetlands totaling 98.9 acres have been restored to date on private property in the target area. In addition, 10.3 acres of native prairie have been seeded on two sites. Forty acres of prairie seeding and restoring a 41-acre wetland on the Murphy-Hannrehan Park Reserve are among the projects scheduled for 1998. In addition to the costs of restoration work, the salary of MWA Biologist Tom Cooper, who is stationed at the Refuge, is paid through this grant.

##### **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, 40 wetlands totaling 88.2 acres have been restored on federal and private land within the target watershed. Four sites totaling 117 acres have been seeded to native prairie grasses.

### **Service Joint Venture and Challenge Cost Share**

A total of \$31,950 in matching funds was awarded this year for wetland and prairie restoration projects located on the Refuge and private lands. A total of \$20,209 of this award was spent this year on restoration efforts. On-refuge projects included seeding 130 acres of native prairie grasses on Redhead and Straight Creek Waterfowl Production Areas. Off-refuge restoration efforts included five wetland restorations completed on Rice Lake State Park and 40 acres of wetlands restored in Le Sueur County.

Partners for the above projects contributed \$49,550 toward completion of restoration efforts. The conservation groups, companies, and private individuals involved were: Minnesota Waterfowl Association, Wildlife Forever, Pheasants Forever, Montgomery Sportsman's Club, Minnesota Pheasants, Hadley Companies, and Wildlife Artist Jim Hautmann.

### ***Partnership Agencies***

#### **Natural Resources and Conservation Service**

Refuge staff worked with the NRCS state office to promote floodplain and wetland restoration and preservation through the Wetland Reserve Program by taking the lead on recruiting landowners, conducting site visits, developing restoration plans, and submitting applications. Refuge staff spent over 148 hours to develop and submit applications and restoration plans for 557 acres of property (248 of which are in the floodplain) located within Sibley, Blue Earth, Le Sueur, Carver, and Scott counties.

#### **Minnesota DNR**

The Minnesota Blue Earth River Team (BERT), consisting of DNR division representatives, worked in partnership with Refuge staff to design and implement riparian restorations, conduct land acquisitions, hold public informational meetings, and establish landowner contacts to benefit ecological communities within the Blue Earth River Watershed. The DNR paid for half of the salary of a Refuge private lands biologist to work on these issues.

#### **Soil and Water Conservation Districts (SWCD)**

Carver County SWCD worked as a Refuge partner through a cooperative agreement to restore riparian habitat.

Scott and Rice County SWCD maintained cooperative agreements with the Refuge to assist with wetland restorations. Both conservation districts contacted landowners and designed the wetland restorations to be accomplished.

Hennepin County SWCD was a partner through a cooperative agreement to restore wetland and riparian habitat.

Blue Earth and Faribault County SWCD were partners to help complete the Lura Lake shoreline restorations.

## ***Additional Partnerships***

### **Lura Lake Restoration**

In addition to the DNR and Blue Earth and Faribault County SWCD's, the following groups and individuals worked together with the Refuge to complete the 2,600 ft. Lura Lake lakeshore restoration: Lura Lake Association, Minnesota Conservation Corps, Blue Earth County Parks Dept., Blue Earth River Basin Initiative, Faribault County Pheasants, Faribault County Deerhunters Association, Roland Osmundson, Larry Swenson, and Dulas Construction.

### **Wetland and Prairie Restorations**

In addition to the clubs already mentioned, the following groups contributed toward the completion of wetland, riparian, and/or prairie restorations: the Blue Earth River Basin Initiative, St. Olaf's School Nature Area Project, and Prior Lake Wetland District.

## ***5.b. Tribal Coordination***

No activity this year.

## ***5.c. Private Land Activities***

Over 391 landowners were visited in the field and provided technical assistance. Approximately 50 wood duck and bluebird boxes were distributed within the 13-county area.

Technical habitat restoration assistance was provided to Unimin Corporation, the City of Shakopee, Sakatah Lake State Park, Rice Lake State Park, and the City of Waseca.



