

Minnesota Valley National Wildlife Refuge

Bloomington, Minnesota
Fiscal Year 2000



Minnesota resident Bonnie Latham's winning entry for the 2000 Junior Duck stamp contest.

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Introduction

Minnesota Valley National Wildlife Refuge (Refuge) was established in 1976 to help 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 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, located in the Twin Cities metro area of Minnesota, is linear and extends 34 miles along the Minnesota River (Map 1). It currently encompasses approximately 11,500 acres in eight separate units. It is a green belt of large marsh areas bordered by grain terminals, highways, residential areas, office buildings, and in some places farm fields. The valley's bluffs rise about 150 feet above the floodplain and the habitats include riverine wetlands, floodplain forest, hillside forest, oak savannah and remnant native prairie.

The wetland habitat includes fens, seeps, and marshy lakes along the cottonwood-lined Minnesota River. The wetlands contain sedge meadow, cattail, and river bulrush. Water lilies, duckweed, and pondweeds thrive in open water areas.

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.

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.

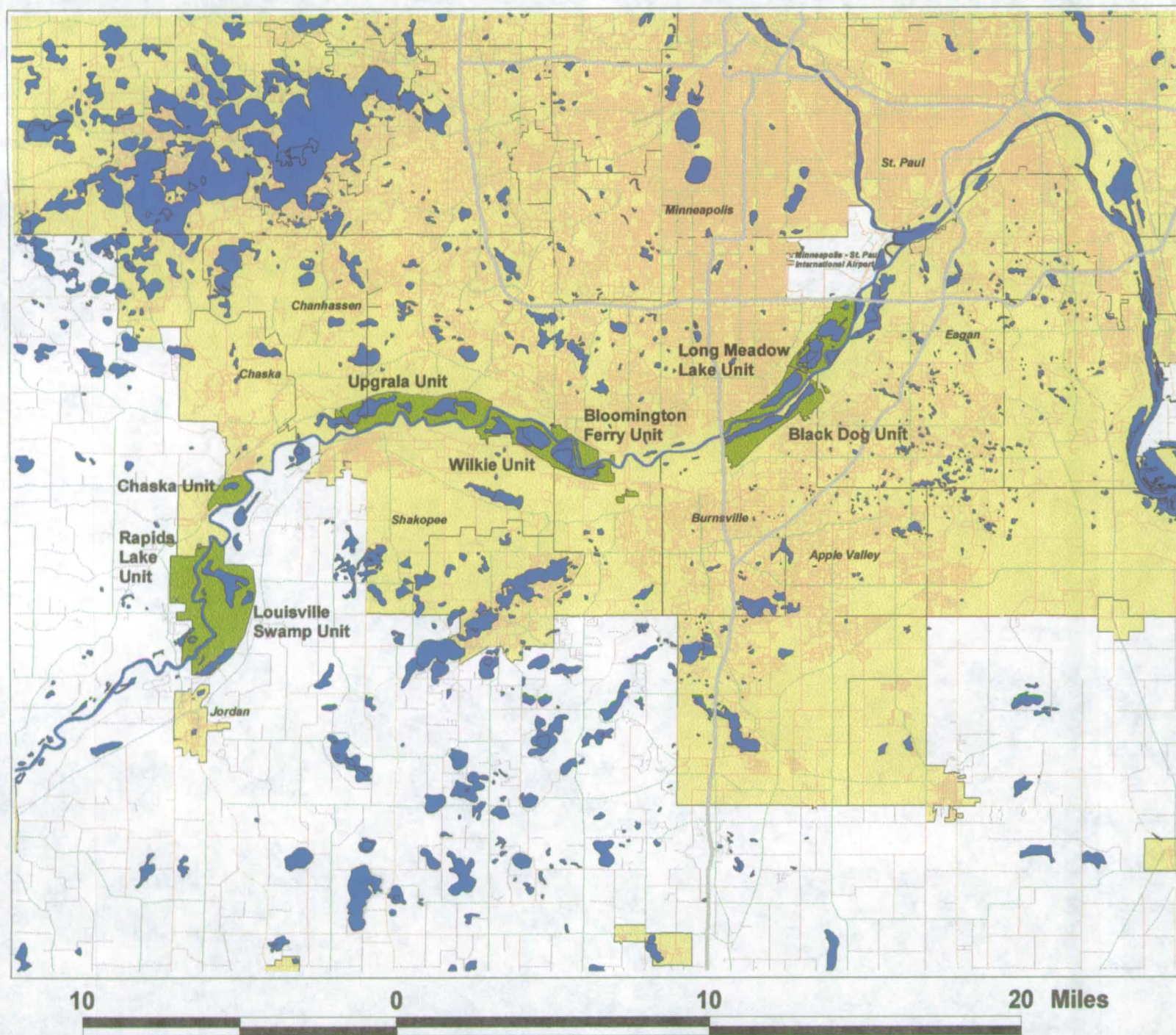
The focal point of the Refuge is the Visitor Center, which features an 8,000 sq. ft. exhibit space, a 125-seat auditorium, a 1/4 mile loop hiking trail to the river valley, two multipurpose classrooms, a bookstore, and an observation deck. Environmental education and interpretation opportunities are conducted from this facility. Wildlife dependent 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 WMD, the station manages 3,600 acres of Waterfowl Production Areas (WPA's) and over 1,830 acres of wetland, habitat, and Farmers Home Administration (FmHA) easements.

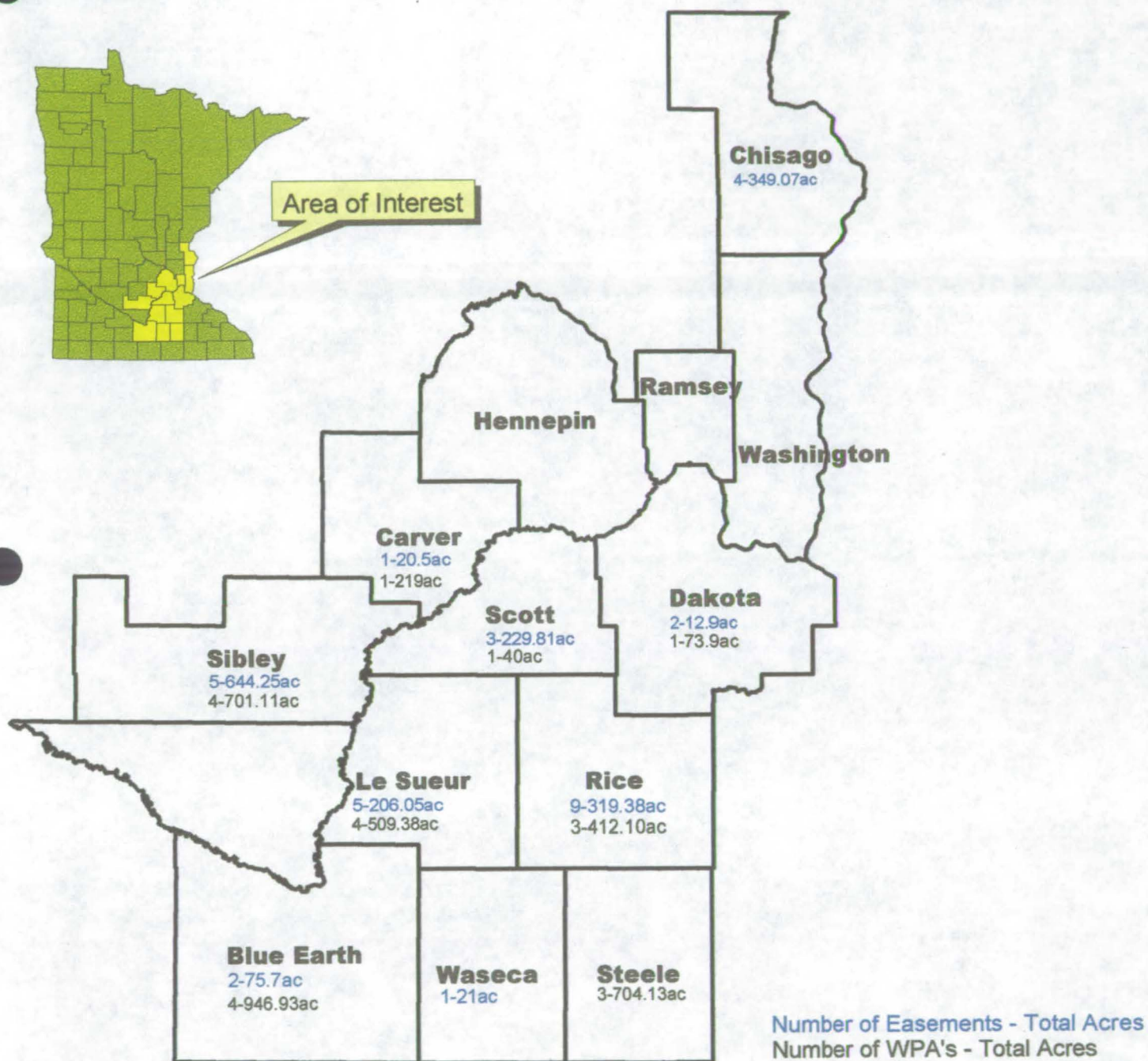
3: Minnesota Valley NWR

Outside of the metro area, the historic land use is intensive agriculture, mainly corn and soybeans. Many of the wetlands in the WMD have been drained or altered for agriculture. Remnant habitats found throughout the area include tallgrass prairie, prairie pothole, floodplain forest, upland forest, and oak savanna. As the population of the Twin Cities increases, much of this area is being converted to suburban homes, hobby farms, and recreational areas.

**Map 1: Minnesota Valley National Wildlife Refuge
Authorized Boundaries**



Map 2: Minnesota Valley National Wildlife Refuge Wetland Management District



30 0 30 Miles



Highlights

- ★ Over 200 plant specimens were collected from vegetation monitoring plots and will be added to the Refuge herbarium. (1a)
- ★ The Refuge's Resource Inventory Plan was completed during the year. This plan serves to organize, describe, and document all biological activities and programs. (1a)
- ★ A total of 300 acres of cropland were restored to native prairie on WPA's in Blue Earth, Steele, and Sibley counties. (2b)
- ★ For the first time in several years the lack of spring and summer flooding from the Minnesota River allowed for successful drawdowns and vegetation growth on Refuge pools. All 1,100 acres of managed wetlands showed a marked increase in abundance and diversity of aquatic emergents. (3a)
- ★ Refuge firefighters were kept very busy this spring with nine arson fires for a total of 500 acres on the Wilkie and Black Dog Units. (3f)
- ★ An Exotic Species Control Plan was completed during the year. In addition, biological control of leafy spurge on the Upgrala Unit has been very successful. (3g)
- ★ Refuge private lands biologists provided technical assistance to more than 200 landowners and organizations regarding wetland and prairie restoration projects. (5c)
- ★ The Refuge with the strong support of the Regional Office, finished negotiations with the Metropolitan Airports Commission (MAC) concerning the impact of future over flights on the Long Meadow Lake and Blackdog Units. In effect, MAC agreed to provide a cash settlement of \$26,090,000 in exchange for the right to overfly this portion of the Refuge. (6h)
- ★ Bonnie Latham, age 16, of Hastings became the first Minnesota youngster to win the National Junior Duck Stamp Competition with her acrylic painting of a pair of northern pintails. (7a)

Climate

The climate of the Minneapolis-St. Paul area is predominantly continental. Seasonal temperature variations are quite large and range from -30 degrees to over 100 degrees Fahrenheit. The growing season averages 166 days.

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. During the five month growing season, May through September, the normal rainfall is over 16 inches which is approximately 65 percent of the annual precipitation. Winter snowfall averages nearly 48 inches and 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.

Climate during 2000 is summarized as follows:

Temperatures (in Fahrenheit)

Average daily maximum

Actual

55.1

Normal

44.8

Average daily minimum

37.7

35.4

Highest recorded:

94° on June 8th

Lowest recorded:

-17° on December 25th

Precipitation (in inches)

Total for the year

30.47

28.36

Greatest in 24 hours

2.55 on July 9th

Snowfall (in inches)

Seasonal total, 1999-2000

68.2

56.5

Greatest in 24 hours

8.7 on January 12th

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Monitoring and Studies

1.a. Surveys and Censuses

In order to better organize Refuge biological activities during the year a Resource Inventory Plan was completed. Each procedure within the plan contains its purpose, methods, materials, maps, study area descriptions, schedule, and a database management section. In addition, all field data forms are included. This plan will help us ensure consistency in our biological program from year to year.

Significant Wildlife Occurrences

Bald eagles have nested on the Long Meadow Lake Unit since 1986. We lost the nest and female bald eagle in 1998 in a spring wind storm, and after an absence of nesting activity in 1999, we found a new nest in 2000 within a 1/4 mile of the old nest site. Finding the new nest was great, however the eagles built the nest directly over a newly opened trail on the Kelly tract. Management decided to close the trail during the nesting season, and the pair produced one eaglet. Eagles using the Wilkie Unit nest located near the great blue heron colony fledged one eaglet and at the Rapids Lake Unit, two fledglings were confirmed. In addition, we received reports that no activity was seen at the Opus Marsh or Louisville Swamp nests. Additional raptor sightings include a Cooper's hawk using the Visitor Center bird feeders as a hunting area and a golden eagle at the Rapids Lake Unit in April.

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. Three female falcons were fledged from this location in 2000.

