Minnesota Valley National Wildlife Refuge

Bloomington, Minnesota
Fiscal Year 1999

Great blue heron. Photo by D. Bohlke.

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Refuge Manager Date

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INTRODUCTION

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

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

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

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

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

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

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

The Refuge also manages a 13-county Wetland Management District (WMD) that extends from Chisago County north of the Twin Cities to Blue Earth County south of Mankato (Map 2). Within the WMD, the Service manages 3,122 acres of Waterfowl Production Areas (WPA's) and over 1,230 acres of wetland, habitat, and Farmers Home Administration (FmHA) easements. Outside of the metro area, the historic land use is intensive agriculture, mainly corn and soybeans. Most 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.

Highlights

- ★ Two river otters were observed on Peterson Pond in November. (1a)
- ★ A total of 273 acres of cropland were restored to native prairie on WPAs located in Blue Earth, Carver, Rice, and Sibley counties. (2a)
- ★ Wetland restoration efforts on Refuge lands focused primarily on WPAs which resulted in 95 wetlands basins restored totaling 76 wetland acres. (2b)
- ★ Refuge private lands biologists provided technical assistance to more than 150 landowners and organizations regarding wetland and prairie restoration projects. (5c)
- ★ The culmination of a 20-year effort to acquire the Kelley tract was finalized in the summer of 1999. The Kelley tract was key to connecting the Visitor Center to the rest of the Long Meadow Lake Unit. Visitors are now able to walk over four miles upstream along the river and connect to the Bass Ponds and Old Cedar trail systems which cover over four miles. (6g)
- ★ Over 1,300 visitors attended 142 interpretive programs offered by Refuge staff and volunteers. Popular programs included Craig Mandel's "Bird Watching Trek" and Ed Moyer's "Sky Dance". (7a)
- ★ The refuge has completed four major steps in the CCP process: pre-planning, initiating public involvement and scoping, reviewing the vision statement and goals, and determining significant issues. (8a)
- ★ The Refuge was very busy during the summer with the addition of the ten temporary employees from a variety of programs including Career Awareness Institute (CAI) , Youth in Natural Resources (YNR), Student Career Experience Program (SCEP), and University of Wisconsin-River Falls student internship program. They completed many maintenance, public use and biology projects on the Refuge. (8b)

Highlights

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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. The growing season is 166 days. Because of this favorable growing season, all crops generally mature before the autumn freeze occurs.

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

Climatological review - 1999

Temperatures (in Farenheit)	Actual	Normal
Average daily maximum	57.2	54.3
Average daily minimum	38.6	35.3
Highest recorded:	99° on July 25th	
Lowest recorded:	-22° on January 9th	
Precipitation (in inches)		
Total for the year	30.56	28.32
Greatest in 24 hours	2.16 on July 26th	
Snowfall (in inches)		
Seasonal total, 1998-99	56.5	56.5
Greatest in 24 hours	12.5 on March 8th	

1

Monitoring and Studies

1.a. Surveys and Censuses

Significant wildlife occurrences at Minnesota Valley NWR in FY1999 are summarized below.

Two river otters were observed on Petersen Pond in November. A grey fox and two kits were seen around the Visitor Center during the summer and early fall. Migrating summer tanagers were observed at the Bass Ponds in May. One adult and one immature Cooper's hawk used the Visitor Center bird feeders as a hunting area in late summer and early fall. In fact, an immature Cooper's hawk was killed after flying into a Visitor Center window. An osprey was sighted at Long Meadow Lake in April.

Bald eagles have nested on the Long Meadow Lake Unit since 1986. We lost the nest and female bald eagle during a spring wind storm in 1998 and although we continue to have eagle activity in the area, a new nest was not located. However, a nest was found at nearby Fort Snelling State Park. Although eagles were incubating at the Wilkie Unit nest located near the great blue heron colony and at the Rapids Lake Unit, no fledglings were confirmed. In addition, we received reports that no activity was seen in the Opus Marsh nest where in 1998, both the female and young perished in a hail storm.

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. One female falcon and two male falcons were fledged from this location in 1999.

Great blue heron production at the Wilkie Unit was an estimated 296 nestlings (Table 1). This estimate is higher than last year's estimate of 178 nestlings (low estimate due to over 450 birds being killed in spring storms), but is much lower than average. The normal production of the colony is 576 nestlings (average production from 1990-1997). Although this year's estimate is lower, it is difficult to assess whether the colony is declining from just one year's data. We will take a closer look at the estimate next year. Although we need to further assess great blue heron production, there has been an increase in the number of other colonial bird species in the colony. The actual number of double-crested cormorants increased from 30 to 43 nestlings, and great egrets increased from 61 to 140 nestlings. In addition, black-crowned night heron nestlings

increased from four to six and two green heron nestlings were observed. Since 1996, we have seen a continual increase of diversity within this colony.

Table 1. Wilkie Great Blue Heron Nestling Production Estimates from 1990-1999.

Survey Year	Winter # of Trees w/Nests	Usable # of Nests	# Nestlings Per Nest	Estimated # of Nests Used	Estimated Nestling Production
1990	276	702	1.25	357	446
1991	230	716	1.40	246	347
1992	233	629	1.78	299	533
1993	233	604	1.89	421	796
1994	459	741	1.59	459	730
1995	301	766	1.42	536	762
1996	291	665	1.60	332	531
1997	247	654	1.35	340	459
1998	291	776	1.30	137	178
1999	251	610	1.50	197	296

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 150 houses with 72.5% of them being considered active houses. Using the data and assumptions of litter size and survival rates, they forecasted the Fall 1999 muskrat population of Blue Lake to be 580 muskrats. If this holds true, this population will be the highest seen since the survey has been conducted (see Table 2). Last year (1998) only 31 houses were counted and the estimated population was 84.

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

	1991	1992	1993	1994	1995	1996	1997	1998	1999
Blue	196	213	133	117	116	49	166	84	580
Fisher	50	204	154	103	90	167	364	No data	No data
Rice	370	11	102	0	39	12	20	No data	No data

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Waterfowl and Waterbirds

The following information reflects trends observed in 1999.

Winter

Black Dog Lake is the most significant waterfowl wintering area on the Refuge due to open water created from warm water discharge of the Black Dog Power Plant. This area is primarily used by mallards with a total of 7,100 observed during the monthly winter counts in 1999. The one time peak count of 4,700 occurred in late December. Canada geese and common mergansers also were present. In January, over 500 Canada geese and six snow geese were observed using the lake.