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# 6

## ***Resource Protection***

### ***6.a. Law Enforcement***

Law enforcement issues continue to be a challenge for Refuge staff. A total of 17 citations were issued for various hunting, fishing, and drug-type violations. There was no full-time refuge officer available and all law enforcement duties were performed by collateral duty personnel when available. A full-time refuge officer has come aboard and will work closely with local and state agencies this coming year.

A bike patrol program has been added for the Refuge staff to adequately patrol areas of high hiking and biking use. The new refuge officer will also work closely with K-9 personnel from the Burnsville Police Department in order to help curtail drug activity within the Black Dog Unit.

### ***6.b. Permits and Economic Use Management***

No activity this year.

### ***6.c. Contaminant Investigation***

Refuge and Twin Cities Field Office staff continue to work with the Department of Army on the cleanup of Round Lake as part of the Twin Cities Arsenal Superfund Site. During the year, the Army has completed an assessment of the contaminants of the area and has concluded that for the most part, the contaminants previously deposited in Round Lake are not a problem. Continuing investigations are scheduled to occur and we will work with the Army and others to assure that contaminant issues associated with Round Lake are appropriately addressed.

#### **6.d. Contaminant Cleanup**

On November 20, 1997, Cypress Semi-Conductor experienced a leak in its cooling system bladder which sent over 700 gallons of 19% ethylene glycol into the storm water sewer system and eventually Hog Back Ridge Pond. The immediate results were a fish kill and at the time of this writing, over 200 fish (mostly carp and bullheads) succumbed. Long-term affects will likely be negligible but we do plan to work with Cypress to avoid similar problems like this in the future.

#### **6.e. Water Rights Management**

No activity this year.

#### **6.f. Cultural Resource Management**

No activity this year.

#### **6.g. Land Aquisition Support**

The Refuge received a North American Wetland Conservation Act Grant (NAWCA) to restore, enhance, and protect wetlands and grasslands within the Minnesota River Watershed. A total of \$1.1 million was received from the NAWCA grant; the remaining \$2.5 million match was spent by a variety of partners. Through these grants and supplemental matching funds, 3,074 acres of wildlife habitat will be restored, protected, and/or enhanced.

Three Waterfowl Production Areas totaling 210.3 acres were acquired in 1997 (Table 5). Funding for these acquisitions included \$130,500 of Migratory Bird Conservation Account and \$167,500 of NAWCA grant funds.

**Table 5. Waterfowl Production Areas Acquired in FY 1997.**

<b>Name of WPA</b>	<b>County</b>	<b>Acres Acquired</b>
Kenneth & Eileen Stradtman	Blue Earth	88.5
Eugene Moravec	Le Sueur	53.2
Walter & Joan Meffert	Sibley	68.6

Three USFWS habitat easements totaling 140.7 acres were acquired in 1997 (Table 6). The Boecker easement was a donation of habitat along Bevens Creek, a priority watershed for the Refuge.

**Table 6. USFWS Habitat Easements Acquired in FY 1997.**

Name of Easement	County	Acres Protected
Hensel	Blue Earth	42.0
Maria & William Boecker	Carver	20.5 Donation
Merlyn Breuns	Le Sueur	78.2

After several years of discussion, the City of Bloomington transferred land management responsibilities to 400+/- acres of bluff and floodplain within the Long Meadow Lake Unit to the Refuge. The property is located on the north side of Long Meadow Lake between Old Cedar Avenue and Lyndale Avenue. Through a Memorandum of Understanding, we will manage the property as part of the Refuge. One of several issues that need to be addressed is the use of mountain bikes and their associated negative impacts to vegetation and trails.