Great blue heron production at the Wilkie Unit was an estimated 249 nestlings. This estimate is slightly lower than last year's estimate of 296 nestlings and is likely artificially low due to sampling error. Although the nestling count was completed at approximately the same time as those over the last ten years, it appeared that the herons nested earlier this spring and were wandering out on the branches. Some were flying which made it difficult to associate them with a particular nest. These signs coupled with the large evidence of whitewash that was observed even under nests with no visible birds, lead us to believe that this year's production was much higher than the data shows. Even though the actual nestling count may be low, it appears that the

species diversity of this colony continues to increase (Figure 1). In 1995, 98% of the nests were occupied by great blue herons, compared to 54% in 2000. As the percentage of nests occupied by great blue herons decreased, the percentage of nests occupied by great egrets and double-crested cormorants increased considerably. Double-crested cormorants occupied only 5% of nests in 1997, and in 2000 occupied 18% of the nests. The cormorants and a few black-crowned night herons are moving into the area closest to Blue Lake and the water control structure. Great egrets are found throughout the colony and have increased since 1995. They occupied 25% of the colony this year, compared to only 1% in 1995.

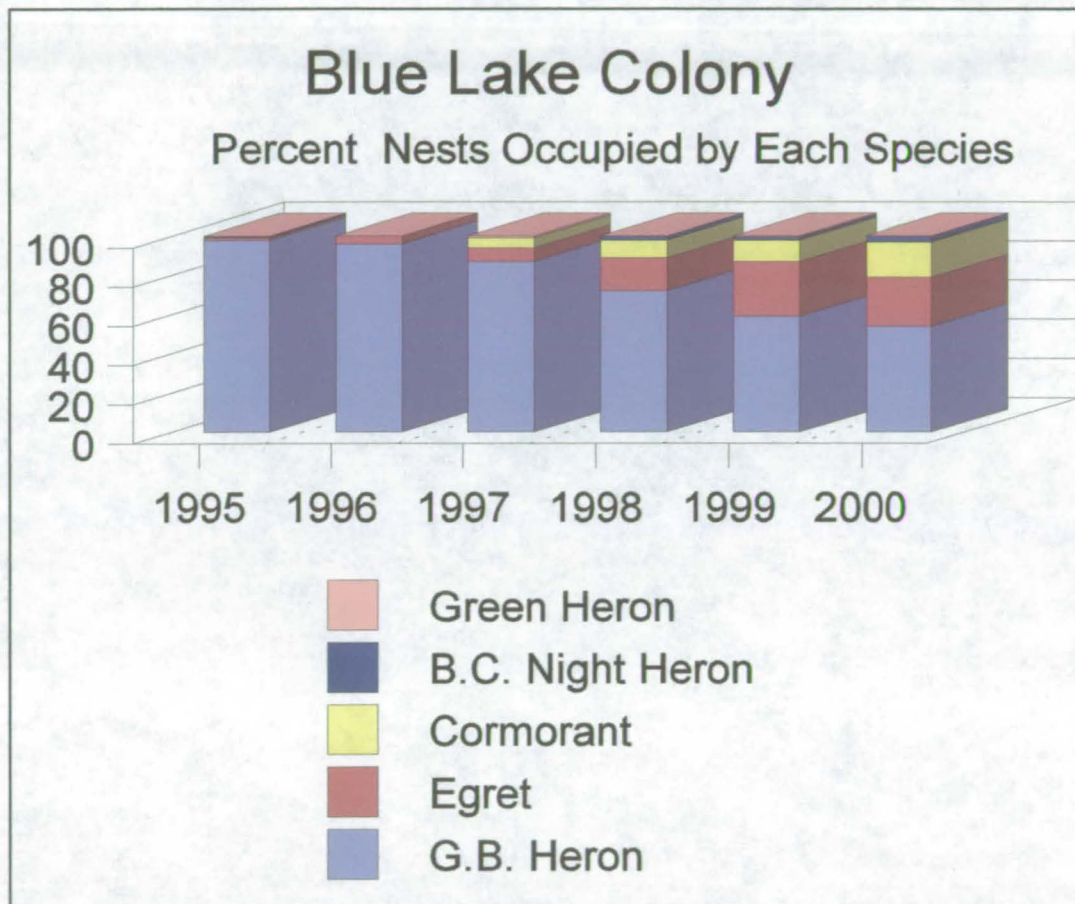


Figure 1. Percent of nests occupied by different colonial bird species, 1995-2000

It is difficult to explain why these changes are occurring. Are more cormorants and egrets moving into the area, or did a nearby colony die out, and our colony is now being used by these birds? Are there really fewer great blue herons, or have they just shifted to more inaccessible areas of the colony? We hope to have answers to these questions over the course of the next few years.

Two skilled Refuge volunteers, Ron and Cathy Huber, spent the spring and summer surveying the Rapids Lake and Louisville Swamp Units for beetles, moths and butterflies. Twenty-six species were found near the oak savanna study plots at Rapids Lake, including *Cicindela purpurea* (a tiger beetle), *Danaus plexippus* (monarch), and *Nymphalis antiopa* (mourning cloak). New county records were noted for *Cicindela purpurea*, *Cicindela scutellaris lecontei*, *Cicindela sexguttata*, and *Cicindela punctulata* (all tiger beetles). Twenty-two species were found at the Louisville Swamp Unit including *Danaus plexippus*, *Polanes hobomok* (hobomok skipper), *Phyciodes tharos* (pearl crescent butterfly), and *Polygonia comma* (comma butterfly). The volunteers will continue their surveys next year, and are currently working on a reference specimen collection for the Refuge.

Due to a mild winter season, ice conditions on Refuge lakes and marshes were unsafe. Therefore, only one lake (Blue Lake) was surveyed for muskrat activity by a field biology class from Normandale Community College. They counted 128 houses with 44% of them being considered active huts. Although it is difficult to draw any specific conclusions from this data, it appears the muskrat population in this chain of lakes is very cyclic. Muskrat populations on each lake may be tied to vegetation conditions and water.

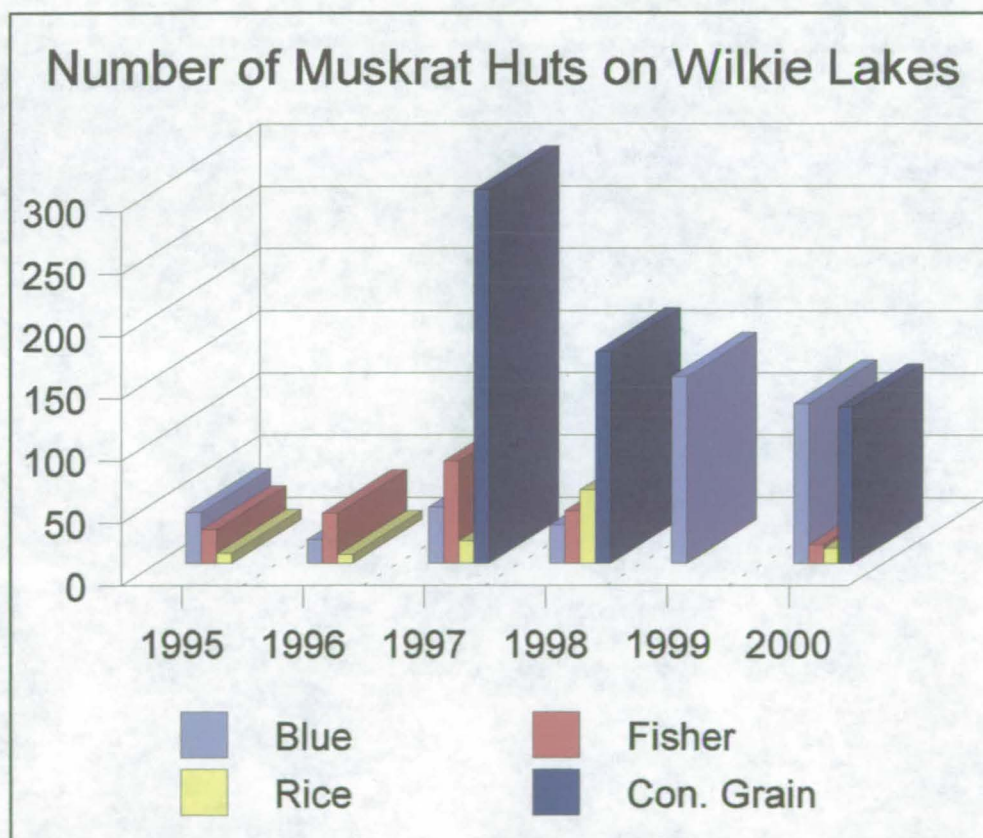


Figure 2. Muskrat hut numbers on Wilkie Unit Lakes, 1995-2000.

Waterfowl and Associated Species

The following information reflects trends observed in FY 2000.

Fall 1999

Abnormally warm temperatures throughout November caused the Fall waterfowl migration to be uneventful on the Refuge. Although we received a wide variety of species in October and November (14 species), the total numbers of birds was low. Most notable stopovers were 500 tundra swans on Fisher Lake in mid-November and over 600 wood ducks on Fisher Lake on November 3 (over 1700 mallards were also present on Fisher Lake). The tundra swans appeared in late October and were still present by November 29. The most numerous migratory species appearing in mid-October through mid-November were northern pintails, American wigeon, and northern shovelers. Most Refuge lakes were frozen by December 1.

Winter (December 1999-February 2000)

Since many of the wetlands were frozen by December 1, most of the Refuge's wintering population of waterfowl were found near the warm water of the Black Dog power plant. The peak number of waterfowl was observed in January with over 3,300 mallards, 200 Canada geese, and 140 common mergansers using the lake. In December, 1,500 mallards, 500 mergansers, and 200 ring-billed gulls were in the area.

Spring 2000

Spring was abnormal for this Refuge in that there was no flooding. This enabled staff to draw down our pools earlier in the season. The low water and exposed mudflats attracted many shorebirds to the Refuge. On April 19, over 500 were sighted on Big Rice near the hunting blind on the Upgrala Unit, and over 100 were observed on Rapids Lake including willet, and greater and lesser yellowlegs. Shorebirds were still present on May 10 with 300 using jailhouse marsh but by May 25, it appeared that the shorebirds had left the area. April was also a good month to observe white pelicans and great blue herons and great egrets feeding on the lakes. Over 1,000 pelicans were seen on Fisher Lake, 300 used Rapids Lake, and 100 were observed on Big Rice Lake. Over 100 great blue herons were feeding on Big Rice and 50 herons and 50 great egrets were seen feeding on Rapids Lake. Late April was also the time Refuge staff observed largest flocks of gadwall (over 200 on Fisher), green-winged teal (700 on Fisher), blue-winged teal and northern shovelers. The largest flocks of scaup and ring-necked ducks appeared in mid-March. Fisher Lake by far seemed to be home to most of the migrating waterfowl probably due to the success of draw downs and vegetative response the past couple of years. By late May, staff noted mostly summer nesting species including Canada geese, mallards and wood ducks.

Summer 2000

Mallards, Canada geese, wood ducks and occasionally blue-winged teal nest on the Refuge. The largest concentrations of wood ducks occurred at Chaska Lake (75 in late July) and on Long Meadow Lake (163) on August 22. For most of the summer, it was

difficult to count birds on Rice and Fisher Lake due to the dense vegetation. However, large numbers of Canada geese (311), great egrets (125) and blue-winged teal (99) were observed on Big Rice Lake on August 30 (49 white pelicans and 26 shorebirds were also counted). Late August water conditions also attracted over 500 mallards, 400 blue-winged teal and 120 scaup to Rapids Lake. In addition 255 double-crested cormorants and 57 white pelicans inhabited Black Dog Lake on August 22.

Habitat Monitoring

At the present time, the Refuge has an extensive monitoring program on two oak savanna restoration sites. In the Louisville Swamp Unit, the Refuge is monitoring vegetation and wildlife response to a 250-acre restoration unit. Hydroaxing and fire are the two main management tools. On the Rapids Lake Unit, a 200-acre site is being restored; predominantly with fire and selective cedar and brush removal. Baseline data has been collected on the Rapids Lake plots and the plots are scheduled for burning in 2001. In addition to postburn monitoring plots in the Rapids Lake oak savanna, baseline plots in floodplain forest and prairie restoration sites were added this year. The plots were monitored using the RX-80 fire (vegetation) monitoring technique developed by the National Park Service. Over 200 plant specimens were collected from these sites, which will be added to the Refuge herbarium. These plots will enable Refuge staff to evaluate the success of our habitat restoration and fire management programs.



Photo 1. Career Awareness employee Amy Heberlein monitoring a vegetation plot on the Rapids Lake Unit. Photo by V. Sherry.

1.b. Studies and Investigations

Nothing to report

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Habitat Restoration

2.a. Wetland Restoration

On-Refuge

Wetland restoration efforts on Refuge lands focused primarily on Waterfowl Production Areas. These efforts resulted in 54 wetlands basin restored totaling 120 wetland acres. Highlights of this year's work included 1) restoration of 14 basins for 20 acres at High Island WPA in Sibley County; 2) restoration of 14 wetlands totaling 30 acres at Dodge Creek WPA in Steele County; 3) restoration of ten basins for 20 acres at Howard Family WPA in Blue Earth County; 4) restoration of ten basins encompassing 30 acres at Hahn Lake WPA in Sibley County; and 5) restoration of six basins totaling 20 acres at Delehanty WPA in LeSueur County. We are especially grateful to the many partners whom provided the funds and resources to restore the aforementioned WPA tracts. Partners that provided critical funds for wetland restoration include Minnesota Waterfowl Association, Ducks Unlimited, Pheasants Forever, Green Isle Sportsman Club, and Minnesota Pheasants.



Photo 2. Restoration of palustrine emergent semipermanent wetland at Delehanty WPA in Le Sueur County. Photo by M. Mallin.