Spring

Spring migration numbers were hard to determine due to flooding throughout April and May. However, in March we were able to survey all Refuge sites and 18 species were observed. The most abundant species were ring-necked ducks, American coots, scaup, and canvasbacks. Although high water during early May prevented staff from obtaining an accurate count, it appeared migratory species were scarce by mid-May (a few ruddy ducks were present along with Canada geese, mallards and wood ducks).

Summer

Mallards, wood ducks, Canada geese, and occasionally blue-winged teal nest on the Refuge. The only large concentration of birds was on Big Rice Lake near the hunting blind. In late August, 1,000 blue-winged teal were observed on this lake. We continue to observe a lot of great blue heron and great egret feeding activity on Rice Lake in late August.

Fall

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 (11 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 3rd (over 1,700 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 over by December 1st. It is also important to note that an injured trumpeter swan was rescued from Chaska Lake in November.

Gypsy Moths

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

1.b. Studies and Investigations

Biologists from Northern States Power Company (NSP) completed a two-year study of the fish, invertebrate, and plant communities of Black Dog Lake as part of their discharge permit requirements. The Long Meadow Lake Unit was also sampled as a control site. A final copy of the report was given to the Refuge for our records. One notable observation was that northern pike and bowfin were present in Long Meadow Lake in the spring but not in the summer. This may reflect the use of the highly vegetated slough as a spawning and nursery area for that time of year.

Refuge staff have been working with the Minnesota Department of Natural Resources (DNR) on completing habitat cover mapping of each Refuge unit. Staff and volunteers are classifying the habitat according the DNR's Minnesota Land Cover Classification System. Coded maps are being digitized by DNR staff and copies of all the GIS information will be given to the Refuge at the completion of the project.

2

Habitat Restoration

2.a. Wetland Restoration

On-Refuge
Wetland restoration efforts on Refuge lands focused primarily on WPAs. These efforts resulted in 95 wetlands basin restored totaling 76 wetland acres. Focus areas and highlights of this year's work included: 1) restoration of 9 basins for 12 acres at Cobb River WPA in Blue Earth County; 2) restoration of 30 wetlands totaling 38 acres at Perbix WPA in Carver County; 3) restoration of 10 basins for 16 acres at Erin Prairie WPA in Rice County; and 4) restoration of a diverse class of 46 wetland basins encompassing 76 acres on WPAs in Blue Earth, Carver, Rice, and Sibley counties.

Off-Refuge
Through the Partners for Fish and Wildlife program (PFFW), off-refuge restoration work took place on state, county, and private property. The product of these restoration efforts included 44 wetlands totaling over 202 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. These collaborations continue to be the impetus that drives the PFFW 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 PFFW program on private lands in 1999 included: 1) restoration of a 35-acre prairie pothole complex on the Brooks property in Carver County; 2) restoration of a 12-acre wetland complex with 5 basins on the privately owned Oelfke property located in Sibley County, 3) restoration of a 25-acre prairie pothole complex on private property in Sibley County; 4) restoration of six wetlands totaling 17 acres on FmHA tracts in Chisago County; and 5) restoration of 7 basins for 10 acres on Steven's property in Watertown Township, Carver County.

Statutory Authorizations

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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 MET grants. To date, Refuge staff and partners have restored 242 wetlands for more than 700 acres; 29 upland sites to native grass totaling more than 900 acres; and more than 20 riparian corridors via bioengineering techniques totaling more than 10,000 linear feet. The Refuge has also purchased WPAs and easements within these watersheds that have permanently protected over 800 acres of habitat.

Photo 1. Ecklund wetland restoration in Carver County. Photo by M. Malling

2.b. Upland Restoration

On-Refuge

Partnerships with many different clubs and non-governmental organizations contributed more than $50,000 for native prairie restoration. A total of 273 acres of cropland were restored to native prairie on WPAs located in Blue Earth, Carver, Rice, and Sibley counties. Seeding was accomplished by Refuge staff and cooperative agreements with farmers. Native seed composition included the following species, listed in descending order: big bluestem, Canada wild rye, Indian grass, switch grass, little bluestem, and side oats grama. These were seeded in conjunction with more than 30 species of forbs including species such as: compass plant, bergamot, wild garlic,

butterfly weed, vervain, and prairie blazingstar. The native prairie restoration showcase property this year was Erin Prairie WPA in Rice County. Erin Prairie WPA is 130 acres and when combined with the adjacent Lick Wildlife Management Area (WMA) and Cihak FWS Habitat Easement, 350 acres are in permanent protection in this section. This area provides important migration, breeding, nesting, and feeding habitat for waterfowl, shorebirds, and other wildlife. In addition, this complex provides important water quality benefits to the Sand Creek in the Lower Minnesota River Watershed.

Photo 2. Native grass restoration at Perbix WPA. Photo by M. Malling.

Off-Refuge

Refuge staff, through the PFFW program, provided seed and technical assistance to more than 10 private landowners. Over 73 acres of native grasses were restored on private land in Carver, Rice, and Sibley counties. Planting was accomplished utilizing a native grass drill for fluffy grasses while broadcasting more than 30 species of forbs. This forb component promotes more diversity and habitat for a host of species including songbirds and insects. Showcase properties this year included the Luskey and Oelfke tracts in Sibley County. These tracts located in the High Island Watershed, provide important water quality benefits, critical wildlife habitat for a host of species, and strengthen and foster new partnerships with the local community.

Photo 3. Conservation Reserve Program restoration in Rice County. Photo by M. Malling.

2.c. Deepwater/Riverine Restoration

Off-Refuge

Riparian Restoration

Riparian work focused on more than 15 sites totaling 10,200 linear feet. These privately-held, eroded corridors are located along various riparian corridors including Bevens Creek, Carver Creek, Minneopa Creek and the LeSueur 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 Soil and Water Conservation Districts (SWCD), NRCS, watershed districts, and private landowners was instrumental for accomplishing these projects. Many of the projects were accomplished through cooperative agreements between Refuge and SWCD offices. Funds were generated by FWS through grants and contributed funds from local conservation clubs. To date, Minnesota Valley NWR and its partners have completed 22 riparian restorations totaling over 119 acres in the 13-county Wetland Management District.

Photo 4. Russell riparian project before restoration (note eroding banks). Photo by M. Malling.