## ***6.h. Threats and Conflicts***

A variety of completed and/or proposed 1997 projects in or near the Lower Minnesota River Valley potentially threaten the biological and aesthetic values of the Refuge. Projects on which comments were submitted are as follows:

### **Airport Expansions**

Refuge staff held several meetings with the Metropolitan Airport Commission (MAC) and the Federal Aviation Administration to discuss mitigation and the associated effects of the new north-south runway at the Minneapolis-St. Paul International Airport. The runway would significantly affect numerous environmental educational and interpretive programs at the Bass Ponds and other adjacent areas of the Refuge. A letter detailing our expected mitigation was sent to MAC on May 22, 1997 but no response has been received as of this writing.

Comments were provided to MAC on a second proposal to extend an existing runway, 4-22, within the Minneapolis-St. Paul International airport. This proposal was deemed not to cause adverse effects for Refuge operations.

Comments were provided to MAC on a proposal to extend existing runways and expand support facilities at the Flying Cloud Airport in Eden Prairie, Minnesota. The airport is located on the Minnesota River bluff line and flight paths go over both the Wilkie and Upgrala units of the Refuge. The expansion does have the potential to adversely affect both wildlife and public use of the area.

### **Savage Fen\County Aide State Highway 27 Proposal**

Considerable staff time was expended attending meetings, preparing oral and written statements and other associated activities concerning the Savage Fen and County State Aide Highway 27 proposal. The controversy over the road proposal and its effects on the fen has been going on for 20 years. Approximately 60% of the 60 acre fen and 50% of the 435 acre wetland complex is currently in the Refuge. Calcareous fens are considered a unique and rare wetland type in North America.

Over the years, numerous questions have been raised about the effect of the proposed road on the fen and the wetland complex. Many of these have gone unanswered over the years. In response to pressure from the road proposers who requested a final decision, all regulating agencies convened to develop a final fen management plan in cooperation with interested parties. An addendum to the plan will address the compatibility of the road with the fen. The DNR Commissioner will be making the final decision on whether or not to grant the permit for construction.

The position of the USFWS is that the road as proposed should not be approved. The main concerns are: (1) plant community degradation from salt spray; (2) adverse effects on ground water movement during and after construction; and (3) severe reduction of management options due to the elimination of one of two remaining acceptable wind directions for prescribed burning operations.

# 7

## ***Public Education and Recreation***

A conservative estimate of 177,000 individuals visited the Refuge during FY97. Most of this visitation (114,000) occurred on Refuge trails and observation points. An estimated 8,000 hunters visited the Refuge and spent a majority of their time pursuing whitetail deer during the archery season. We also provided fishing opportunities to 3,500 anglers.

Our environmental education program reached out to approximately 7,500 students and teachers. Most of these groups visited the Refuge Visitor Center and participated in one of our environmental education curriculums. We also contacted nearly 11,000 individuals with off-site programs and events. The following summarizes our highlights associated with visitor services and outreach activities.

### ***7.a. Provide Visitor Services***

#### **Exhibits and Facilities**

##### ***Visitor Center Gallery Exhibits***

Nine different exhibits graced the walls of the Visitor Center's art gallery and six opening receptions were held. The exhibits were used as a theme for the River Steward Saturdays and drew many first time visitors to Minnesota Valley National Wildlife Refuge. The exhibits were listed in the "Arts and Entertainment Section" of the local area newspapers. Art gallery exhibits in 1997 were as follows:

- Award Winning Nature Photos by the Minnesota Nature Photography Club
- Minnesota Roots by Artist Nancy Lamberger
- Endangered Species, Traveling Exhibit by the Bell Museum of Natural History
- Art Acres by Artist Trisha Fabry
- Minnesota Junior Duck Stamp Exhibit by Minnesota Young artists in grades K-12
- Minnesota Critters by Artist Dodie Logue
- Orchids and Wildflowers of Minnesota Scientific and Natural Areas by Artist Denise Friesen
- Confluence and Influence of the Minnesota River by Artist Wendy Lane
- Metamorphosis by Artist Agnes Fine

### ***Bloomington Ferry and Wilkie Unit Facilities***

The Bloomington Ferry and Wilkie Unit parking lots were completed by Hennepin County during the year. The project was required mitigation with the new Highway 169 Bridge that transected these units. In addition, parking lots and boat ramps for Rice and Fisher Lakes were also completed. Trailhead kiosks and signage will be installed in 1998 by Refuge staff.