Off-Refuge

Through the Partners for Fish and Wildlife program (PFW), off-refuge restoration work took place on state, county, and private property. The product of these restoration efforts yielded 57 wetlands totaling 308.5 wetland acres. These projects were aided by partnerships with more than 40 different conservation clubs, non-governmental organizations, private landowners, the Natural Resource Conservation Service (NRCS), private corporations, and various soil and water conservation districts (SWCD). These collaborations continue to be the impetus that drives the PFW program. Dollars from these partners have been matched with several different grant sources including Challenge Cost Share, Clean Water Action Plan, Conservation Partner, Prairie Pothole Joint Venture, Metropolitan Council (MET), and North American Wetland Conservation Act Grants (NAWCA). These contributed funds, matched with grant dollars, provided approximately 40% of the total funds needed to restore these wetlands.

Highlights of the PFW program on private lands in 2000 include 1) restoration of a 30-acre prairie pothole complex on the Blakesly Wetland Reserve Program (WRP) property in Blue Earth County; 2) restoration of a 30-acre wetland complex with four basins on the Anderson property located next to Redhead WPA in Sibley County; 3) restoration of a 30-acre type IV basin located in the Cannon River Watershed in Rice County; 4) restoration of an 18-acre basin enrolled in the Conservation Reserve Enhancement Program (CREP) on the Koch site in Hennepin County; 5) restoration of a 20-acre basin enrolled in the Conservation Reserve Program (CRP) on the Mueller tract in Sibley County; 6) restoration of a 24-acre basin on the Bartz tract in Carver County, and 7) restoration of an 18-acre basin with fish ladders on the Cihak habitat easement.



Photo 3. Rice county PFW wetland restoration project site. Photo by M. Malling.

In addition, Refuge staff continued to focus on projects located within Sand and Bevens Creek watersheds in the Lower Minnesota River Watershed. Sand Creek flows directly into the Louisville Swamp Unit and the Bevens Creek watershed flows into the Minnesota River just upstream of the Rapids Lake Unit. These watersheds have been designated as critical by Refuge staff and been the focus of several NAWCA and Metropolitan Council grants. To date, Refuge staff and partners have restored 267 wetlands for more than 839 acres; 39 upland sites to native grass totaling more than 955 acres; and 23 riparian corridors via bioengineering techniques totaling more than 20,000 linear feet within these two watersheds. The Refuge has also purchased ten tracts in fee title or easement through the Small Wetland Acquisition Program within these watersheds totalling 1,000 acres of habitat.



Photo 4. Sheet pile structure being installed at Cihak habitat easement. Photo by M. Malling.

2.b. Upland Restoration

On-Refuge

Partnerships with many different clubs and non-governmental organizations contributed more than \$80,000 in cash and in-kind services for native prairie restoration. A total of 300 acres of cropland were restored to prairie on WPAs located in Blue Earth, Steele, and Sibley counties. Seeding was accomplished by Refuge staff and sportsman club volunteers. Native seed composition included big bluestem, Canada wild rye, Indian grass, switch grass, little bluestem, side oats grama, blue-joint, and prairie dropseed. The aforementioned species were seeded in conjunction with more than 30 species of forbs including compass plant, bergamot, wild garlic, butterfly weed, vervain, and prairie blazing star. Hahn Lake WPA in Sibley County was our showcase this year. The 137-acre WPA consists of 110 acres of restored prairie and eight restored wetlands totaling 37 acres, thus providing important migration, breeding, nesting, and feeding habitat for waterfowl, shorebirds, and other wildlife. In addition, this complex provides important water quality benefits to High Island Creek of the Lower Minnesota River Watershed.



Photo 5. Native grass restoration at Blakesly Wetland Reserve Program Easement in Blue Earth County. Photo by M. Malling.

Off-Refuge

Refuge staff, through the PFW program, provided seed and technical assistance to more than 30 private landowners. Over 570 acres of native grasses were restored on private land in Steele, Scott, Rice, Blue Earth, Hennepin, Goodhue, LeSueur, and Sibley counties. Planting was done by utilizing a native grass drill for fluffy grasses while broadcasting more than 30 species of forbs. Seeding was accomplished by utilizing a host of partners including SWCD staff, private landowners, Refuge staff, and private vendors. We are most thankful to the many partners who provided in excess of \$70,000 in cash and in-kind services for prairie restoration on private land tracts. Showcase properties this year included the Anderson parcel in Sibley County and the

Blakesly tract in Blue Earth County. These tracts provide important water quality benefits, critical wildlife habitat for a host of species, and strengthen and foster new partnerships with the local community.



Photo 6. Prairie restoration at Hahn Lake WPA in Sibley County. Photo by M. Malling.

2.c. Deepwater/Riverine Restoration

Off-Refuge

Riparian Restoration

Riparian work focused on four sites totaling 12,200 linear feet. These privately-owned, eroded stream banks are located along various riparian corridors including Bevens Creek, Sand Creek, and the Cannon River. They were restored via bioengineering practices including resloping, reshaping, cedar tree revetments, willow fascines, willow stakes, planting native shrubs to revegetate riparian areas, native grass seeding, and installing fence exclosures. Fencing projects were designed to restrict cattle crossing through the riparian corridors which improves the water quality. Team work and partnerships were essential for the completion of these stream bank stabilization projects. A strong cooperative partnership with local SWCDs, NRCS, watershed districts, and private landowners was instrumental in accomplishing these projects. Many of the projects were accomplished through cooperative agreements between Refuge and SWCD offices. Funds were generated through grants and contributed funds from local conservation clubs. To date, the Refuge and its partners have completed 26 riparian restorations totaling over 175 acres in the 13-county WMD.

3

Habitat Management

3.a. Water Level Management

For the first time in several years the lack of spring and summer flooding from the Minnesota River allowed for successful drawdowns and vegetation growth on refuge pools. All 1,100 acres of managed wetlands showed a marked increase in abundance and diversity of aquatic emergents. The following is a summary of the activities that were completed:

- **Fisher Lake:** A complete summer drawdown was accomplished for the first time since a new control structure was installed and an outlet channel constructed. Excellent interspersions of emergent plants and open water resulted, including wild rice, where open water has prevailed for several years. Despite dry conditions, reflooding was accomplished by redirecting water from Blue Lake, through a new control structure between Blue Lake and Fisher Lake.
- **Rice Lake:** Beaver activity prevented a complete drawdown, however, a partial summer drawdown was accomplished and aquatic emergents responded very well. More wild rice was seen on this lake than in the past several years. Other emergents increased interspersions and provided some of the best waterfowl habitat this lake has ever had.
- **Blue Lake:** Water levels were dropped in the spring on Blue Lake in order to facilitate the construction of a new water control structure which was completed by the Metropolitan Waste Water Commission consistent with a 1999 right of way permit. Low, steady water levels allowed wild rice to dominate where monotypical stands of river bulrush had once thrived. This provided the best waterfowl habitat in over ten years on Blue Lake. The new control structure replaces an old, degraded structure that provided few opportunities for effective management.
- **Rapids Lake:** A partial summer drawdown was conducted on Rapids Lake. Moist soil plants flourished on exposed mudflats and provided one of the best waterfowl food sources on the refuge. Interspersions were enhanced with the growth of emergents where little has grown since this wetland was restored. A new staff gauge was installed.
- **Big Rice Lake:** The planning process for exotic fish control was started in cooperation with the Minnesota Valley Hunt Club. The club is a partner in the management of Big Rice Lake since this wetland is co-owned.



Photo 7. Structure installed at Blue Lake. Photo by T. Schreiner.

3.b. Moist Soil Management

Low water levels as a result of dry weather conditions and refuge pool drawdowns prevented pumping into moist soil units. Chaska Lake moist soil unit was mowed in August in order to set-back sapling growth, reduce rank vegetation and provide substrate for invertebrates. Flooding was not possible. No other moist soil management was conducted during the year.

3.c. Graze/Mow/Hay

Nothing to report

3.d. Farming

Dodge Center Creek and Howard Farm WPA's were planted with soybeans through cooperative farming agreements in preparation for seeding in 2002.

3.e. Forest Management

A total of 38 acres of former agricultural land was planted to native tree species during April and May. The fields were prepared for planting by burning followed with a treatment of the full spectrum herbicide, Roundup.

Within the Wilkie Unit, volunteers planted 25 acres of swamp white and bur oak seedlings within the floodplain. Seedlings were planted 25 feet apart in one-acre modules. The modules were spaced 400 feet apart. The goal is to add diversity to the forest by planting species that do not presently occur, but were present historically. The areas around the modules would then be allowed to revert to forest through natural vegetative succession.



Photo 8. Volunteers planting trees at Rapids Lake.
Photo by K. Fitzgerald.

At Rapids Lake, a nine-acre upland field was planted using a variety of hardwood species and a natural gas pipeline right-of-way (four acres) were planted to hardwood species in rows at 12-foot spacing. Finally, four acres were planted within a natural gas pipeline right-of-way that transects the Louisville Swamp Unit.

Beginning in 2002, oak seedlings planted on the Refuge will be grown from acorns gathered within the Refuge or the same geographical area to ensure genetic integrity is maintained. A recently discovered technique in growing oak seedlings, Root Propagation Method (RPM), will be used to the extent possible. Seedlings are grown in suspended containers and exposed to the air, called air pruning. This new technique results in a large robust fibrous roots system which increases initial growth to the extent that in Missouri, RPM oak trees are producing acorns within 4-5 years after planting. If this type of seedling shows similar growth at this latitude, it will allow the relatively slow growing oak species to compete with the more rapid growing species such as silver maple, boxelder, green ash, willow, and cottonwood.

3.f. Fire Management

Favorable burning conditions combined with a dry spring resulted in a total of 17 burns covering over 1,700 acres throughout the Refuge. Thirteen of the fires were prescribed burns and nine were arson fires. Refuge staff also assisted the Minnesota Department of Natural Resources (MnDNR) with a 400-acre burn of Carver Rapids State Park. Prescribed burns that were

completed included all of the tall grass prairie and seeded natives of the Rapids Lake Unit and the oak savanna restoration sections of the Louisville Swamp Unit. This burn was one of the most successful burns ever conducted in this degraded oak savanna.

Arson Fires

Refuge firefighters were kept very busy this spring with nine arson fires for a total of 700 acres on the Wilkie and Black Dog Units. The Refuge fire crew was able to respond to all the fires and also spent several days on mopup. Local volunteer and paid fire departments as well as the Mn DNR fire crew responded many times to refuge arson fires. The Continental Grain fire in the Wilkie Unit was an arson fire lit in the late evening. The fire raged with the help of 70 mph winds that pushed it rapidly through cattails and phragmites. When the Refuge fire crew arrived at 11pm, over 50 local fire department trucks had gathered in the parking lot of the grain elevator. The main objective of control was to prevent the fire from jumping the grain elevator parking lot. For the next week, FWS and Mn DNR crews completed mopup on the fire. The response from native prairie species in the upland portion of the fire was spectacular. Cooperative efforts between Refuge officers, city, county and Federal law enforcement agencies led to the apprehension of two suspects.

Interagency Wildfire

Four Refuge employees participated in interagency wildfire suppression on six western wildfires. Positions held included firefighter type II, security officer I and security manager. Tom Kerr was a security officer on the Thompson Flat Complex in Montana for two weeks. Deb Gaunitz was a security officer on the Clear Creek fire in Idaho. Chris Kane served as a security officer on the Kate's Basin Fire in Wyoming and as security manager on the Trail Creek Fire in Idaho. Refuge Officers gained valuable experience on the security details, dealing with drugs, warrants, weapons violations, prostitution, theft, and drunk and disorderly. During the two-week detail on the Thompson Flat Complex in Montana, over 44 crew members were removed from camp for various violations and seven of the crew members were arrested. Tom Marcouiller served on two fire crews, one on the Blind Fire in Wyoming and also on the Crooked Fire in Idaho.

3.g. Pest Plant Control

During the year, the Refuge developed an exotic species control plan which outlines the overall strategy for pest plant control on the Refuge. The plan lays out priorities for control areas, techniques, and species. The plan will also be an index of available control techniques for each exotic species on the Refuge. The top priority species for control will be purple loosestrife and leafy spurge, which threaten many of the Refuge's wetlands and uplands.. While Refuge staff time will concentrate on these two species, the top habitat management priority for the Refuge volunteer program will be the control of buckthorn. Buckthorn control will start in the Long Meadow Lake Unit near the Visitor Center and work outwards from there.

In a continuing effort to control exotic plant species, we have expanded the use of biological control agents. This year we collected over 115,000 beetles from the leafy spurge site at the

Upgrala Unit and distributed them to other Refuge sites infested with leafy spurge. The Upgrala site is one of the most successful field insectaries in the State, and we hope to continue sampling from the site in the future to expand our biological control agents to other units of the Refuge.

We continue to monitor the effectiveness of purple loosestrife beetles and have seen little positive results. After consulting with State biological control experts, we obtained 2,000 beetles from a nearby field insectary in order to investigate whether having beetles at a different life stage will help us develop a more consistent population. We will evaluate the plots next year, and continue to explore this option of biological control.

This was the first year that the Refuge released insects for the control of spotted knapweed. Approximately 400 insects were released near Long Meadow Lake at Old Cedar Avenue. We will continue to survey the Refuge for additional outbreaks of spotted knapweed.



Photo 9. Biological Technician Kane releasing *Aphthona* spp. beetles at the Rapids Lake Unit. Photo by V. Sherry.

4

Fish and Wildlife Management

4.a. Bird Banding

In FY2000, the Refuge attempted to improve our wood duck banding program by involving volunteers. New traps were built and a volunteer was in charge of keeping the area baited. After unsuccessful attempts at the Chaska Lake site, the trap was moved to Continental Grain in late August, and we captured, banded and released ten wood ducks.