Photo 5. Russell riparian project during restoration (note electrified waterway). Photo by M. Malling

3

Habitat Management

3.a. Water Level Management

Attempts to do early spring drawdowns on Fisher, Rice and Rapids Lake were again hampered by Minnesota River flooding. A partial, mid-summer drawdown was accomplished on Rice Lake with limited response by vegetation. This was the first year of management since completion of the Corp of Engineers Environmental Management Program project to facilitate drawdowns. Fisher Lake continues to respond to partial spring drawdowns from the last two years. Wild rice is spreading and waterfowl use was relatively high throughout the year. Rapids Lake water levels were held high throughout the fall waterfowl migration in order to flood the basin edge where food production was most successful. No active management was conducted on Blue Lake, however, and work is progressing on the construction plans for new water control structures. Dike repair was performed on Rapids Lake and Continental Grain Marsh. Both projects will help to keep small river bounces out of the wetlands. In addition, two water control structures on Fisher Lake were upgraded.

3.b. Moist Soil Management

No active management was conducted on moist soil units. Fisher, Chaska, and Old Cedar Units are scheduled for rehabilitation in 2000. Peterson Pond greentree reservoir was flooded in September but due to an abnormally dry fall it did not retain the amount of water we had hoped for.

3.c. Graze/Mow/Hay

Nothing to report

3.d. Farming

The Eichten FmHA easement and Perbix WPA were farmed through cooperative agreements to prepare the areas for native grass seeding in the 2000 field season.

3.e. Forest Management

Cedar trees were removed from the Rapids Lake Unit as part of an oak savannah restoration project. In addition, woody vegetation was removed with a hydroaxe from the Louisville Swamp Unit oak savanna restoration area. The oak savanna restoration site is on an intensive tree removal and burning schedule in an effort to encourage native grasses and forbs to repopulate the understory of the oaks. When completed, the Louisville site will cover over 50 acres and the Rapids Lake site will cover 200 acres.

Refuge staff met with staff from the DNR Forestry Division to develop plans for restoring 150 acres of former agricultural land in the Refuge to native hardwood forest. The majority of the land, 141 acres, is within the floodplain. The fields will be planted in widely spaced modules of seedling oak species. The modules will encompass approximately 40% of the field. The area between the modules, 60% of the land base, will be allowed to revert through natural plant succession. The long term result will hopefully be a hardwood floodplain forest with a wide diversity of native tree species.

A nine-acre upland field on the Rapids Lake Unit will be planted to a variety of native hardwood tree and shrub species.

Annual plantings of approximately 25 acres of former agricultural lands within the floodplain will be conducted by Refuge volunteers beginning in the late spring or early summer of the year 2000 until all fields are complete. Partners in funding include a private forestry supply business that will provide mats and tubes at cost.

3.f. Fire Management

The 1999 prescribed burning season was characterized by uncooperative winds. This limited our burning to four Refuge units and two WPAs for a total of 38 and 78 acres, respectively. Acreage included seeded natives, grasses, oak savanna and a reforestation project. In the spirit of partnerships, the Refuge fourteen member crew assisted the DNR Parks division with burns on state park lands in the Minnesota River Valley. The partnership has proven to be an asset for the Refuge and the State. New partnerships continue to be forged to take advantage of limited resources and a narrow window of opportunity for spring burning.

3.g. Pest Plant Control

With the continued spread of leafy spurge, Canada thistle, and purple loosestrife on the Refuge, we continue to utilize as many tools as possible to give native plants a competitive edge. Aphthona sp. beetles continue to thrive on leafy spurge sites. Pam Deerwood and staff from the United States Department of Agriculture continue to monitor the release of beetles to control leafy spurge on the Refuge. Beetles have been released on the Upgrala, Bloomington Ferry, and Wilkie units. Most species of beetles are thriving on the Upgrala sites, and we hope to collect

from these sites next year and redistribute to other Refuge areas that are infested with leafy spurge.

We continued using Galleruccella sp. beetles as a biological control for purple loosestrife. We released 5,040 beetles at three Refuge sites (Hogback Pond, Youth Fishing Pond, and Cedar Pond). Previously released beetles appear to be overwintering at our other release locations, however, we have not seen a dramatic decrease in the coverage of purple loosestrife at these sites. We do observe leaf damage to the plants, and will continue to monitor the progress of these beetles according to the protocol outlined by Cornell University. We will also work with State weed control specialists to determine whether we need to supplement our current release sites with additional beetles.

On weed infested areas of the Refuge and WMD that are not being treated with biological methods we continue to use mechanical and chemical methods to control the weed populations. In FY 99 we mowed 470 acres of weeds and the purchase of a truck mounted spray unit enabled us to spray 77 acres of Canada thistle.

4

Fish and Wildlife Management

4.a. Bird Banding

Nothing to report

4.b. Disease Monitoring and Treatment

Nothing to report

4.c. Reintroductions

Nothing to report

4.d. Nest Structures

A component of the private lands staff efforts is the distribution of wood duck and bluebird boxes to private land owners. An estimated 40 wood duck boxes, 20 bluebird boxes, and 20 nest cylinders were erected on privately held 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, Minnesota Waterfowl Association and the Boy Scouts, additionally, have worked together to construct 50 mallard nesting cylinders to be placed on WPAs and other private land restorations.

Refuge staff efforts are being initiated and implemented to enhance partnerships with local conservation and service organizations encouraging them to do supportive maintenance on WPAs regionally. An Adopt-a-WPA program will be initiated with two local clubs in 2000.

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

A special use permit was issued to Dr. Jim Cooper from the University of Minnesota for the removal of Canada geese in the Bass Ponds area of the Refuge. The purpose of this action is to reduce Canada goose population within the vicinity of the Twin Cities International Airport however, only one goose was removed by Dr. Cooper this year. Metro Mosquito Control was permitted to sample Refuge waters for mosquito larvae.

The Refuge continued to manage its population of whitetail deer in cooperation with the Minnesota Department of Natural Resources. In FY99 the pre-sharpshooting figures reflected approximately 24 deer per square mile. In order to maintain the recommended figure of 15 to 25 animals per square mile, the DNR issued the Refuge a permit to remove 45 deer. With the assistance of state and local law enforcement officers, Refuge officers removed 44 animals (28 female and 16 male) from the Bloomington and Burnsville sides of the Minnesota River.

5

Coordination Activities

5.a. Interagency Coordination

Refuge staff worked with staff from the Metropolitan Council's Environmental Services Division on the construction of a spillway on the Black Dog Trail near Black Dog Park. The Refuge provided the materials and the Council conducted the installation. The trail is the top of a dike that serves as a cover for a sewer line, a pedestrian trail, and holds the water of 10 acres of wetlands. The dike/trail had washed out several times in recent years and threatened the integrity of the sewer line during the most recent large storm event.