### **Recreational Programs**

#### ***Young Waterfowlers Program***

In cooperation with several partners including the Minnesota Waterfowl Association, Minnesota DNR, Burger Brothers Sporting Goods, and the Minnesota Duck and Goose Callers Association, the Refuge reinvigorated its youth waterfowl program in 1997. Consistent with a fresh plan developed by Intern Mike Bonham (University of Wisconsin - LaCrosse), Refuge staff and volunteers shared top quality classroom and field experiences for 11 youth and eight mentors. These individuals spent 115 hours on Long Meadow Lake harvesting 36 ducks and two geese. Following the season, a wild game feed was hosted by Refuge staff and was attended by 40 individuals who enjoyed mouth-watering wild game dishes.



Photo 4. Young Waterfowlers receive instruction on the finer points of duck and goose calling. Photo by Terry Schreiner.



### ***Disabled Waterfowl Hunting***

Fifteen disabled hunters spent 78 hours harvesting seven ducks and eight geese on Refuge lands during the 1997 waterfowl hunting season. This program is organized and administered by a non-profit organization known as Capable Partners.

## **Environmental Education Activities**

### ***Curriculum***

After much review, work continues on the new environmental education curriculum for the Refuge. It is being developed by Refuge staff and volunteers and will greatly benefit our environmental education programming. Upon completion, teachers and students will have the opportunity to participate in no less than ten Refuge related natural resource topics. The curriculum is expected to be completed early in 1998.

### ***Preschool Program***

Our preschool program continues to be successful. Over 1,000 youngsters participated in environmental education activities that addressed a variety of topics including wildlife habitat and migration.

### ***Big River Journey***

In cooperation with the Mississippi National River and Recreation Area (a unit of the National Park Service), Refuge and Park Service staff developed a program for 4th to 6th grade students to explore the Minnesota and Mississippi River on a paddleboat. Over a two-week period in May, 1997, 1,015 students participated in this program.

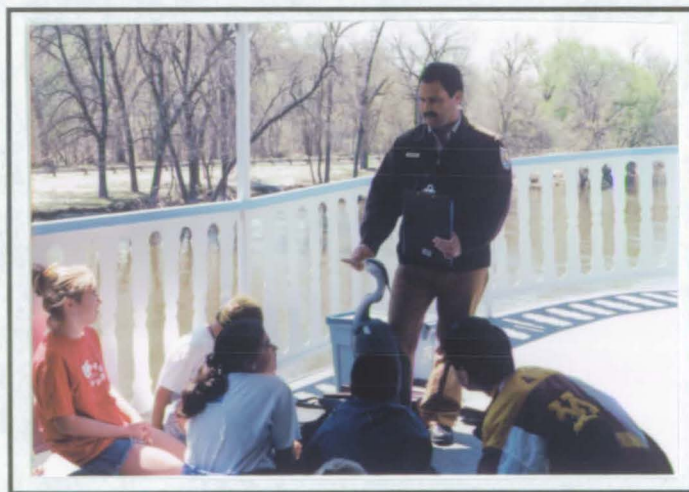


Photo 5. Students learn about wetland birds.



### ***Scouting***

A variety of programs and activities have been developed for Boy and Girl Scouts who desire to learn more about natural resource issues. Once such program, the volunteer-led Watching Wildlife Program, now in its second year, reached over 700 Boy and Girl Scouts. As part of our program, a scouting incentive patch has been developed and is distributed to scouts who complete four or more programs. In 1997, 27 scouts earned these patches. Finally, four Eagle Scouts planned and completed Refuge projects which included brush clearing and wood duck box construction.