4b. Disease monitoring and treatment

On February 29, 2000 at 2:30 p.m. Refuge staff reported dead fish within and around the Skimmer and Hogback Ponds near the Bass Ponds Area. Large quantities of duck feathers, carcasses of 103 carp, 20 sunfish, 5 minnows and 1 dead frog were documented. All appeared to be dead for at least one week. No spills were reported within the drainage area to the area prior to the event. Officials from Cypress Semiconductor, City of Bloomington, MPCA, MnDNR and the Twin Cities Ecological Field Office were contacted. Water samples were tested for ph, temperature and chlorides and everything was found to be normal. No necropsies were performed due to the poor condition of the carcasses. No additional carcasses were found and no conclusive evidence was found to determine the cause of death. Winter kill is possible, but not probable because the pond is deep had open water during much of the winter.

4.c. Reintroductions

Nothing to report

4.d. Nest Structures

A component of the private lands program is the distribution of wood duck and bluebird boxes to private land owners. An estimated 70 wood duck boxes, 40 bluebird boxes, and 25 nest cylinders were erected on private and public lands. Participating landowners also receive literature on current practices involving placement and care of these boxes. The boxes themselves are constructed by local Boy Scout troops with supplies being provided by the Refuge. Refuge staff and volunteers, Minnesota Waterfowl Association and the Boy Scouts have worked together to

construct 100 mallard nesting cylinders to be placed on WPA and other private land restorations.

4e. Pest Animal Control

Jim Cooper, University of Minnesota, removed 16 adult and 21 young Canada geese from the Long Meadow Lake Unit as part of the 2000 Twin Cities Metro Area Goose Removal Program. In addition, the control group also located 32 nests and destroyed 158 eggs on the unit. Geese are removed from the Long Meadow Lake area due to the potential hazards to aircraft from the Minneapolis-Saint Paul International Airport.

The Refuge continued to manage its population of whitetail deer in cooperation with the MnDNR in order to maintain the recommended figure of 15-25 animals per square mile. With the assistance of state and local law enforcement officers, sharpshooting is used within the urban portion of the Refuge where sport hunting cannot be safely conducted. Refuge officers removed 45 animals from the Bloomington and Burnsville sides of the Minnesota River.

5

Coordination Activities

5a. Interagency Coordination

Due to the urban nature of the Refuge, the 13-county Wetland Management District and a large number of partnerships and cooperative management activities, Refuge staff spend a large amount of time coordinating with other agencies and offices.

Refuge staff work with Soil and Water Conservation District offices through the Partners for Fish and Wildlife Program. These contacts include assistance for wetland restoration and delivery of state easement programs. Refuge staff also work closely with the Natural Resources Conservation Service (NRCS) for delivery of the CP-23 option in the Conservation Reserve Program. Refuge staff also coordinate with the local and state NRCS offices for Wetland Reserve Program assistance. Cooperative funding of projects is a useful tool to help landowners complete projects that may not have enough state cost share.

Through the WPA acquisition program, Refuge staff work closely with the Litchfield Wetlands Acquisition Office to purchase WPAs and Easements. Refuge staff attend county commissioner meetings and public meetings to address concerns resulting from the acquisitions.

Refuge staff served on a committee headed by the Minnesota Pollution Control Agency to develop guidelines for the administration of the Environmental Protection Agency funded non-point source pollutant reduction program. Funding for this program will assist in meeting goals for Restoration of the Minnesota River Watershed Initiative.

Planning for the restoration of an additional 45 acres of former agricultural land to forests continued with the MnDNR. The acreage to be planted in 2001 is within the south portion of the Louisville Swamp Unit. A conservation grant for approximately \$10,000 was awarded to the local chapter of the Wild Turkey Federation which will be utilized to buy materials for the planting.

Refuge staff worked cooperatively with officials from the Metropolitan Council Environmental Services Division concerning conditions of a ROW permit allowing the construction of an outfall pipe into Blue Lake issued in 1999. The conditions were to replace or rehabilitate two water control structures on Blue Lake. Work on both structures continues as of this writing.

Efforts are being initiated and implemented to enhance partnerships with local conservation and service organizations encouraging them to do supportive maintenance on WPAs regionally. The Adopt-a-WPA program was initiated during 2000 and we are proud to have three local clubs in Carver, Sibley, and Blue Earth Counties helping us manage our WPA tracts.

From September through May, the following groups used the Visitor Center to host monthly evening meetings: Native Plant Society, Minnesota Nature Photography Club, and the Minnesota River Valley Audubon Club. The Refuge provides a liaison for each group, which average 60-90 visitors each meeting. Refuge staff also continue to work closely with the Friends of the Minnesota Valley on a variety of issues.

A demonstration project aimed at assessing the most effective bank stabilization technique was completed on the river bank near the Lyndale Outlet of Black Dog Lake. The project was funded by the Lower Minnesota Watershed District.



Photo 10. Bank stabilization on the Black Dog Unit.
Photo by T. Schreiner.

Minnegasco conducted emergency repairs on their natural gas line crossing the river. They discovered material anchoring the line had been undermined by the river and the pipe was in danger of failing from lack of support. A portion of the Black Dog Unit was used as a mobilization and material storage area. A Special Use Permit with conditions was issued to ensure Refuge land was restored to native vegetation once the project was complete.

5.b. Tribal Coordination

Eastern Red Cedar removal

This past summer, an active partnership was formed with Brotherhood Rally of All Veterans Organization (BRAVO), South Dakota Chapter. The Dakotah/Lakotah founded chapter was interested in building and hosting a Pow Wow in Pipestone. In conversations with the BRAVO Vice-President, Myron Williams, we came across the perfect solution to both of our situations. The Refuge needed eastern red cedar trees removed in the oak savannah restoration area of the Rapids Lake Unit and the BRAVO group needed cedar to build the arbor. BRAVO veterans volunteered their time, money, and personal vehicles for four work trips to cut trees, limb, and haul to Pipestone. This first annual Pow Wow was a great event, and everyone was honored through the partnerships that were formed.



Photo 11. Pipestone Pow Wow attendees.
Photo by J. Ritch.

Firewood Removal at Louisville Swamp Unit

Four years ago, the Scott County sentence to serve crew cut and stacked over 30 cords of wood from undesirable trees in the oak savannah restoration area within the Louisville Swamp Unit. The wood needed to be removed as it was hampering prescribed burns in the unit. The Refuge issued special use permits to Native American groups to remove the fuel free of charge. The Native American groups were designated community support groups that were utilizing the fuel for the benefit of the community. Prairie Island Reservation band members removed four cords while the Sisseton/Wahpeton group removed 14 cords for the Pipestone Pow Wow inipis. BRAVO served as liason for both service groups.

5.c. Private Land Activities

Refuge private lands biologists also provided technical assistance to more than 200 landowners and organizations regarding wetland and prairie restoration projects. More than 60 private

landowners signed wildlife management agreements resulting in the restoration of 900 acres of wildlife habitat. These staff provided assistance to the station's environmental education program by attending public meetings, authoring more than ten grant applications, presenting topics to various groups, and assisting organizations in the restoration of the Minnesota River Watershed. This past year, Refuge staff and Minnesota Waterfowl Association biologists, gave 10 presentations to more than 600 children and adults regarding wetlands and prairie natural history. In addition, staff attended more than 20 club meetings and banquets. The staff plays an active role working with other agencies including participating on screening committees for the State's Reinvest-In-Minnesota and Farm Service Agency's Conservation Contract easement program, assisting with SWCD's wetland restoration program, delineating lands for FWS fee-title acquisition and easement programs, and delineating lands for Wetland Reserve Program (WRP) easements in cooperation with NRCS.

We are honored to have three Minnesota Waterfowl Association (MWA) biologists on staff. Two of the biologists, Katy Fitzgerald and Jim Labarre, are dedicated full-time to the US Department of Agriculture Wetland Reserve Program. Important components of their job include identifying new tracts for easement purchase, authoring and implementing the plan of operations for each tract, restoration design and construction, landowner meetings, and posting boundaries. During FY 2000, staff members worked on more than 35 WRP sites within our WMD. Tom Cooper continues to be an important member of the team and provides technical assistance through the PFW program to landowners in five of the thirteen counties within the WMD. He also attends club meetings and banquets, gives presentations to school groups, and is currently working with other staff members to update our geographical information system.



Photo 12. Minnesota Waterfowl Association biologists pictured from left to right, Jim Labarre, Tom Cooper, and Katy Fitzgerald. Photo by M. Mallings.

Refuge private lands biologists continue to work cooperatively with MnDNR, SWCD, NRCS, USDA, and local watershed districts in restoring, protecting, and enhancing our natural resources. The Refuge has established seven cooperative agreements with SWCD offices to restore prairie and wetland habitat in our 13-county WMD. More than 100 acres of wetlands, prairie, and riparian corridors were restored through these agreements during FY 2000.

6

Resource Protection

6.a. Law Enforcement

Law enforcement issues continue to be a challenge for Refuge staff. Law enforcement personnel documented a total of 318 incidents. The majority of the 97 citations issued were for hunting, fishing, snowmobiles, and mountain bike violations. Fishing violations decreased dramatically and hopefully this trend will continue. The Refuge purchased a new Polaris snowmobile to help address illegal snowmobile use.

Vehicle break-ins continue to be a major concern for law enforcement personnel. Many parking areas within the Refuge were affected. More time will be dedicated to catching these individuals in 2001.

Arson was also a major issue during the Spring of 2000. Several fires were set both within the Black Dog and Wilkie Units which blackened over 500 acres. Suspects have been identified and the investigation is ongoing.

6.b Permits and Economic Use Management

The Refuge issued a total of 24 special use permits that covered a variety of activities that were conducted on the Refuge. Activities allowed under the permits included trapping, filming of a segment for the local television show Minnesota Bound, wildlife surveys, seed collection and disabled hunting. A two-dollar fee was charged for the eight trapping permits and the remainder were issued at no charge to the permittee.

Right-of-way permits were granted to the City of Arden Hills to complete a hiking trail within the Round Lake Unit, the City of Shafer, Minnesota for the installation of utilities across a FmHA easements and to LeSueur County to replace a wooden bridge with a concrete culvert. Compatibility reviews were also performed on three additional right-of-way applications.

Cooperative farming agreements were to assist us in the conversion of newly purchased WPA's from cropland to native grasses. There were two cooperative farming agreements issued in FY2000 which allowed for planting of soybeans on Howard Farm WPA (185 Acres) and Dodge Center Creek WPA (120 Acres). These fields are scheduled to be seeded with native grasses in the spring of 2001. Due to an existing ag covenant on Perbix WPA, an agreement is in place that allows for cutting of a 15-acre alfalfa field. The covenant expires in 2006. One additional cooperative farming agreement on the Refuge allowed for the planting of 67 acres of soybeans on the Rapids Lake Unit. The agreement is being used to allow for weed control on the parcel until the area can be seeded with native grasses.

6.c Contaminant Investigations

The Minnesota Pollution Control Agency (MPCA) gathered soil and ground water samples near an Environmental Protection Agency superfund site called the Old Freeway Dump which lies adjacent to the Black Dog Unit. The intent was to monitor for contaminants leaching in to the Refuge through the groundwater. Samples that were taken from the soil and shallow wells were analyzed for the presence of heavy metals of concern including boron. Results indicated levels four to five times above background. The impact of these elevated results is yet unknown. In addition, the movement of contaminants through groundwater is not completely understood as well. Some of this movement is likely affected by pumping operations that take place in the Kramer Quarry, which is located northwest of the Old Freeway dump. In light of this, Refuge staff has recommended continued testing of this area.

The Department of the Army completed and presented the results of a study to assess the potential effects of chemicals originating from the Twin Cities Army Ammunitions Plant (TCCAP) on amphibians in Round Lake. It was concluded that any substance from TCCAP related activities have not adversely impacted amphibians in the lake.

6.d Contaminant Cleanup

Nothing to report

6.e Water Rights Management

Nothing to report

6.f Cultural Resource Management

As an important part of the Refuge's CCP process, the Service contracted for a cultural resources study of Minnesota Valley National Wildlife Refuge and associated areas. The product of this study is a report entitled "*Cultural Resources Management Plan for Cultural Resources within the Minnesota Valley National Wildlife Refuge*" prepared by Anthony Godfrey, Ph.D. of the U.S.

West Research, Inc. Salt Lake City, Utah. This plan builds upon the previous work that has been accomplished in this area plus offers significant documentation and guidance concerning the management of these resources.

6.g. Land Acquisition Support

In May 2000, the Refuge acquired 33.6 acres from the City of Bloomington. This tract was formerly known as the Pahl tract and is located in the southwest portion of the Long Meadow Lake Unit. Acquisition of this tract will allow MnDNR, in cooperation with the Refuge, to identify a corridor for the Minnesota Valley State Trail.

During the year, three tracts totaling 340 acres were acquired using Migratory Bird dollars and are managed as WPAs. These tracts and their locations are as follows:

<u>Tract Name</u>	<u>Unit Name</u>	<u>Acres</u>	<u>County</u>
Malecha	Malecha	152 acres	Rice
Lim	Willow Creek	80 acres	Blue Earth
Anderson	Anderson	90 acres	LeSueur

No easements were acquired in FY2000.

6.h. Threats and Conflicts

A variety of new and on-going developments in or near the Lower Minnesota River Valley potentially threaten the biological and aesthetic values of the Refuge. In light of this, Refuge staff continually monitor these projects and represent Refuge interests where ever needed. These projects are summarized below.

Scott County Highway 27

Refuge staff served on a committee formed by Scott County officials to assist in the selection for an acceptable alternative alignment for the extension of Scott County 27 to Trunk Highway 13. The committee was formed after the MnDNR denied a permit request to extend the highway through the Savage Fen Wetland Complex. A grant from the Legislative Commission on Minnesota Resources was awarded to the City of Savage in 1999 to conduct the study.

A design submitted by the MnDNR for an interpretive kiosk for the Savage Fen Wetland Complex was reviewed by staff. The kiosk will be installed at the terminus of a trail proposed to be constructed on Refuge and MnDNR land within the wetland complex.