The Lower Minnesota Watershed District began installing a bank stabilization demonstration project on the Minnesota River during the year. Seven different erosion control techniques, including (bio-engineering) were installed on several hundred feet of baldly eroded river bank adjacent to the Black Dog Unit. The various techniques will be evaluated to assess their effectiveness over time.

Photo 6. Bank stabilization on the Minnesota River. Photo by T. Schreiner.

5.b. Tribal Coordination

The Red Lake Nation assisted Refuge staff with the annual Youth Fishing day event in June. They sent youth to participate in the event and provided the lunch as well.

5.c. Private Land Activities

Refuge private lands biologists provided technical assistance to more than 150 landowners and organizations regarding wetland and prairie restoration projects. More than 55 private landowners signed wildlife management agreements resulting in the restoration of 203 wetland acres. The private lands staff has contributed to Refuge and statewide efforts by providing educational assistance to the station's Environmental Education program attending public meetings, authoring more than ten grant applications, presenting topics to various groups, and assisting organizations in education and restoration of the Minnesota River Watershed. The staff plays an active part in working with other agencies including participating in 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.

6

Resource Protection

6.a. Law Enforcement

Law enforcement issues continue to be a challenge for Refuge staff. Of the 114 incidents recorded in FY99, 81 citations were issued for hunting, fishing, and drug type violations including possession of marijuana, crack cocaine and hashish. Fishing violations, however, decreased dramatically and we are hopeful that this trend will continue.

The most notable incident occurred on January 8, 1999 when Refuge Officer Hjelmgren contacted an individual who was sitting in his vehicle in the Old Cedar Parking lot. Officer Hjelmgren believed that the individual was in the process of cleaning his marijuana. An investigation revealed the suspect to be in possession of approximately two ounces of marijuana, a pistol grip shotgun, and a pipe bomb which was discovered under the drivers seat. The Bloomington bomb squad was called and utilizing a robot, removed the pipe bomb from the vehicle. The pipe bomb was destroyed on the scene and the suspect was arrested and charged by the Bloomington Police Department.

FY99 was also the first year that statistics were kept on the continuing problems associated with dumping and vandalism. The cost of removing dumped items from the Refuge was over $8,300 and costs associated with vandalism exceeded $6,600. In addition to these costs, during 1999 vandals started a contractor's backhoe on the Rapids Lake Unit that was being used for some gas line right of way work. The key had been left in the ignition by the contractor for the gas company. The vandals proceeded to use the backhoe to cause about $15,000 worth of damage to the Unit, ripping doors off two Refuge pole barns, smashing in parts of the pole barns and digging random holes in the gravel road in the maintenance area. Fortunately nothing was stolen and the contractor's insurance paid for the repairs.

Other continuing problems include dogs off leash, the use of mountain bikes on closed trails and resource collection. The dog off leash problems appears to have decreased over the past year due to increased warnings and awareness of all Refuge staff. The mountain bike issue is being addressed within the Comprehensive Conservation Plan meetings.

Recommendations & Conclusions

Non-Enforcement

Low enforcement is now commonly seen as a solution for the large number of [illegible] reported in [illegible] elections were based on hunting, fishing, and dog laws. Hunters are [illegible] conservation of resources, wildlife and habitat. Fishing violations [illegible] and manageability and we are forced that this trend will continue.

The most notable incident occurred on January 31, 1990 when Fishery Officer Hallington [illegible] an individual who was setting in the Gold Creek Fishing [illegible]. Hallington [illegible] that the individual was in the process of [illegible] an unauthorized [illegible] consented the suspect to be in possession of approximately two ounces of marijuana, a plated [illegible] shotgun and a pipe bomb which was discovered under the drivers seat. The Hallington [illegible] arrested was called and arrived to relieve [illegible] the pipe bomb from the vehicle. The pipe bomb was [illegible] on the scene and its support was arrested and charged in the Hallington [illegible] Department.

[illegible] was also the first year that statistics were kept on the snowmobile problem [illegible] damaging and vandalism. The cost of repairing damaged items from the Hedge was over $[illegible] [illegible] vandals started a snowmobile [illegible] on the Kapsik Lake. The ice was being used for some [illegible] sled [illegible]. The [illegible] in the lighting in the campground [illegible] [illegible] [illegible] Hedge park. [illegible] in park [illegible] and [illegible] [illegible] the park [illegible] the campground area. [illegible] and the [illegible] [illegible] [illegible].

Other monitoring problems include [illegible] off-leash, the use of snowmobile [illegible] [illegible] [illegible] collection. The dog off-leash problems appears to have decreased over the past year due to increased monitoring and enforcement of [illegible]. The snowmobile problem [illegible] is being addressed within the Gang Lake [illegible] Committee [illegible] meetings.

Photo 7. Vandalism to storage building at Rapids Lake Unit. Photo by R. Schultz

6.b. Permits and Economic Use Management

A Right of Way (ROW) permit was granted to the City of Arden Hills to allow an outlet pipe from a storm sewer treatment pond to Round Lake. The project is part of a project to widen Trunk Highway 96 along the north boundary of the Round Lake Unit.

A ROW permit was granted to the Metropolitan Council Environmental Services Division for a pipe outlet to Blue Lake on the Wilkie Unit. The pipe will outlet ground water which needs to be pumped to keep the lower areas of the Blue Lake Waste Water Treatment Plant from flooding. The project is being done in anticipation of a projected 5-10 foot increase in the average water table in the area of the plant when the pumping of groundwater from a nearby gravel pit is discontinued. The Council agreed to upgrade existing water control structures on Fisher and Blue Lakes to handle the increased flow more efficiently. Water table levels are projected to permanently raise from 1-24 inches within over 40% of the Wilkie Unit by the summer of 2000. This rise is expected to improve wetland habitat conditions, especially wet meadow, in the unit by more closely resembling historic ground water levels.

Special Use Permits Issued

Metro Mosquito Control District	Sample waters for larvae
Mike Tucker	Nuisance Beaver Control
Mike Tucker	Nuisance Beaver Control
Tom Belter	Building Removal Redhead WPA
Larry Mueller	Plant Shrubs Perbix WPA
Joe Luskey	Plant Food Plot Mud Lake WPA
WSB and Associates	River Bank Stabilization
John Strahm	Filming at Bass Ponds
Dr. Jim Cooper	Remove Nuisance Canada Geese-Bass Ponds
Jim Malec	Filming Wood Ducks at Wilkie Unit
Dr. Dwain Warner	Wildlife Resource Appraisal- Long Meadow Lake
Glenn Miller	Minnegasco Pipeline Repair
Patrick Moore	Capable Partners - Upgrala Hunt
Dr. Poly Fry	Filming at Louiseville Swamp and Rapids Lake unit
Jason Howard	Conduct Predator Survey
Ollie Sieberg	Use of ATV for disabled hunting on Cobb WPA
Fred Campbell	Gather soil and water quality data-Old Freeway Landfill.
Joe Grove	Install Spillway on Black Dog South Trail
Roger Anderson	Access across Rapid Lake Unit
Travis Durkin	Burger Brothers - Demonstrate canoeing skills

Economic Use Management

The following cooperative farming agreements were issued to private citizens to plant row crops on agricultural fields on Refuge managed lands. These agreements were issued to prepare seed beds for grass seeding.