### ***Partnership Schools***

The number of "Partner Schools" that participate in Refuge environmental education programs was increased to a total of 16. This program was established a few years ago to encourage teachers and schools to become more involved in Refuge activities and programs. Participants receive priority scheduling and are encouraged to provide some assistance to the Refuge in the form of a service learning project. In some cases, school districts also receive financial assistance to pay for the cost of busing kids to the Refuge. During 1997, we focused the Partner School program on inner city schools with high minority student enrollment.

### ***Water Quality Trekking Pack***

The Water Quality Trekking Pack, developed by Suzanne Trapp, is a long-term biological monitoring program that engages 7th-12th grade students throughout the Lower Minnesota River Valley in hands-on water quality monitoring. In August 1997, the program received a grant of \$28,000 from Cargill. With this money, many new backpacks filled with water sampling equipment were created, busing money was made available for participating schools, and a Program Coordinator was hired through the Friends of the Minnesota Valley to oversee all of the program's logistics and to set the tone for the program's future.

Int the Fall of 1997, over 50 teachers and students participated in the Water Quality Trekking Pack training sessions. From this, 13 classes and over 300 students will be sampling a total of 16 sampling sites along the Valley. Their sampling results gathered throughout the school year will be used by Refuge Biologist Vicki Sherry and will be shared with organizations such as the Minnesota Pollution Control Agency and the Lower Minnesota River Watershed for long-term trends monitoring.

### **Region 3 Resource Library**

Minnesota Valley NWR houses the Region's Resource Library, the purpose of which is distribute a variety of materials to other Service offices, teachers, and conservation

organizations. Services provided by the Resource Library are as follows:

- FWS displays were distributed 40 times to Service offices and public conservation agencies.
- A total of 961 videos and films were distributed to teachers, Service offices, and public conservation agencies.
- Responded to 314 requests for information and natural resource materials
- Educational Kits were distributed to 92 different organizations that include schools, other Service offices, and conservation organizations. A summary of the uses of these kits is as follows:

Prairie Trunk	21
Project Wet Trunk	2
Suitcase for Survival	20
Enviroscape Model	16
Wetland Trunk	17
Wolf Box	16
Zebra Mussel	0
Total	92

## ***7.b. Outreach***

### **Special Events**

#### ***Junior Duck Stamp Competition***

The Refuge again hosted Minnesota's Junior Duck Stamp Competition for 1997. Seven hundred students in grades K-12 participated in the competition representing 42 individual schools. Kevin Edstrom, Park Rapids, Minnesota, captured the Best-of-State Award with his pastel rendering of a mallard hen and ducklings. In the National Competition, Kevin's art placed in the top fifteen. Five-hundred guests participated in the Junior Duck Stamp Award Ceremony held across the street from the Visitor Center at the Airport Hilton Hotel on March 15, 1997. A traveling exhibit was developed and traveled to seven sites, six of which were out of the Metro area. Total viewing audience is estimated at approximately 5,000. The traveling exhibit was also displayed at the Second Annual Duck Habitat Day in Minneapolis.



Photo 6. Josh Davis reflects the happiness he felt upon receiving a second place award for the Minnesota Junior Duck Stamp Competition. Photo by Judie Miller.

### ***National Wildlife Refuge Week***

Refuge staff once again participated in National Wildlife Week during April 1997. A total of 4,133 students were contacted. The theme of this year's program was "Nature's Web: Communities in Conservation."

### ***International Migratory Bird Day***

In cooperation with the Como Zoo in St. Paul, an estimated 3,215 folks were provided information about migratory birds during International Migratory Bird Day on May 10, 1997.

### ***Youth Fishing Day***

On June 7, 1997, the Refuge and numerous partners hosted Youth Fishing Day at the Bass Ponds. Over 450 attended the event including 250 inner city youth and kids involved with the Big Brothers and Big Sisters program. Sixty-five fishing experts and volunteers made the event a success by educating the participants on proper and ethical fishing techniques. Following a fish fry hosted by the Red Lake Nation, participants spent the afternoon catching bluegill and largemouth bass. Each kid also took home educational literature and their own rod and reel.