Alternative Urban Areawide Review

The City of Bloomington initiated a process known as an Alternative Urban Areawide Review for its Airport South District, which lies adjacent to the Long Meadow Lake Unit. The purpose of this process was to plan for increased development while at the same time, minimize the affects of this development upon downstream or adjacent natural resources. At a minimum, Refuge staff participation in this process has increased the sensitivity of city planners and associated consultants to Refuge concerns and issues.

Bloomington Storm Water Issues

Refuge staff met with City of Bloomington Public Works staff on several occasions to discuss the on-going need to improve the quality of storm water run-off into Refuge water bodies. Although water entering the Refuge is still a long way from meeting acceptable standards, the City agreed to install solid waste screens in the lines to Hogback Pond and Pond C. Work began on this project in early September and should solve the long standing problem of visible solid waste on the shorelines the receiving water bodies. Improvements to City lakes that serve as detention ponds have also been completed and should improve water quality to some extent. In addition, Refuge staff continued to participate in the planning for the redevelopment of the Airport South sub-watershed which outlets into the Long Meadow Lake Unit.

Bluff Erosion

Refuge staff met with officials from the cities of Burnsville, Bloomington, MnDNR, the Lower Minnesota Watershed District, and Federal Emergency Management Administration regarding a July super storm that deposited 10-12 inches of rainfall within a 4-5 hour period within the river valley and adjacent areas. A major landslide occurred in Burnsville on to the Refuge when a storm water retention pond dike failed. Nearly 4,000 yards of glacial till filled Refuge wetlands and a trout stream. In addition, a trail crossing, culvert, and 20 feet of bank washed into the Minnesota River near Lyndale Avenue in the City of Bloomington. Restoration planning continues with officials from both cities and all agencies.

Amphitheaters

Refuge staff attended meetings and noise testing demonstrations regarding two amphitheater proposals adjacent to the Black Dog and Louisville Swamp Units. The proposers of the amphitheater near the Louisville Swamp Unit are in the process of preparing an environmental impact statement as required by officials from Scott County. The Burnsville amphitheater was approved by the Burnsville City Council without having to do an EIS, but lawsuits filed by the City of Bloomington and others are pending and will delay construction indefinitely. Refuge staff provided comments on both projects requesting the projects not be approved based on the adverse impacts to Refuge visitors and wildlife.

Flying Cloud Airport Expansion

The Refuge commented on the draft environmental impact statement that proposed to expand the Flying Cloud Airport in Eden Prairie. As initially proposed, it appeared that this expansion would affect a portion of the Upgrala Unit by projecting significant amounts of noise into the Valley.

Upon the development of additional information, it now appears that no significant change will occur in the amount of noise entering Refuge lands.

Light Rail

Public meetings were held in Bloomington regarding the possibility of constructing a light rail line from the Mall of America to Apple Valley, Minnesota. Although in the earliest stages of planning, the alignment would cross the Long Meadow Lake Unit in the area of the Cedar Avenue Bridge and would possibly require an additional right-of-way across Refuge lands.

Mosquito Control

Refuge staff met with officials from the Metropolitan Mosquito Control Commission (MMCD) during early summer to discuss the issue of potential breeding sites for the mosquito that transmits La Crosse encephalitis. The product of these meetings was a draft agreement whereby MMCD staff were given permission to survey lands for potential LaCrosse encephalitis breeding sites that were located within one half mile of any known encephalitis case. Upon discovery of a tree cavity that produced disease carrying mosquitos, the Refuge would be consulted and a decision would then be made concerning that particular site. Since a variety of wildlife species utilize tree cavities, the first action would be to preserve the cavity but drain the water from it by drilling a drainage hole. Due to inaction by MMCD, the agreement was never finalized nor did any MMCD staff contact the Refuge regarding the discovery of any potential breeding sites.

Minneapolis-St. Paul Airport North-South Runway Expansion

Early in the year, the Refuge with the strong support of the Regional Office, finished negotiations with the Metropolitan Airports Commission (MAC) concerning the impact of future over flights on the Long Meadow Lake and Blackdog Units. In effect, MAC agreed to provide a cash settlement of \$26,090,000 in exchange for the right to overfly this portion of the Refuge. The final amount was determined by an appraisal of damages completed by Shenehon Company of Minneapolis.

Once the final amount was agreed to, a non-profit organization was established for the primary purpose of serving as the mitigation agent for the Refuge. The Minnesota Valley National Wildlife Refuge Trust, Inc. (Trust) was formally established on August 31, 2000. The management and affairs of this corporation are under the direction of a Board of Directors, each serving by appointment by one of the following organizations: 1) Commissioner of the Minnesota Department of Natural Resources, 2) Friends of the Minnesota Valley, 3) National Audubon Society, 4) The Minnesota Waterfowl Association, and 5) Minnesota River Basin Joint Powers Board. The first Board of Directors are as follows:

Kathleen Wallace - Minnesota DNR
Ed Crozier - Friends of the Minnesota Valley
Lois Norrgard - National Audubon Society
Jim Cox - Minnesota Waterfowl Association
Jim Ische - Minnesota River Basin Joint Powers Board

Ed Crozier was elected President and Jim Cox was elected Treasurer of the Board during its first official meeting held on September 7, 2000. After formation of the Trust, the Board of Directors began laying the foundation of its organization including the hiring of Ms. Deb Osgood as its interim Executive Director. Among other items, the Board developed its long-term investment policy and began the process of interviewing firms as investment advisors.

On September 19, 2000, the entire \$26,090,000 was transferred into an account in the name of the Trust. All but \$90,000 of these funds were initially invested in a Kemper Zurich Government Securities Fund which at the time of investment, was earning approximately 6.73% per annum.

For the record, the use of this mitigation fund is restricted to acquiring new lands and facilities for Minnesota Valley NWR that will offset the impacts of overflights on Refuge lands. In general, the fund will be used to acquire no less than 4,000 acres of additional lands, an additional environmental education center, and associated trails and facilities. Specific mitigation projects will be identified in the Refuge's Comprehensive Conservation Plan which is scheduled for completion in the Fall of 2001. Only a small portion of this fund, up to \$200,000 annually, can be used for operational purposes.

7

Public Education and Recreation

7.a. Provide Visitor Services

Approximately 282,000 people visited the Refuge during FY 2000 including 16,583 who came to the Visitor Center. The Visitor Center was open Tuesday through Sunday, from 9:00 a.m. to 5:00 p.m. Refuge staff provided information services and bookshop sales at the center. The Refuge offers all of the big six recreational opportunities, i.e. hunting, fishing, wildlife observation and photography, and environmental education and interpretation.

Hunting

Various types of hunting are allowed in selected units of the Refuge. Portions of the Wilkie Unit and all of the Louisville Swamp and Rapids Lake Units are open to archery deer hunting. The Louisville Swamp Unit south of the middle road is open to waterfowl, small game, and spring turkey hunting. In addition, all of the WPAs and the Rapids Lake Unit are open to public hunting in accordance with state hunting regulations. Hunting, fishing, and trapping accounted for approximately 20,000 visits.

Young Waterfowlers Program

A total of 21 youth and 19 mentors participated during the this year's 20 hour training program conducted cooperatively with the Minnesota Waterfowl Association. Other than the actual hunt, duck and goose calling and the field day exercise continue to be favorites among participants. Fisher, Blue, Chaska, Long Meadow Lakes and Louisville Swamp wetlands were opened to participants during the Youth Hunt on September 16.

The annual wild game recognition dinner was held on January 22, 2000 for participants, mentors, and their families. Approximately 75 people attended the event.



Photo 13. Successful youth hunters. Photo by T. Schreiner.

Waterfowl Hunting for Sportsmen and Sportswomen With Disabilities

In cooperation with Capable Partners, Inc, another successful year was realized in the hunting programs for people with disabilities. Physically challenged hunters and their able-bodied assistants participated in hunts harvesting ducks and geese.

Capable Partners was again granted a special use permit to conduct this hunt. The Refuge provided and maintained the facilities which included two blinds, a boat dock, and an access road. The facility is located on the north shore of Rice Lake within the Upgrala Unit. In 2000, ten disabled hunters and nine able-bodied assistants conducted 11 hunts totaling 227 hours. They harvested 17 ducks and 28 geese.

Participants of the program also joined in the festivities during the Young Waterfowler wild game recognition dinner held during January.

Fishing

The Refuge offers diverse fishing opportunities. The most popular spots to fish are from the banks of the Minnesota River in the Long Meadow Lake and Black Dog Units where catfish and carp are the most common catch. The Bass Ponds also offers several spots for anglers. Over the past few years there has been a significant increase in fishing on the Refuge by immigrants. Hispanics, particularly, are found on the banks of the river. Refuge fishing is also popular among Russians and the Hmong. Refuge officers have made it a point to inform users of the Minnesota River about the dangers of eating the fish that are caught in those areas.

Youth Fishing Day

The 2000 Youth Fishing Day was held on June 3 to commemorate National Fishing Week. Various sponsors including the Bureau of Indian Affairs, 1854 Authority, and Gander Mountain helped make the event a success. Over 160 inner-city youth attended the morning session. The Red Lake Band and personnel from the Holiday Inn Airport #2 provided a shore lunch for these youth and over 50 volunteers. The event introduced the youth (ages 6-12) to recreational fishing through learning stations designed to teach them angler ethics and fishing skills. In the afternoon, an additional 180 kids and their parents participated in these activities.

Wildlife Observation

The Refuge continues to be a popular destination for metro birders. The Bass Ponds and Old Cedar Avenue are two areas that receive heavy use, especially during migration. Volunteer Craig Mandel's "Bird Watching Treks" continue to attract a large audience.

Minnesota River Valley Birding Trail

The Minnesota River Valley Birding Trail is an initiative set forth by Minnesota Audubon, a state office of National Audubon Society, to provide educational and interpretive information for bird watchers and nature lovers as well as promote ecotourism along its routes in Minnesota. Because the Refuge has many well-known birding spots, several stops will be included on the trail.

Deanne Endrizzi, a bird watcher on staff, has been appointed the Refuge liaison and is a member of the Trail Planning Committee to help plan the "metro loop" portion of the trail. The trail will consist of adjoining loops and span the Minnesota River Valley watershed from Fergus Falls in the north to the Iowa border.

The end product will consist of illustrated maps, trail guides and road signs. All of this will lead to opportunities for bird watchers to spot 320 species that inhabit the areas of the Minnesota River Valley watershed.

There are two other endeavors in Minnesota similar to this one. The Pine to Prairie Birding Trail is complete in the northern part of the state and an Upper Mississippi Birding Trail also in progress along the Mississippi. Both of these were and are being developed in cooperation with several other Refuges.

Wildlife Photography

As part of National Wildlife Refuge week the Refuge sponsored a photography contest with the theme "Scenes of Minnesota Valley NWR". The Refuge received 80 entries in the categories of plants, people, wildlife, and landscapes. The winning photo, "Blue Bird of Paradise" was taken by Sandi Pederson of Apple Valley. Katie Bovee of Le Center, was awarded best in show for the youth division with her photo "Golden Highlights".

Environmental Education

Approximately 10,600 students and teachers, from pre-school to high school, attended environmental education programs on the Refuge. Educator workshops reached about 300 teachers and 2,149 visitors attended interpretive programs offered by Refuge staff and volunteers.

Preschool Program

Our preschool program served over 3,400 children along with about 1,000 adults. Program topics include migration, habitat, tracks, squirrels, and trees. This programming is very popular with preschools and day care facilities in the area.

K-3 Curriculum

The newest addition to environmental education programming offers teachers five days of activities, with one activity involving an on-site visit to the Refuge. Four curriculum units focus on insects, birds, habitats and ethics.

Partnership Schools

Partnership between the Refuge and our cultural diversity schools have slipped somewhat with the loss of key staff. We are trying to encourage more cultural diverse schools to visit the Refuge and explore connections with wildlife and habitats in their own backyard. The Refuge also has a partnership with the Minnesota School of Environmental Studies (SES), also known as the Zoo School.

Big River Journey

About 2,091 students (4th-6th grade) from twenty-two elementary schools participated in the Big River Journey. During the two hour paddle boat trips, students learn about the Mississippi River and its watershed through six learning stations. Refuge staff and volunteers teach students about birds and their adaptations at one of the stations. Big River Journey is coordinated by Mississippi National River and Recreation Area (National Park Service) and includes 16 river trips in May and a teacher workshop in February.

Scouting

Twenty programs were given to some 300 scouts and their families. About a dozen boy and girl scouts earned Watching Wildlife Patches on the Refuge during the year.

Townhall Meeting at Minnesota Valley NWR for "Future Voters for the Environment"

More than 100 high school students, selected from four local schools, met with Representative Bruce Vento and Representative Jim Ramstad on Monday October 11th. During the meeting, students asked questions regarding the environment, from how they stand on issues such as the Endangered Species Act to how environmental matters are addressed in Washington. The meeting was coordinated by the League of Conservation Voters and their goal was to teach soon-to-be voters lessons in the importance of civic participation for environmental protection. The day's events also included a turkey vulture release from the Raptor Center, garbage cleanup, and break-out discussion groups.



Photo 14. Representatives Vento and Ramstad answer questions from students. Photo by S. McDonald.

Resource Library

The Regional resource Library is located in the Refuge's Visitor Center building. Its purpose is to distribute a variety of materials to field offices, educators, and conservation agencies. Services provided for FY00 are summarized below.