Kevin Lundquist	Rapids Lake unit	12 ac. field corn	55 acres soybeans
Ed Eichten	Longnecker FmHA	7 ac. soybeans	

6.c. Contaminant Investigation

Approximately 40 gallons of cyclohexane were allowed to reach a storm sewer inlet that outlets into Hogback Pond within the Bass Ponds area. The spill occurred early on August 26, 1999 during a fire in a chemical storage area at the VTC facility located on Old Shakopee Road.

Refuge staff attended a meeting with VTC and city officials to review the incident and recommend procedural changes that would alleviate chemicals reaching a storm sewer inlet if a similar event occurs in the future. Refuge staff were surprised to find the chemical storage area had no containment facilities even though it was recently constructed. Refuge staff encouraged VTC and the city to work out something that would contain the materials into the future. No adverse effects to wildlife were detected in Hogback Pond.

Baseline data for Long Meadow and Black Dog Lakes was entered into the CAP (Contaminant Assessment Process) data base during the year. The information should provide a basis for further evaluation of potential contaminant problems. The assessment is based on documenting existing information for watersheds and air sheds in the target area to evaluate potential contaminant-related impacts to resources of primary interest to the land manager.

6.d. Contaminant Cleanup

During 1999, work continued on the cleanup of the recently purchase Mittelstad Farms (Rapids Lake Unit) with the removal of scrap metal, leftover hazardous materials such as paints, chemicals, pesticides, herbicides and everything else that accumulates over 50 years of farming. The contracting process began to remove building foundations and 3 wells were sealed on the unit. Approximately 10 tons of scrap metal was consolidated for removal under the contract.

One building site was cleaned up on the Redhead WPA. After testing was completed for asbestos and none found the Green Isle Fire Department assisted by burning down an old barn on the WPA. Foundations were removed and a parking lot will be installed in 2000.

A contract for the cleanup of the Boe property including building removal, well sealing and foundation removal was put out for bids and work was completed in November of 1999.

6.e. Water Rights Management

Nothing to report

6.f. Cultural Resource Management

As part of the CCP Process, the Minnesota Valley National Wildlife Refuge's Cultural Resource Management Plan (CRMP) was completed in June 1999 by Anthony Godfrey of U. S. West Research, Inc. It acts both as an overall cultural resources planning and long term management document. Besides the standard summary of prior studies and copies of pertinent laws, the CRMP will help us make future resource management decisions. It will also help us develop a Programmatic Agreement between the Refuge and the State Historic Preservation Officer.

6.g. Land Acquisition Support

The highlight of the year was the culmination of a 20-year effort to acquire the Kelley tract which is located near the Visitor Center. The Kelley tract was key to connecting the Visitor Center to the rest of the Long Meadow Lake Unit. Visitors are now able to walk over four miles upstream along the river and connect to the Bass Ponds and Old Cedar trail systems. Before the acquisition, visitors were only able to do a 1/4 mile Hillside Loop Trail. The Conservation Fund and the Friends of the Minnesota Valley assisted with the purchase of the tract.

During the year, two WPAs were acquired including the 400-acre Howard Farm WPA in Blue Earth County and the 137-acre Dodge Center Creek WPA in Steele County. The Refuge is also working closely with two local Minnesota Pheasants chapters who are in the process of buying two tracts of land totaling 274 acres which will be donated to the Refuge as WPAs.

The Refuge also purchased a 57-acre habitat easement that protects several wetlands restored through the Partners for Fish and Wildlife Program. During the year, several other easements and WPA offers totaling 637 acres were signed and will be accepted during FY2000.

6.h. Threats and Conflicts

A variety of completed or proposed projects during the reporting period in or near the Lower Minnesota River Valley potentially threaten the biological and aesthetic values of the Refuge. These projects are:

Scott County Highway 27
Yet another round of interagency and public meetings concerning the construction of Scott County Highway 27 through the Savage Fen Wetland Complex was initiated during 1999. A final "no build decision" was announced by the DNR in March of 1998 for the preferred alignment that would use the existing haul road from the sand pit on the bluff. The City of Savage was awarded a Legislative Commission on Minnesota Resources grant to study additional alternative alignments. Efforts continue to work with citizens and officials of private and public entities to get consensus on a holistic approach to the management of the wetland complex in the future. The Refuge has over 200 acres of fee title lands within the complex.

Stormwater Runoff
Refuge staff met with City of Bloomington officials in an attempt to resolve the issue of adverse effects from storm water runoff to Refuge wetlands. Storm sewers convey solid waste, contaminated sediments and large amounts of water to wetlands in the Bass Ponds area of the Long Meadow Lake Unit. City officials agreed to attempt to address the issue of trash near the outfall of the storm sewers in the short term. Negotiations continue to solve the more damaging long term water quality and quantity problems through a process called Alternative Urban Review Assessment.

[illegible] Legislative Support

[illegible]

[illegible]

[illegible]

[illegible] Trends and Conditions

[illegible]

Short Growth Alternatives

[illegible]

Environmental Impacts

[illegible]

[illegible] Water Supply

[illegible]

Golf Improvement Center
During 1998, Service staff conferred with officials from the City of Chanhassen, the DNR, and the developers of a 40-acre Golf Improvement Center proposed to be constructed adjacent to the Upgrala Unit. Night lighting, ball nets and point runoff were the major concerns. The project was approved but without night lighting and other amenities desired by the developer. Refuge staff informed city officials that this kind of development is inconsistent with the "spirit" of the enabling legislation for the Refuge and State Recreation Area. During 1999, the City approved all the amenities when the owners went back asking for the improvements that were denied in the original application. Refuge staff provided comments recommending the City uphold the original conditions.