Photo 7. A youngster anxious to try his newly acquired skills at Youth Fishing Day. Photo by Vicki Sherry.

### ***River Steward Saturdays***

The Friends of the Minnesota Valley in cooperation with Refuge staff hosted ten River Steward Saturday events during the year. The purpose of these events was to increase public awareness of the Friends and the Refuge and to address issues facing the Lower Minnesota River Valley. More than 1,700 people attended one or more the following events: "Endangered Species"; "Artscraps and Animals"; "Just Ducky"; "Minnesota Critters"; "Watersheds & Wildflowers"; "Minnesota River"; "Swamp Stomp"; "Fishing Clinic"; "Trash & Treasure Hunt"; "Valley Venture".

### ***Enrichment Series***

An evening highlight of this year's program was the enrichment series. Speakers were scheduled monthly to talk on a refuge related topic for the volunteers and Friends members. A total of 444 people attended these gatherings.

### ***Scott County Outdoor Education Days***

Refuge staff and volunteers gave presentations about wildlife and the Refuge to fifth and sixth graders from Scott County schools.

### ***Carver County Days***

Refuge staff gave presentations to over 300 youth from Carver County schools. Talks included topics about wildlife and the Minnesota Valley.

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# 8

## ***Planning and Administration***

### ***8.a. Comprehensive Conservation Planning***

Minnesota Valley NWR is scheduled to begin its comprehensive conservation plan in FY98.

### ***8.b. General Administration***

#### **Refuge Funding - FY97**

Refuge Operations	1261	\$980,110
Volunteer Program	1261	20,200
Challenge Grant Projects	1261	20,100
Refuge Contaminants	1261	5,000
Maintenance Management	1262	32,253
NA WMP Projects	1230	24,950
Private Land	1121	122,000
Fire Management	9251	31,993
Career Awareness	5100	10,000
Ecosystem Funds	1261	157,000
Resource Center	various	<u>55,000</u>
Total		\$1,458,606

### Refuge Staffing

John Schomaker, Outdoor Recreation Planner for the Refuge since 1987, transferred to the Regional Office in August, 1997 to assist with the Region's effort to complete Comprehensive Conservation Plans for all refuges. Following John's transfer, Terry Schreiner assumed many of John's responsibilities and now is concentrating his efforts on outdoor recreation programs and potential Refuge threats and conflicts. Following these changes, Tom Kerr was selected as Refuge Operations Specialist GS-12 and now serves as the Refuge's Primary Assistant Manager.

The following is a list of employees who were members of the staff at Minnesota Valley in 1997.

<u>Permanent Full Time</u>	<u>Grade</u>	<u>OD Date</u>
1. Schultz, Richard D. Refuge Manager	GS-13	10/16/94
2. Kerr, Thomas M. Assistant Manager	GS-12	04/05/92
3. Schreiner, Terry Refuge Ops. Specialist	GS-12	07/21/85
4. Schomaker, John H. Sr. Outdoor Rec. Planner	GS-12	08/02/87 Transferred
5. Miller, Judith B. Refuge Ranger	GS-11	06/28/92
6. Sherry, Vicki L. Wildlife Biologist	GS-9	03/20/94
7. McDonough, Barbara A. Administrative Officer	GS-9	10/08/90 Retired
8. Luke, Todd R. Wildlife Biologist	GS-9	06/14/92 Transferred
9. Wassather, Roy Maintenance Worker	WG-9	07/28/91
10. Moyer, Ed R. Park Ranger	GS-7	11/14/82
11. Bradley, James S. Park Ranger	GS-7	11/15/92
12. Samuels, Vickie L. Park Ranger	GS-7	08/28/90
13. Boyd, Lonnie Maintenance Worker	WG-7	11/13/94
14. Collier, Linda J. Administrative Technician	GS-6	10/01/95
15. Endrizzi, Deanne T. Park Ranger	GS-7	09/09/90