Video requests: 464

Information/resource requests: 168

USFWS displays use: 26

Educational Kits use:

Prairie Trunk	14
Project Wet Trunk	0
Suitcase for Survival	20
Songbird Trunk	9
Enviroscape Model	0
Wetland Trunk	4
Wolf Box	10
Zebra Mussel	4
Total	61

Interpretation

Mississippi River Kiosk

The Mississippi National River and Recreation Area, a unit of the National Park Service, donated an interactive (touch-screen) computer kiosk with a desk and chairs to the Refuge Visitor Center. The entertaining and educational computer program provides information, history, and stories about the Mississippi River and its watershed through audio, video, and interactive activities.

Ecommunity

Staff participated in the seventh annual Ecommunity Festival at the Mall of America on October 21st - 22nd. This two-day festival teaches kids and adults about recycling and respecting the environment. Refuge staff hosted an activity station about local watersheds in partnership with the National Park Service. Other organizations and retailers participated in the event, which reached over 4,500 children, parents, and shoppers.

National Wildlife Week

Refuge staff have visited local schools during National Wildlife Week for twenty years. This year, 12 presentations were given in ten schools for 2,515 students and 110 teachers. The theme for this year was "Water for Life: Keep the Wild Alive".

Art Gallery Exhibits

There were eight gallery exhibits in FY2000. Each exhibit was displayed for six weeks with no lapse in the use of the gallery. Approximately 160 individual art pieces were hung. In addition, the gallery hosted the Minnesota Junior Duck Stamp exhibit.

The exhibits included:

- "Minnesota Flora" watercolor by Agnes Fine
- "Searching for Beauty" black and white photography by Wendy Houser and Karl Blomseth, and color photography by Joe Rudnicki
- "Leaves Compared with Flowers" fabric applique by Catherine C. Reed
- "Landscapes" acrylic, oil, and pastel paintings by Wendy Lane and Mark Grandlund
- "Reflections of Nature" oil paintings by Joy Hartl
- "Nature and Wildlife Art Around the Refuge" watercolors by Kim Hanks and color photography by Ken Cantley
- "Consider the Lilies, how they Grow" flora in watercolor, by Sandra Muzzy
- "Minnesota Landscapes and Wildflowers" oil and watercolor by Donna LeBeau

National Wildlife Refuge Week

National Wildlife Refuge Week consisted of several activities. Two evening events were hosted during the week and an outdoor celebration on Saturday, October 16th. Evening events included judging for the Refuge's photography contest on Tuesday, October 12th and an inspiring slide

presentation by naturalist/photographer Scott Sharkey on Thursday, October 14th. Thursday's event was a cooperative effort with the Friends of the Minnesota Valley, which held their annual meeting in conjunction with the Refuge's event. The outdoor celebration included bird walks, canoe trips, wildlife viewing, fly casting, duck and goose calling, live birds of prey from the Raptor Center, and children interacting with staff to earn a Junior Refuge Manager badge. Over 300 people attended these special events and celebrated with the Refuge staff.



Photo 15. Minnesota Duck and Goose callers instructing Refuge Week attendees. Photo by T. Schreiner.

International Migratory Bird Day

In partnership with the Como Zoo and the National Park Service, about 2,300 people received information about migratory birds during International Migratory Bird Day on Saturday May 13, 2000. Over 500 children became "Winning Warblers" by gathering habitat patches to complete a Certificate of Survival and claim a poster award during the day.

Bloomington Clean Water Festival

Refuge staff participated in the Bloomington Clean Water 2000 Festival at Olson Middle School on Saturday, April 15th. Approximately 300 people attended and our tabletop display was visited by about 100. Students who answered the question "What three plants and three animals live on Minnesota Valley National Wildlife Refuge?" received extra credit. Most could not identify a photo on the display of a great blue heron.

Junior Duck Stamp Program

Bonnie Latham, age 16, of Hastings became the first Minnesota youngster to win the National Junior Duck Stamp Competition with her acrylic painting of a pair of northern pintails. Eleven hundred Minnesota youngsters participated in this year's program and approximately 500 people attended the Junior Duck Stamp Awards Ceremony at the Airport Hilton Hotel. Highlights of the program are as follows:

- A traveling exhibit consisting of the top 36 paintings was on display at such places as the Minnesota State Fair, Art Barbarians Art Gallery, Cabela's, and at county fairs and art fairs throughout Minnesota with a viewing audience of 175,000.
- Major funding for the program is provided by the Minnesota Waterfowl Association, Inc. (MWA) and the Green Isle Sportsmen Club. The Green Isle Sportsmen Club also restored the uplands of a WPA in honor of this year's winner. Volunteers contributed 350 hours to this year's program.
- The Minnesota Junior Duck Stamp continues to be recognized by the Minnesota Academic Excellence Foundation (MAEF) which promotes it in its Reach for the Stars school program.
- The Junior Duck Stamp Program was featured in two major metro daily newspapers, at least two television stations carried the story, and approximately 50 articles appeared in local papers throughout the state, with several national and local magazines also carrying pictures and/or articles.
- The judges for this year's competition included: Joe Hautman, Federal Duck Stamp Artist, Sara Gilbert, Editor, U.S. Art News, Sara Koller, Wildlife Wings Marketing VP, John Schomaker, USFWS, and Doug Smith, Outdoors Editor, Minneapolis Star Tribune.



Photo 15. Bonnie Latham at the Waterfowl Expo at Cabela's, July 2000. Photo by J. Miller.

7.b. Outreach

Our general brochure, completed in FY99, was awarded first place in the site publication category of the National Association for Interpretation's Media Contest. However, at 38 cents per copy, we are not able to afford our distribution goals to local hotels. A "mini-bro" has been developed for hotel distribution to cut costs to about 4 cents each. It features the brochure cover on one side, directions to the Visitor Center on the other, and will be printed on coated card-stock.

Refuge staff and volunteers reached over 6,000 people through off-site presentations and special events hosted on the Refuge. Thirty-six news releases were distributed throughout the metro area. The press releases regarding the Junior Duck Stamp Program, Waterfowl Production Areas, and the Comprehensive Conservation Plan were distributed to communities throughout the State. There were ten television and radio spots for the six special events held at the refuge during the year. The Refuge also established a new website which lists a current calendar of activities. Many of the convention and visitor bureaus have linked to the Refuge website.

Finally, good quality county maps depicting the locations of WPA's in the WMD were prepared. These maps are provided to hunters, anglers, and others interested in visiting these units.

8

Planning and Administration

8.a. Comprehensive Conservation Planning

The Refuge has moved forward to produce a complete and thorough Comprehensive Conservation Plan (CCP). Throughout the pre-planning stages beginning in 1998, the Refuge and its staff have included the public and other conservation agencies in the identification and development of significant issues to be addressed within the Refuge CCP. With the conclusion of these working groups at the end of 1999, the Refuge staff assimilated the information and has moved on to penning those ideas and impressions into a working document.

In an effort to accurately classify and quantify management acres for incorporation into the CCP, Refuge staff painstakingly mapped all land cover types throughout the Refuge using the Minnesota Land Cover Classification System. Current efforts are focused on digitizing and quality checking this information before its integration into the Refuge's Geographical Information System. With this data, the Refuge staff will be able to more precisely address important land management issues, and incorporate those concerns accurately into the CCP.

As of this writing, the Refuge has authored five preliminary chapters for internal review and editing. With the completion and analysis of the land cover data in Spring 2001 and, undoubtedly, several CCP revisions throughout the summer, the Refuge aspires to have an actual document approved for public review by the end of 2001.

8.b. General Administration

Funding

Refuge Operations	1261	\$1,222,397
Volunteer Program	1261	20,999
Challenge Grant Funds	1261	27,250
Maintenance Mgmt (Refuge)	1262-A3MV	75,000
Maintenance Mgmt (WMD)	1262-A3MW	15,000
Private Lands (Hab. Rest.)	1121-03HR	60,000

Private Lands (Admin.)	1121-03TA	57,000
NAWMP Funds	1234	42,500
Fire Management	9251	36,887
Prescribed Fire	9263	31,050
Resource Center	various	<u>54,163</u>
TOTAL		\$1,642,246

Contributed Funds

General Purpose (Refuge)	7201-0083	\$ 619
Partners for Wetlands Programs	7201-0118	17,391
Miscellaneous	7201-0147	150
Met Council	7201-0199	7,300
Junior Duck	7201-0362	7,045
Eagle Creek Rest. (Savage Fen)	7201-0422	17,663
Ducks on a Stick	7201-0429	1,500
Young Waterfowlers	7201-0433	300

Staffing

The Refuge welcomed three new faces this year and said good-bye to seven. Nick Palaia and Jana Ritch both came on board in December and Sarah Inouye began her career with the Fish and Wildlife Service as a SCEP Student in May. Nick transferred from the Litchfield WMD and Jana transferred here from the National Park Service in Louisiana, both in December. Sarah is a student at the College of St. Catherine's and will graduate in the Winter of 2000.

Those departing were Jim Bradley, Linda Collier, Vicki Samuels, Sue McDonald, Tracy Fifarek, Katy Fitzgerald, and Jill Torres. Jim accepted a position with Hennepin County. Linda and Sue remain with the Federal Government, with Sue still working for the Fish and Wildlife Service. She is now stationed at the Lee Metcalf NWR in Montana and is happy as ever to be back in the "wild." Katy works for the Minnesota Waterfowl Association and is still stationed in our building so although no longer a Service employee, still a co-worker. Jill resigned in order to continue her education and pursue a teaching career.

Juancarlos Giese returned for his second summer as a SCEP student and took on a leadership role in training in the new summer workers, including CAI Students Amy Heberlein and Melissa Velasquez. We again had three summer interns from the University of Wisconsin - River Falls. They were Rachael Booth, Scott Wentz, and Erin Grossman. In addition, Kerry Accola was hired as a Office Automation STEP Student and worked from June through September, when her appointment expired.

The following is a list of the entire Minnesota Valley staff for Fiscal Year 2000, including titles, current grades and report dates.

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	Resigned
Collier, Linda	Administrative Technician	GS-6	10/01/95	Transferred
Endrizzi, Deanne	Park Ranger	GS-7	09/09/90	
Franke, Dean	Maintenance Worker	WG-9	03/30/97	
Gaunitz, Debbie	Refuge Operations Specialist	GS-11	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	
Malling, Mike	Wildlife Biologist	GS-9	04/27/97	
McDonald, Sue	Park Ranger	GS-9	12/07/97	Transferred
Miller, Judith	Park Ranger	GS-11	06/28/92	
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	Terminated
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	
Torres, Jill	Park Ranger	GS-9	02/01/99	Resigned
Wassather, Roy	Maintenance Worker	WG-9	07/28/91	

Permanent Part-Time Appointments

NAME	TITLE	GRADE	REPORT DATE	STATUS
Cassem, Kathryn	Park Ranger	GS-7	07/24/94	

Permanent Seasonal Appointments

NAME	TITLE	GRADE	REPORT DATE	STATUS
Marcouiller, Tom	Maintenance Worker	WG-6	4/18/99	

Permanent Intermittent Appointments

None

Temporary/Term Appointments

NAME	TITLE	GRADE	REPORT DATE	STATUS
Fifarek, Tracy	Biological Sciences Tech.	GS-5	05/03/99	Resigned
Fitzgerald, Katy	Biological Sciences Tech.	GS-5	02/01/99	Resigned

SCEP/STEP/CAI Students

NAME	TITLE	GRADE	REPORT DATE	STATUS
Accola, Kerry	Office Automation Clerk	GS-3	06/04/00	Expiration of Appt.
Giese, Juancarlos	Student Trainee (Biology)	GS-4	06/06/99	
Heberlein, Amy	Biological Science Aid	GS-3	06/11/00	Expiration of Appt.
Inouye, Sarah	Student Trainee (Biology)	GS-4	05/21/00	
Velasquez, Melissa	Biological Science Aid	GS-3	06/11/00	Expiration of Appt.



Photo 17 . Minnesota Valley NWR Staff. Photo by R. Marks.

Volunteer, Career and Work Programs

With the re-employment of a full time coordinator, the volunteer program increased the number of hours worked from 6,000 in FY99 to over 9,500 hours in FY2000. Hours were donated through partners, interns, volunteers, and community members. Visitor services received the most support with almost 6,000 hours donated. Volunteers performed a variety of activities from operating the information desk to leading school groups in environmental education programs. The Refuge monitoring programs and surveys were complimented by more than 1,000 volunteer hours in such activities as frog calling surveys, insect surveys, and habitat surveys. Volunteers also logged close to 1,500 hours working with habitat restoration and management by performing acorn collection, seed collection, tree planting, exotic species removal and interseeding tree modules. Another group of volunteers logged several hundred hours with bird banding, building nesting structures, and working with pest plant control.



Photo 18. Skills for Tomorrow students preparing acorns for storage. Photo by J. Ritch.

Career Awareness Program

The Career Awareness Institute is a Federal program that provides training and skills in fisheries and wildlife biology and other aspects of natural resource management. The program includes a two week academic phase at the National Conservation Training Center, and a seven week work assignment at a field station. Amy Heberlein from Illinois College and Melissa Velasquez from New Mexico Highlands University, spent the summer assisting the station biologist with vegetation monitoring, biological control monitoring, wildlife surveys and data analyses. In addition, they conducted environmental education programs and helped with Refuge maintenance projects.

Student Career Experience Program

The Student Career Experience Program (SCEP) is a Federal program that provides positions for college students enrolled in a four year degree program. The program provides job training for the students while they attend college and assists them in finding employment with the U.S. Fish

and Wildlife Service upon graduation. Sarah Inouye from St. Catherine University assisted with environmental education, maintenance and biological projects and will graduate in December of 2000. Juancarlos Giese (University of Wisconsin, River Falls) spent his second summer at the Refuge and was mainly responsible for completing habitat classification of Refuge land. Juancarlos will spend one more summer at the Refuge and graduate in May of 2002.



Photo 19. Our summer students: Scott Wente, Rachael Booth, Jamila Gaidi, Amy Heberlein and Melissa Velasquez Photo by D. Gaunitz.