Amphitheaters
Three proposals for the construction of 20,000-seat amphitheaters were filed during 1999. Two are proposed next to the Refuge and all three are to be located either in or on the bluff of the Lower Minnesota River Valley. Both proposals remain viable, but the one gathering the most attention is near the Louisville Swamp Unit. Preliminary review indicates potential for adverse impacts such as traffic congestion and noise and ground water contamination. There has been a groundswell of local support against the project. Refuge staff provided a position statement at the request of a local homeowners association. Refuge staff are awaiting the release of a draft environmental assessment before making official statements.

Blue Lake Wastewater Treatment Plant Ground Water Relief Project
This plant is surrounded on two sides by the Wilkie Unit. Plans are to install large capacity pumps to keep the treatment plant facilities from flooding and to pump water to Blue Lake. Refuge concerns include pumping effects on Fisher and Blue Lakes. The Council agreed to rehabilitate or replace water control structures on the two lakes to more efficiently handle the increased flow. The increased water table is expected to be beneficial to the establishment and maintenance of wet meadow and other non-depressional wetland communities in the Unit.

Flying Cloud Airport Expansion
The project proposed by the Metropolitan Airport Commission will significantly increase the number of jet flights over the Upgrala Unit of the Refuge. Concerns include the increased noise factor for Refuge users and wildlife as well as an increased risk of bird strikes. Negotiations continue as of this writing.

Minneapolis - St. Paul Airport Expansion
This project proposed by the Metropolitan Airports Commission (MAC) involves the construction of a new north-south runway. The flight path will extend directly over the Bass Ponds, the focus area for environmental education and interpretation as well as public use on the Refuge. Numerous meetings were held with MAC and the Federal Aviation Agency (FAA) during 1998 to address the compensation for the loss of the constructive use of the most vital area on the Refuge. A final settlement of approximately $26 million was granted to the Service for the loss of constructive use of the Bass Ponds, Long Meadow and Black Dog Units from severe and

repeated noise from low level flight by large passenger jets. Negotiations continue for a settlement for other related losses.

Plans are to develop a Resource Protection Plan which will set guidelines to be used to more effectively identify, track and manage the threats and conflicts to Refuge resources over the long term. Our strategy in the past has been to react to threats as they occur. We hope to develop a plan whereby the Refuge can be proactive in dealing with threats to Refuge lands. A working group formed during the development of the Comprehensive Conservation Plan (CCP) has made recommendations on how to develop this plan.

Mosquito Control

During late summer, the Metropolitan Mosquito Control District (MMCD) requested to treat a portion of the Chaska Unit with adulticides after a case of LaCrosse Encephalitis was reported and verified near the Unit. A long standing Refuge policy restricts any type of treatment, except in the case of an emergency where there is a real and imminent threat to human health. Consultation with officials from the Minnesota Health Department confirmed that the breeding site for the disease bearing mosquito was undoubtedly a dump of tires adjacent to the home of the infected child. Based on this information, Refuge management prohibited treatment of Refuge lands.

After some unsuccessful political maneuvering by mosquito district officials, meetings were held and it was agreed that the Refuge would issue a permit to allow MMCD personnel to survey the forest areas on the Chaska Unit. The area within ½ mile of the initial infection site were sampled for the presence of natural breeding cavities used by the disease carrying mosquitos. Any activity to eliminate discovered cavities would need the approval of the Refuge manager.

Also during late summer, MMCD personnel treated portions of Fort Snelling State Park without any notification. This event prompted state officials to present a legislation amendment that would require approval to treat state lands. This amendment was approved for a two year period.

Mountain Biking

Presently, biking is allowed on all Refuge areas except specific trails constructed on erosion prone and/or wetland soils. Refuge use by mountain bikes has steadily increased in recent years. The 1997 Refuge Improvement Act clearly limits appropriate public use on Refuges to wildlife-dependent uses only. This has raised concern among the mountain biking community. Organized mountain biking groups were well represented and very vocal during public meetings held recently as part of the Comprehensive Conservation Planning process. The Refuge manager attended an informational meeting for biking groups at a local outdoor sports retail outlet.

There have been several reported near miss collisions reported between hikers and mountain bikers on Refuge trails and some are exhibiting gully erosion because of ruts from the bike tire treads. A complete ban on biking on this Refuge is not possible because state legislation established a State Trail which, when completed, will traverse three Refuge units. At a minimum, the Refuge needs to provide access from our trail heads to the State Trail.

Photo 8. Erosion on Bluff Trail.
Photo by R. Schultz.

7

Public Education and Recreation

7.a. Provide Visitor Services

Approximately 221,000 people visited the Refuge and 17,600 visited the Visitor Center this year. 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. 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. The Refuge offers all of the Big Six recreational opportunities which are 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 Upgrala 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. In addition, all of the WPAs and the Rapids Lake Unit are open to public hunting in accordance with state hunting regulations. A total of 45,192 visits were made to the Refuge in pursuit of wildlife-dependent recreation. Hunting, fishing and trapping accounted for 22,312 of the visits.

Young Waterfowlers Program

A total of 15 youth and 14 mentors participated in the Young Waterfowlers Program, a cooperative program between the Refuge and the Minnesota Waterfowl Association. The 20 hour program teaches youth how to hunt waterfowl safely and ethically. Other than the actual hunt, the virtual hunter trainer system was the favorite activity for the youth. The large 8'x10' screen with interactive hunting videos provides excellent training for the youth. Youth also received instruction on duck and goose calling, firearms safety and shooting, and waterfowl biology and identification. Fisher, Blue, Long Meadow, and Chaska Lakes were used for the youth hunt in late September. All mentors and youth reported excellent hunting with several limits harvested, including Canada geese.

Public Education and Participation

The Provide Information [illegible]

[illegible]

Training

[illegible]

Training Workshop Programs

[illegible]

[illegible] Public [illegible]

A wild game recognition dinner was held on January 23, 1999 for the participants and supporters of the Young Waterfowlers Program class of 1998. A total of 60 people attended the event and dined on a variety of dishes including bear, antelope, grouse, and duck.

A Firearms Training and Hunter Education course was sponsored by the Refuge and held during August at the Visitor Center. Refuge staff participated as instructors after becoming certified by the DNR. Since a firearms safety certificate is required in order to participate in the Young Waterfowlers program, we offered the course to increase participation in the waterfowl program.

Waterfowl Hunting for Sportsmen and Sportswomen With Disabilities
Another successful year was realized in the hunting programs for people with disabilities. Eleven physically challenged and six able-bodied people participated in 11 hunts harvesting 32 ducks and 19 geese.