16. Chris Kane Biological Technician	GS-7	07/24/94
17. Robinson, Penny Office Assistant	GS-5	06/25/95 Resigned

Permanent Part-Time Appointments

18. Trapp, Suzanne M. Park Ranger	GS-11	06/25/96
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Permanent Seasonal Appointment

None

Permanent Intermittent Appointment

None

Temporary/Term Appointments

19. Olson, Maria B. Park Ranger	GS-6	05/29/94
20. Cassem, Kathryn R. Park Ranger	GS-6	07/24/94
21. Moos, Kenton Biological Technician	GS-6	05/01/94 Tranferred
22. Wright, Doug Maintenance Worker	WG-5	11/30/96 Term Ended

Though not assigned to the Refuge staff, the following individuals are housed at the Visitor Center:

Friends of the Minnesota Valley

23. Haines, Ann Executive Director	05/01/92 Resigned
24. French, Nelson Acting Director	10/27/97
25. Beiseker, Sue Program Coordinator	02/01/95 Resigned



26. Grieme, Amy Communications Coordinator	09/09/96
27. Albrecht, Nancy Heritage Registry Coordinator	06/22/97
28. Hart, Telari Environmental Educator	10/15/97

Minnesota Waterfowl Association

29. Kos, Kathy Wetland Technician	11/1/95 Resigned
30. Cooper, Tom Wildlife Biologist	06/01/97

**Volunteer Program**

Volunteers contributed 23,352 hours to the refuge this past year. A total of 731 volunteers participated in the program. Highlights this year include a summer stretch program for church groups. Youth came out mornings during the summer months to help on various maintenance projects including painting, trail construction, thistle clipping, and trail trimming. One hundred and twenty seven people participated with 111 youth under the age of eighteen. A volunteer recognition event was hosted in conjunction with a volunteer job fair. Over 300 people attended this event. Lots of great community contacts were made and events were available for all ages.



Photo 8. Volunteer Kristine Wicken signs up for one of the many upcoming volunteer activities. Photo by Amy Grieme.



Photo 9. Children stayed entertained with live animals while parents checked out the volunteer opportunities. Photo by Amy Grieme.

## **Cooperative Work Programs**

### ***Twin Cities Tree Trust***

Twin Cities Tree Trust has performed numerous construction and maintenance projects for the Refuge for nearly twenty years. They are not only dependable but they do excellent work. The following is a list of projects completed this past year:

#### **Bluff Trail**

- Cleared and graded 250 feet of re-alignment.
- Cleared, graded and resurfaced 1, 500 feet after flood damage.
- Rehabilitated 75 feet of flood damaged boardwalk.
- Rehabilitated vandalized overlook on Long Meadow Lake boardwalk.

#### **Old Cedar Parking Lot**

- Removed post and rail at terminus of Bass Ponds trail.
- Installed post and rail around portion of Old Cedar Avenue parking lot.
- Rehabilitated flood damaged Long Meadow Lake boardwalk off Bass Ponds trail.

### ***Scott County Sentenced to Serve***

In cooperation with Scott County, Refuge staff identify construction and maintenance projects for individuals required to complete community service. In 1997, the following projects were completed through this program:

#### **Wilkie Unit**

- Removed 300 feet of post rail along Old County Road 18.
- Installed vehicle access control structure along Old County Road 18.
- Trimmed one mile of trail.

#### **Louisville Swamp Unit**

- Trimmed two miles of hiking trail.

### ***Career Awareness Institute***

Two participants of the Career Awareness Institute Program also worked with the biology and private lands program throughout the summer. George Lo and Amy Corrigan helped collect and organize important biological information for the Refuge and Private Lands programs.

***Youth in Natural Resources***

Lorena Giese worked for six weeks during the summer with Wildlife Biologist Vicki Sherry through the DNR's Youth in Natural Resource Program.