Youth in Natural Resources

The Youth in Natural Resources program is designed for youth under the age of 18 to learn about careers in natural resources. The program is sponsored and funded by the MnDNR, and work experiences are provided by numerous local agencies. Jamila Gaidi, a student from St. Paul, worked with the biology program this year conducting vegetation and wildlife surveys from June 19-July 27.

Minnesota Association of Environmental Education (MAEE)

The Memorandum of Understanding (MOU) between the Refuge and MAEE was revised and updated in FY2000. The MOU establishes the Refuge as MAEE's headquarters for mailings and administrative purposes.

Tree Trust

Twin Cities Tree Trust completed sections of two trails this year. 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 17 years. The only cost to the Refuge is for the materials. The projects completed and/or initiated during the time period are as follows:

- Constructed a 300-foot trail connection between the Visitor Center and the Kelley Access Road.
- Constructed a 400-foot trail connection from the Hogback Pond Fishing Pier to Pond C resulting in completion of a double loop trail system.



Photo 20. Trail connection between the Visitor Center and Kelley trail access. Photo by T. Schreiner.

8.c. Major Construction and Maintenance

Through Maintenance Management System (MMS) funding, the Boe Property in the Upgrala Unit was cleaned up, including removal of a house and several barns and outbuildings. MMS funding was also used to complete the removal of barn and silo foundations on the Rapids Lake Unit. Refuge staff finished removal of the remaining junk and scrap metal that was scattered around the property. The local fire department will be burning the remaining piles of scrap wood and then the cleanup should be complete.

Building sites were also removed on the Redhead and Erin Prairie Waterfowl Production Areas. Buildings were sold or burned down by the local fire departments. Foundations were removed and planted to grass. A parking lot was also constructed on the Redhead WPA and the unit sign was put up.

The repaving of the Old County Road 18 trail was completed. Several gates were added to prevent vehicle trespass and the boat launch and parking lot for Rice Lake (public waterfowl hunting area) were completed. This was a flood project from 1997 that was completed in partnership with a Minnesota Department of Transportation bridge replacement. The bridge and Refuge portion of the trail will become part of the State trail system that will eventually extend along the length of the Refuge along the Minnesota River.

A water control structure was installed between Fisher and Blue Lakes as part of the improvement of the Metro Waste Services Facility next to Blue Lake. When combined with the water control structure replaced on Blue Lake during December 2000, the Refuge will have excellent water control capabilities on Blue, Fisher and Rice Lakes. During the past five years, through a combination of several projects, the water control structures on all three lakes have been repaired or replaced. Channels were also dug into Rice and Fisher Lakes to allow for better

draw-down capability. The structures and associated pipes for Rice and Fisher Lakes were also protected with rip rap this year.

Most of the interior walls of the Visitor Center were repainted this year, as well as several portions of the administrative offices of the Refuge.

The entrance sidewalk to the Visitor Center was repaired through a MMS project. The sidewalk had heaved and created unsafe conditions at the entrance to the building. Pads were replaced and the proper base was put in under the sidewalk. The original base under the sidewalk was insufficient and resulted in cracking and heaving of the pads. Outside lighting was also repaired through this contract.

The cleaning and repair of the red and green pole barns at the Rapids Lake Unit was completed this year. The winter of 2000-2001 will be the first time that we will be able to store all our equipment inside.

Maintenance staff spent much time repairing damage to gates, signs and structures that was caused by vandals. Maintenance staff and interns also mowed and maintained over 30 miles of trails, 17 parking lots, and grounds for nine buildings.

The new parking lot at the Rapids Lake Unit was also started. A section of post and rail and a kiosk will be added during the summer of 2001.

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MONITORING AND STUDIES

1.a. Surveys & Censuses		Outcomes:
Inputs:	Outputs:	
\$29 1260 funds(\$K)	# of wildlife surveys conducted 8	TE: 10%
Other funds(\$K)	# of habitat surveys conducted 3	WF: 15%
\$29 Total funds(\$K)	% of effort off-refuge 0	OMB: 15%
95 1260 Staff Days		HEC: 25%
40 Other Staff Days		IAF: %
135 Total Staff Days		SDA: %
707 Volunteer Hours		RFW: 15%
		PED: 10%
		PRC: 10%

In addition to monitoring plots in the Rapids Lake Unit using the RX-80 fire monitoring technique, baseline plots in floodplain forest and restored prairie sites were added this year. These plots enable the Refuge to evaluate the success of our habitat restoration and fire management programs. Over 200 plant specimens were collected and added to the Refuge herbarium. A natural resource inventory plan summarizing all inventory and data collection protocols for the refuge was completed.

1.b. Studies and Investigations		Outcomes:
Inputs:	Outputs:	
\$8 1260 funds(\$K)	# of studies conducted 4	TE: %
Other funds(\$K)	% of effort off-refuge 0	WF: %
\$8 Total funds(\$K)		OMB: %
20 1260 Staff Days		HEC: 50%
5 Other Staff Days		IAF: %
25 Total Staff Days		SDA: %
350 Volunteer Hours		RFW: 50%
		PED: %
		PRC: %

The U.S. Department of Agriculture continues to monitor the effectiveness of leafy spurge beetles at the Upgrala and Wilkie sites. The Upgrala site is one of the most successful rearing and control sites in the State of Minnesota.

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HABITAT RESTORATION

2.a. Wetland Restoration

Outcomes:

Inputs:

Outputs:

\$27 1260 funds(\$K)

\$146 Other funds(\$K)

\$173 Total funds(\$K)

18 1260 Staff Days

720 Other Staff Days

738 Total Staff Days

25 Volunteer Hours

of refuge acres restored 120

of off-refuge acres restored 309

acres of new wetlands 0

TE: 10%

WF: 45%

OMB: 5%

HEC: 5%

IAF: %

SDA: %

RFW: 5%

PED: 5%

PRC: 20%

In FY00 the Refuge completed wetland restorations on four WPA's including Delehanty, Hahn Lake, Dodge Center Creek and High Island totalling more than 120 acres. These wetlands will provide valuable waterfowl breeding habitat for a variety of species including mallards, blue winged teal, wood ducks, redheads and ruddy ducks. In addition these restorations complement many local efforts to improve water quality.

2.b. Upland Restoration

Outcomes:

Inputs:

Outputs:

\$29 1260 funds(\$K)

\$150 Other funds(\$K)

\$179 Total funds(\$K)

20 1260 Staff Days

250 Other Staff Days

270 Total Staff Days

571 Volunteer Hours

of refuge acres restored 300

of off-refuge acres restored 560.5

TE: 5%

WF: 30%

OMB: 10%

HEC: 10%

IAF: %

SDA: %

RFW: 30%

PED: 5%

PRC: 10%

Upland restoration highlights include prairie restoration of more than 300 acres on Waterfowl Production Areas and over 550 acres on Wetland Reserve sites, Conservation Reserve sites, and other private lands. Refuge staff have also set up experimental monitoring plots on the Refuge to test the effectiveness of fall burning and overwinter seeding of local ecotype prairie seed.

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2.c. Riverine Restoration		Outcomes:
Inputs:	Outputs:	TE: %
\$8 1260 funds(\$K)	miles of refuge rivers restored 0	WF: 20%
\$41 Other funds(\$K)	miles of non-refuge rivers rest. 3	OMB: 20%
\$49 Total funds(\$K)	# riverine projects completed 4	HEC: 5%
30 1260 Staff Days		IAF: %
20 Other Staff Days		SDA: %
50 Total Staff Days		RFW: 30%
300 Volunteer Hours		PED: 5%
		PRC: 20%

Over 3 miles of river corridor was restored impacting more than 65 acres of uplands adjacent to the river. Many of these restoration projects were completed through cooperative agreements with local Soil and Water Conservation Districts.

2.d. Deepwater/Coral Reef Restoration		Outcomes:
Inputs:	Outputs:	TE: %
\$0 1260 funds(\$K)	# refuge deepwater acres restored 0	WF: %
\$0 Other funds(\$K)	# refuge coral reef acres restored 0	OMB: %
\$0 Total funds(\$K)	# off-refuge deepwater acres rest. 0	HEC: %
0 1260 Staff Days	miles of marine shoreline restored 0	IAF: %
0 Other Staff Days	# deepwater/coral reef projects 0	SDA: %
0 Total Staff Days		RFW: %
0 Volunteer Hours		PED: %
		PRC: %

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Type: NWR

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HABITAT MANAGEMENT

3.a. Water Level Management

Outcomes:

Inputs:

\$23 1260 funds(\$K)
 Other funds(\$K)
 \$23 Total funds(\$K)
 75 1260 Staff Days
 25 Other Staff Days
 100 Total Staff Days
 Volunteer Hours

Outputs:

acres managed 1100
 # units managed 16

TE: 10%
 WF: 30%
 OMB: 20%
 HEC: 10%
 IAF: %
 SDA: %
 RFW: 10%
 PED: 10%
 PRC: 10%

For the first time in 10 years the Minnesota River did not flood out of its banks, allowing the Refuge an excellent opportunity to manage its floodplain wetlands. Fisher Lake was completely drawn down providing excellent shorebird migration habitat in late spring. The reflooded 200 acre lake is covered with dense stands of bulrush, smartweed, arrowhead, beggars tick, and wild rice. Rapids Lake was also drawn down and provided important mudflats for shorebird migration. During late spring, 500-2,000 shorebirds were commonly seen on the mudflats.

3.b. Moist Soil Management

Outcomes:

Inputs:

\$6 1260 funds(\$K)
 Other funds(\$K)
 \$6 Total funds(\$K)
 25 1260 Staff Days
 0 Other Staff Days
 25 Total Staff Days
 Volunteer Hours

Outputs:

new acres managed 18
 # new units managed 2

TE: %
 WF: 85%
 OMB: 15%
 HEC: %
 IAF: %
 SDA: %
 RFW: %
 PED: %
 PRC: %

Low Minnesota River water levels enabled Refuge staff to manage the Chaska moist soil unit. Vegetation within the unit was mowed and the unit was flooded in late September to provide fall migratory habitat.

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3.c. Graze/Mow/Hay			Outcomes:
Inputs:	Outputs:		
\$2 1260 funds(\$K)	# acres mowed/hayed	15	TE: %
Other funds(\$K)	# acres grazed	0	WF: 10%
\$2 Total funds(\$K)	# animal unit months supported	.0	OMB: 10%
5 1260 Staff Days			HEC: 40%
0 Other Staff Days			IAF: %
5 Total Staff Days			SDA: %
Volunteer Hours			RFW: 40%
			PED: %
			PRC: %

An agricultural covenant on the Perbix Waterfowl Production Area requires that we keep 15 acres of the tract in some type of farming. The 15 acres is currently in alfalfa and is harvested late in the season by a local farmer.

3.d. Farming			Outcomes:
Inputs:	Outputs:		
\$4 1260 funds(\$K)	# acres farmed	305	TE: %
Other funds(\$K)	% cooperatively farmed	100	WF: 15%
\$4 Total funds(\$K)			OMB: %
10 1260 Staff Days			HEC: 65%
0 Other Staff Days			IAF: %
10 Total Staff Days			SDA: %
0 Volunteer Hours			RFW: 20%
			PED: %
			PRC: %

Cooperative farming agreements are being used on Dodge Center Creek and Howard Farm Waterfowl Production Areas to prepare the sites for seeding with native grasses. Native grass seedings have the best success when drilled into the previous years soybean stubble.

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3.e. Forest Management		Outcomes:
Inputs:	Outputs:	
\$23	# acres harvested 65	TE: %
\$15	# acres treated 38.5	WF: 10%
\$38		OMB: 10%
50 1260 Staff Days		HEC: 40%
0 Other Staff Days		IAF: %
50 Total Staff Days		SDA: %
133 Volunteer Hours		RFW: 30%
		PED: %
		PRC: 10

Staff traveled to LaCrosse, Wi., to collect Swamp White Oak acorns for the floodplain reforestation program. Swamp White's mast in quantities such as this year only once every ten years. More than 30 gallons were collected to be used over the next 4 years through the establishment of our own seedling nursery and experimenting with Root Propagation Method seedlings. These RPM seedlings are proving highly successful for floodplain plantings as they are flood tolerant, grow more than 4 feet in a year, have a 98% survivability rate, and are masting in

3.f. Fire Management		Outcomes:
Inputs:	Outputs:	
\$38 1260 funds(\$K)	# refuge prescribed burn acres 757	TE: 10%
Other funds(\$K)	# off-refuge prescribed burn acres 400	WF: 30%
\$38 Total funds(\$K)	# refuge prescribed burns conducted 13	OMB: 20%
135 1260 Staff Days	# wildfires suppressed 9	HEC: 20%
0 Other Staff Days		IAF: %
135 Total Staff Days		SDA: %
Volunteer Hours		RFW: 10%
		PED: 5%
		PRC: 5%

An arsonist was responsible for lighting at least five major fires on the Refuge, resulting in over 400 acres burned. Refuge staff responded to all of these wildfires and assisted in the followup investigations. In addition, dry conditions contributed to four other fires on various Refuge units. Refuge staff completed high priority burns included oak savanna and native prairie restoration. For the first time the Refuge partnered with a Minnesota Conservation Corps crew which provided assistance to the refuge on fires.

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3.g Pest Plant Control		Outcomes:
Inputs:	Outputs:	TE: %
\$39 1260 funds(\$K)	# acres treated 361.4	WF: %
Other funds(\$K)	# refuge acres infested 2800	OMB: %
\$39 Total funds(\$K)	# acres treated chemically 80.4	HEC: 100%
20 1260 Staff Days	# acres treated mechanically 67	IAF: %
0 Other Staff Days	# acres treated biologically 214	SDA: %
20 Total Staff Days		RFW: %
439 Volunteer Hours		PED: %
		PRC: %

In a continuing effort to control exotic plant species on the Refuge, over 115,000 leafy spurge beetles and 2,000 purple loosestrife beetles were released. This was also the first year that the Refuge released insects for the control of spotted knapweed. Approximately 400 insects were released near Long Meadow Lake at Old Cedar Avenue.