The Capable Partners organization was granted a special use permit which included guidelines for conducting the hunt. The Refuge provided and maintained the facilities which included two blinds, a boat dock and an access road. Capable Partners handled reservations and conducted the hunts. The facility is located on the north shore of Rice Lake within the Upgrala Unit. Participants in the program also joined in the festivities during the Young Waterfowler wild game recognition dinner held during January.

Fishing

The Refuge offers a variety of fishing opportunities for anglers. The most popular spots 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 to try their luck. Over the past few years there has been a significant increase in the use of the Refuge for fishing by immigrants. Hispanics, in particular, are the most common type of fisherperson found on the banks of the river in addition to Russians and Hmong. Refuge officers have made it a point to inform the users of the Minnesota River about the dangers of eating the fish that are caught in those areas. Spanish fishing regulations as well as consumption advisories are available to assist us with informing the public.

Youth Fishing Day
The Refuge hosted its seventh annual Youth Fishing Day at the Bass Ponds for inner city and community youth. Over 650 people attended the event including 200 inner-city youth and kids involved with The Golden Eagle program and Red Lake Nation. Twenty five experts and volunteers educated the participants on proper and ethical fishing techniques. Many partners provided funds to make this a successful event. A walleye lunch was provided by Red Lake Nation. Each child from the inner city also took home educational literature and their own rod and reel.

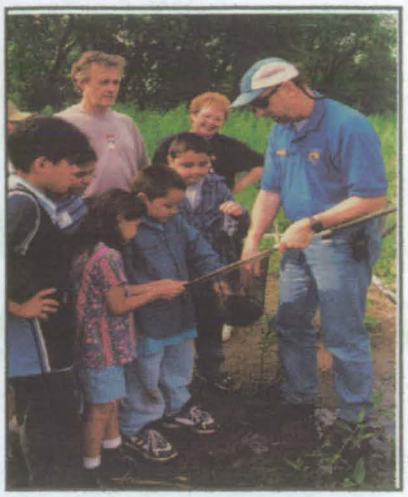

Photo 9. A captive audience for Fish Day. Photo by R. Schultz.

Wildlife Observation and Photography

The Refuge is a popular destination for bird watchers from all over the metro area. The Bass Ponds and Old Cedar avenue are two areas that receive heavy use especially during the migration periods. The Minnesota Valley Audubon chapter meets at the Visitor Center once a month in addition to birding on the various units.

Photographer Dr. Scott Sharkey is one of the original contributors to the twelve minute slide show that has been featured in the Visitor Center auditorium for ten years. During the development of the new Refuge brochure, Dr. Sharkey opened his personal collection of approximately ten thousand slides to provide compelling wildlife photos for it. He recently premiered an incredible show which was comprised entirely of sides taken over a seven year period around Opus Marsh on the Bloomington Ferry Unit. His surreal slides of nesting least bittern chicks provided irrefutable evidence of that species' nesting status on the Refuge. Dr. Sharkey's scientific background, photographic competence, and articulate presentations place him in a unique category. In addition to serving on the Friends of the Minnesota Valley board and listing his property on the heritage registry, Dr. Sharkey is the Refuge's first volunteer marsh warden.

Environmental Education and Interpretation
Approximately 12,000 students/teachers, from pre-school to high school, attended environmental education programs on the Refuge. Staff hosted and/or participated in ten educator workshops reaching approximately 400 people. Over 1,300 visitors attended 142 interpretive programs offered by Refuge staff and volunteers. Popular programs were Craig Mandel's "Bird Watching Trek" and Ed Moyer's "Sky Dance".

Preschool Program
Our Preschool Program served over 2,400 children along with more than 700 adults. Program topics include: migration, habitat, tracks, squirrels, and trees.

K-3 Curriculum
The newest addition to the Environmental Education programming offers teachers five days of activities, with one activity involving an on-site visit to the Refuge. Three curriculum, Insects, Birds, and Habitats, were developed by Kathryn Cassem, Park Ranger.

Partnership Schools
Partnership between the Refuge and our cultural diversity schools remain the same. We are trying to encourage more cultural diversity schools to come out to the Refuge and witness the connection with wildlife and habitat in their own backyard. We are happy to have a partnership with the Minnesota School of Environmental Studies (SES), also known as the Zoo School. There are currently eight schools and one Native American Community Center that are involved in the Refuge's partnership school program.

Big River Journey
Over 1,700 students (4th-6th grade) from twenty-one elementary schools participated in the Big River Journey. During the two hour paddle boat trips, students learn about the Mississippi River and it's watershed through six learning stations. Refuge staff and volunteers teach students about the 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 four teacher workshops in February.

State Envirothon
The Refuge hosted the 1999 State Envirothon at the Visitor Center. Over 100 high school students participated in this outdoor and hands-on science competition. Refuge staff prepared and presented at the wildlife station. Other stations included; soils, aquatics/water quality, forestry, and prescribed burning. Peterson/Rushford High School won the competition and advanced to the National Envirothon in California.

Photo 10. Park Ranger Bradley gives instructions at Envirothon. Photo by S. McDonald.

Scouting

The Refuge Explorer Post, now in its 7th year, attracts high school students interested in resource management and attempts to introduce them to worthwhile service projects. In FY 1999, six Eagle Scouts worked on the refuge. Tim Pipkorn built 50 bird feeder kits and 50 kits for bird houses with donated materials and hardware. He then wrote assembly instructions and made an instructional video! Another eagle scout candidate assisted our biologist with predator scent post surveys. More than 300 Boy and Girl Scouts earned Watching Wildlife Patches on the Refuge during the year. Finally, merit badge programs and orientations were given for a variety of scout groups.

Ecommunities

Staff participated in the sixth annual Ecommunity Festival at the Mall of America, October 15th - 16th. This two-day festival teaches kids and adults about recycling and respecting the environment. Refuge staff hosted an activity station on endangered species. Twenty-one organizations and retailers participated in the event, which reached over 4,500 children, parents, and shoppers.

National Wildlife Week

Each year, Refuge staff visit local schools during National Wildlife Week in April. This year, 2,660 students were contacted during the week. The theme of this year's week was "Nature's Web: Keep the Wild Alive". Staff from the Twin Cities Field Office assisted during many of the assemblies, adding diversity and an endangered species focus to the programs.