FISH AND WILDLIFE MANAGEMENT

4.a. Bird Banding		Outcomes:
Inputs:	Outputs:	TE: %
\$3 1260 funds(\$K)	# waterfowl banded 10	WF: 100%
Other funds(\$K)	# other birds banded 0	OMB: %
\$3 Total funds(\$K)		HEC: %
10 1260 Staff Days		IAF: %
0 Other Staff Days		SDA: %
10 Total Staff Days		RFW: %
46 Volunteer Hours		PED: %
		PRC: %

Ten wood ducks were banded and released at Continental Grain Marsh on the Wilkie Unit.

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Type: NWR

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4.b Disease Monitoring and Treatment			Outcomes:
Inputs:	Outputs:		TE: ♂
\$0 1260 funds(\$K)	# outbreaks monitored 0		WF: ♂
Other funds(\$K)	# mortalities documented 0		OMB: ♂
\$0 Total funds(\$K)	% effort off-refuge		HEC: ♂
0 1260 Staff Days			IAF: ♂
0 Other Staff Days			SDA: ♂
0 Total Staff Days			RFW: ♂
Volunteer Hours			PED: ♂
			PRC: ♂

4.c. Reintroductions			Outcomes:
Inputs:	Outputs:		TE: ♂
\$0 1260 funds(\$K)	# mammals released 0		WF: ♂
\$0 Other funds(\$K)	# birds released 0		OMB: ♂
\$0 Total funds(\$K)	# reptiles/amphibians released 0		HEC: ♂
0 1260 Staff Days	# fish released 0		IAF: ♂
0 Other Staff Days	# other animals released 0		SDA: ♂
0 Total Staff Days			RFW: ♂
0 Volunteer Hours			PED: ♂
			PRC: ♂

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4.d. Nest Structures		Outcomes:
Inputs:	Outputs:	TE: %
\$2 1260 funds(\$K)	# bird nest structures erected 50	WF: 95%
\$5 Other funds(\$K)	# bird nest structures maintained 100	OMB: 5%
\$7 Total funds(\$K)		HEC: %
0 1260 Staff Days		IAF: %
40 Other Staff Days		SDA: %
40 Total Staff Days		RFW: %
128 Volunteer Hours		PED: %
		PRC: %

4.e. Pest, Predator & Exotic Animal Control		Outcomes:
Inputs:	Outputs:	TE: %
\$5 1260 funds(\$K)	# mammals removed 44	WF: %
Other funds(\$K)	# birds removed 0	OMB: %
\$5 Total funds(\$K)	# reptiles/amphibians removed 0	HEC: 100%
15 1260 Staff Days	# exlusionary fenced areas maint. 0	IAF: %
0 Other Staff Days	# acres treated 0	SDA: %
15 Total Staff Days		RFW: %
19 Volunteer Hours		PED: %
		PRC: %

The Refuge continues to remove whitetail deer to maintain a healthy population.

The Refuge goal is to maintain a population of whitetail deer at a density of 15-25 deer per square mile. We work in partnership with local police departments and the State Department of Natural Resources to achive this goal.

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COORDINATION ACTIVITIES

5.a. Interagency Coordination

Inputs:		Outputs:		Outcomes:
\$101	1260 funds(\$K)	# acres affected	4200	TE: %
	Other funds(\$K)	% effort for uplands	45	WF: 20%
\$101	Total funds(\$K)	% effort for wetlands		OMB: 10%
450	1260 Staff Days	% effort for deepwater/riverine	10	HEC: 20%
0	Other Staff Days			IAF: %
450	Total Staff Days			SDA: %
	Volunteer Hours			RFW: 20%
				PED: 10%
				PRC: 20%

The Fish and Wildlife Service entered into a partnership with Minnesota Waterfowl Association (MWA) and the Natural Resource Conservation Service (NRCS) to deliver the Wetland Reserve Program (WRP). Minnesota Valley NWR will house two of the three MWA biologists who will help to clean up the backlog of maintenance and restoration on WRP easements. Once this occurs the biologists will be able to find new easements for funding. This partnership provides an excellent opportunity to restore wetlands and prairie.

5.b. Tribal Coordination

Inputs:		Outputs:		Outcomes:
\$1	1260 funds(\$K)	# acres affected	150	TE: %
\$20	Other funds(\$K)	% effort for uplands	100	WF: 15%
\$21	Total funds(\$K)	% effort for wetlands		OMB: %
5	1260 Staff Days	% effort for deepwater/riverine		HEC: 75%
0	Other Staff Days			IAF: %
5	Total Staff Days			SDA: %
	Volunteer Hours			RFW: 10%
				PED: %
				PRC: %

A 150 acre prairie was restored on the Upper Sioux Reservation through North American Wetland Conservation Act funding. The Minnesota River III grant which included many other restoration projects was written and coordinated by the Refuge.

The Red Lake Nation continued to be a partner in the Refuge Youth Fishing Day event which provides a fishing education for inner city youth.

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Refuge staff continued to provide technical advice to many private landowners.

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RESOURCE PROTECTION

6.a. Law Enforcement			Outcomes:
Inputs:	Outputs:		
\$215 1260 funds(\$K)	# incidents documented	318	TE: %
Other funds(\$K)	# NOVs & State citations issued	97	WF: 40%
\$215 Total funds(\$K)	# cases assisted	5	OMB: 10%
420 1260 Staff Days	# miles of boundary posted/maint.		HEC: %
0 Other Staff Days			IAF: %
420 Total Staff Days			SDA: %
Volunteer Hours			RFW: 20%
			PED: 10%
			PRC: 20%

Purchase of a snowmobile enabled Refuge officers to be much more effective in enforcing trespass violations. There were 13 citations issued and over 20 warnings issued throughout the winter season. Refuge Officers also worked to reduce vandalism and dumping on the Refuge through patrols and coordination with other agencies. An extra effort was made this year to repair vandalized gates, kiosks and structures quickly in an effort to reduce further damage.

6.b. Permits & Economic Use Management			Outcomes:
Inputs:	Outputs:		
\$10 1260 funds(\$K)	# permits issued	17	TE: %
\$0 Other funds(\$K)	# special uses reviewed	0	WF: 20%
\$10 Total funds(\$K)			OMB: 10%
15 1260 Staff Days			HEC: 20%
0 Other Staff Days			IAF: %
15 Total Staff Days			SDA: %
Volunteer Hours			RFW: 30%
			PED: 10%
			PRC: 10%

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6.c. Contaminant Investigations		Outcomes:
Inputs:	Outputs:	TE: %
\$4 1260 funds(\$K)	# investigations underway 2	WF: %
Other funds(\$K)	# investigations completed 0	OMB: %
\$4 Total funds(\$K)	# water quality studies underway 3	HEC: 100%
5 1260 Staff Days	# air quality studies underway 0	IAF: %
0 Other Staff Days		SDA: %
5 Total Staff Days		RFW: %
Volunteer Hours		PED: %
		PRC: %

A fish kill was documented at the Skimmer and Hog Back Ponds of the Long Meadow Lake Unit on March 1. Refuge staff noted dead carp, minnows, and frogs along the edges of both ponds. The exact cause has not been determined however storm water runoff appears to have some connection. The Skimmer pond receives stormwater runoff from approximately 500 acres of the City of Bloomington.

6.d. Contaminant Cleanup		Outcomes:
Inputs:	Outputs:	TE: %
\$0 1260 funds(\$K)	# cleanups underway 0	WF: %
Other funds(\$K)	# cleanups completed 0	OMB: %
\$0 Total funds(\$K)	# spills responded to 0	HEC: %
0 1260 Staff Days		IAF: %
0 Other Staff Days		SDA: %
0 Total Staff Days		RFW: %
0 Volunteer Hours		PED: %
		PRC: %

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6.e. Water Rights Management			Outcomes:
Inputs:	Outputs:		
\$0 1260 funds(\$K)	% effort for identification	0	TE: %
\$0 Other funds(\$K)	% effort for protection	0	WF: %
\$0 Total funds(\$K)	% effort for quantification	0	OMB: %
0 1260 Staff Days	% effort for adjudication	0	HEC: %
0 Other Staff Days			IAF: %
0 Total Staff Days			SDA: %
0 Volunteer Hours			RFW: %
			PED: %
			PRC: %

6.f. Cultural Resource Management			Outcomes:
Inputs:	Outputs:		
\$0 1260 funds(\$K)	# of investigations conducted	0	TE: %
\$0 Other funds(\$K)	# of sites documented	0	WF: %
\$0 Total funds(\$K)	# of museum property items maint.	0	OMB: %
2 1260 Staff Days			HEC: %
0 Other Staff Days			IAF: %
2 Total Staff Days			SDA: %
0 Volunteer Hours			RFW: %
			PED: %
			PRC: %

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6.g. Land Acquisition Support		Outcomes:
Inputs:	Outputs:	
\$61 1260 funds(\$K)	# of tracts involved 5	TE: %
Other funds(\$K)	# of acres involved 664	WF: 40%
\$61 Total funds(\$K)		OMB: 10%
50 1260 Staff Days		HEC: 30%
75 Other Staff Days		IAF: %
125 Total Staff Days		SDA: %
Volunteer Hours		RFW: 10%
		PED: %
		PRC: 10%

Using Migratory Bird money, the Refuge acquired 324 acres on three tracts for waterfowl production areas in the 13 County Wetland Management District. The Refuge currently manages 19 Waterfowl Production Areas in addition to Refuge lands. Refuge staff are also working with conservation organizations to use the Wetland Reserve Program to acquire important wetland tracts.

PUBLIC EDUCATION AND RECREATION

7.a. Provide Visitor Services		Outcomes:
Inputs:	Outputs:	
\$375 1260 funds(\$K)	% effort for hunting 20	TE: %
Other funds(\$K)	% effort for fishing 5	WF: 10%
\$375 Total funds(\$K)	% effort for wildlife obs/photog. 30	OMB: 5%
1,125 1260 Staff Days	% effort for education/interp. 40	HEC: %
0 Other Staff Days	% effort for non-priority use 5	IAF: %
1,125 Total Staff Days		SDA: %
5,985 Volunteer Hours		RFW: 5%
		PED: 40%
		PRC: 40%

Refuge visitation in FY 00 exceeded 300,000 visitors including over 16,000 stopping at the visitor center. There were also over 10,000 students that participated in the Refuge's environmental education programming. Many of these received staff led programs that highlight the Minnesota River Valley and the wildlife and habitats found there.

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7.b. Outreach		Outcomes:
Inputs:	Outputs:	
\$190 1260 funds(\$K)	# participants (groups) 2000	TE: %
\$7 Other funds(\$K)		WF: %
\$197 Total funds(\$K)	# people viewing off-site exhibits 150000	OMB: %
650 1260 Staff Days	# news releases issued 62	HEC: %
25 Other Staff Days	# TV/radio spots 10	IAF: %
675 Total Staff Days	# of other special events 13	SDA: %
Volunteer Hours		RFW: %
		PED: 75%
		PRC: 25%

The Federal Junior Duck Stamp Program, administered by Minnesota Valley National Wildlife Refuge, soared to new heights this year. Bonnie Latham, a 17 year-old Homeschool youngster from Hastings, MN, won the National Junior Duck Stamp Competition with her award winning acrylic paintings of northern pintails. It was the first time that a Minnesota youngster has won the competition. However, it is the third consecutive year in which Minnesota has won at the national level, evidence of the strength of the overall program.

PLANNING AND ADMINISTRATION

8.a. Comprehensive Conservation Planning		Outcomes:
Inputs:	Outputs:	
\$42 1260 funds(\$K)	% of CCP completed this year 25	TE: 10%
Other funds(\$K)		WF: 10%
\$200 Total funds(\$K)	% completion overall 50	OMB: 10%
160 1260 Staff Days	# of stations covered 1	HEC: 20%
40 Other Staff Days		IAF: %
200 Total Staff Days		SDA: %
0 Volunteer Hours		RFW: 20%
		PED: 10%
		PRC: 10%

The Refuge has completed the first draft of the CCP and is awaiting internal review. The draft was a significant step in the process and one which will be repeated several times before the final draft is available in mid to late 2001.

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8.b. General Administration		Outcomes:
Inputs:	Outputs:	TE: 5%
\$106 1260 funds(\$K)		WF: 15%
Other funds(\$K)	% station funds spent on maint. 15	OMB: 10%
\$106 Total funds(\$K)		HEC: 5%
290 1260 Staff Days		IAF: %
0 Other Staff Days		SDA: %
290 Total Staff Days		RFW: 15%
833 Volunteer Hours		PED: 30%
		PRC: 20%

On September 16, 2000, a mitigation settlement of \$26,090,000, was officially transferred into the account of the Minnesota Valley National Wildlife Refuge Trust, Inc. Activities to be accomplished by the Trust include acquisition of a minimum of 4,090 acres of lands for the Refuge; construction of a visitor and education center on the Rapids Lake Unit of the Refuge or another suitable location; and construction of visitor access, environmental education, and wildlife interpretive facilities as suitable locations approved by the US Fish and

TOTALS: Minnesota Valley NWR			
Inputs:	3,700	1260 Staff Days	Staff FTEs Used: 20.0
\$1,406 1260(\$K)	1,500	Other Staff Days	Volunteer FTEs Used: 4.6
\$384 Other(\$K)	5,200	Total Staff Days	
\$1,790 Total(\$K)	9,557	Volunteer Hours	