Resource Library

The Region 3 Resource Library is located in the Refuge's Administrative/Visitor Center building. The purpose of the library is to distribute a variety of materials to USFWS field offices, educators, and conservation agencies. Services provided for FY99:

Video/film requests: 530
Information/resource requests: 213
USFWS displays use: 33
Educational Kits use:

Prairie Trunk	12
Project Wet Trunk	1
Suitcase for Survival	14
Songbird Trunk	21
Enviroscape Model	1
Wetland Trunk	8
Wolf Box	13
Zebra Mussel	1
Total	**71**

Art Gallery Exhibits

Nine gallery exhibits were displayed for six weeks each in fiscal year 1999. Approximately 200 individual art pieces were hung. The Refuge held its first ever juried show which was coordinated by intern, Kari Lennartson. Approximately 15 artists submitted works for this juried show.

The exhibits included:

- "Where Land and Water Meet," color photos by photographer, Francine Corcoran.
- "From a Child's Eye," paintings and sculpture, by the students of Nature's Palette Art Gallery, Hastings, MN
- "Minnesota River: Faces and Places," oil paintings by Michelle Thelen
- "Icy Waters - Rocky Shores," oil pastels, soft pastels, and pencil by Nancy Lamberger
- "Wetlands and Landscapes," chalk pastel by Marilyn Ganje-Fling
- "Earth Smart," Juried show of mixed media, coordinated by Kari Lennartson
- "Development and Wildlife," oil paintings of Mark Bautch
- "Death and Life Cycles," mixed media by Elizabeth Greenbaum
- "Minnesota Flora," watercolor by Agnes Fine

Special Events

The Refuge staff coordinated six special events on the Refuge. Over 5,000 people participated in the following six special events:

National Wildlife Refuge Week

Refuge staff coordinated three events and a variety of interpretive programs for the 1998 National Wildlife Refuge Week. Two evening events were hosted at the Visitor Center during the week and an outdoor celebration, "Great Fall Adventure", was hosted at Bass Ponds on Saturday, October 17th. The evening events included; "An Evening with Teddy Roosevelt" impersonation by Steve Stark of Fargo, ND on Tuesday, October 13th and "The Secret Life of the Minnesota River Valley" a slide presentation by Scott Sharkey of Bloomington, MN on Thursday, October 15th. The "Great Fall Event"included bird walks, goose and duck calling, canoeing, wildlife viewing, and critters from the Minnesota Zoo Mobile. Approximately 300 people enjoyed the week long events.

International Migratory Bird Day

In partnership with the Como Zoo and the National Park Service, about 3,444 people received information about migratory birds during International Migratory Bird Day on Saturday May 8, 1999. Over 750 children became "Winning Warblers" by gathering habitat dots to complete a Certificate of Survival and claim a poster award during the day

Photo 11. Park Ranger Endrizzi with her kestrel Jordan at IMBD. Photo by E. Moyer.

Earth Day

On April 22, 1999, the Minnesota Valley National Wildlife Refuge celebrated Earth Day with approximately 160 volunteers from the Minnesota School for Environmental Studies, the Psycho-social Learning Center, the Airport Hilton, and several other individuals. Staff and volunteers picked up litter, cleaned out gutters, and swept parking lots at the Visitor Center, Bass Ponds, Russell A. Sorenson Landing on Lyndale Avenue, and Old Cedar. Our two dumpsters were overflowing with the collected trash. At the end of the day, the refuge hosted a barbeque for all the volunteers. In spite of some wet weather, the day was a great success!

Junior Duck Stamp Program

Approximately 800 entries were received for the 1999-2000 competition. Sara Stack, a North St. Paul High school student from Maplewood, Minnesota won this year's Best-of-State with her acrylic painting of a pair of lesser scaup. Approximately 500 guests attended the awards ceremony at the Minnesota School of Environmental Studies in Apple Valley on April 17, 1999. Sara went on to take second place in the National Competition. Sara, accompanied by her father and her teacher were invited to Washington, D.C. where they were honored for their accomplishments. The ceremony took place during the judging of the Federal Duck Stamp Program. Judie Miller, coordinator of the program also was invited to Washington D.C. and participated in the ceremonies.

Photo 12. Minnesota Best-of-Show, "Scaup at Rest", acrylic by Sara Stack, age 18, North St. Paul HS. Photo by J. Miller.

A traveling exhibit consisting of 36 pieces of art representing the first, second, and third place winners was on display throughout Minnesota through December 1999. The MN exhibit was on display at the State Capital, several waterfowl and nature festivals and events, the state fair, and several galleries. In total, the exhibit was at 12 sites/events reaching a viewing audience of 100,000.

Volunteers contributed 140 hours to the Junior Duck program. Sources for actual dollars included $5000 from the Minnesota Waterfowl Association, $500 from Hadley Companies, and $4000 from USFWS Challenge Cost Share. Other contributors included Bridgeman's Restaurants Inc., Jim Hautman, Artist, Joe Hautman, Artist, Roger Preuss, Artist, in conjunction with Wildlife America, MN School of Environmental Studies, and the National Duck Stamp Collectors Society

Also of note is that Rebecca Latham, Best-of-Show winner from 1998-1999 entered the adult Federal Duck Stamp Competition. She took tenth place in the competition. First place was won by Adam Grimm. Adam is the first prior Junior Duck Stamp winner to take the coveted title. Adam won fourth place in the Junior competition in 1996.

Photo 13. Sara Stack, her parents and great-grandmother, admiring her win at the Junior Duck Stamp Ceremony. Photo by J. Miller.

7.b. Outreach

Several years of effort culminated with the printing of the new general brochure which represents hours of writing, editing, layout, and photography. Forty thousand copies of this full color center fold, center stapled brochure were produced and printed for a cost of about 38 cents per copy. It has been nominated for a National Association for Interpretation Publications Award.

Refuge staff and volunteers reached over 10,000 people through off-site presentations and special events hosted on the Refuge. There were 36 news releases issued on topics ranging from the Comprehensive Conservation Planning (CCP) meetings to special events to law enforcement issues such as the leash law. We also issued ten public service announcement for special events and the CCP.

Photo 14. Park Ranger Moyer on a canoe adventure.
Photo by S. McDonald.

8

Planning and Administration

8.a. Comprehensive Conservation Planning

The Refuge has completed four major steps in the CCP process: pre-planning, initiating public involvement and scoping, reviewing the vision statement and goals, and determining significant issues. Throughout the pre-planning stage, the refuge developed its public involvement plan, identified compliance requirements, created its work plan, and acquired necessary information such as GIS maps and data. Seven public open houses were held up and down the Minnesota River throughout the spring to involve the public and to help the Refuge identify significant issues. Approximately 250 people attended. Over 85 comment cards were also received from the public. The staff reviewed and revised the 1991 Refuge vision, mission, and goals this fall. We determined that smaller working groups will be necessary to further our public involvement and scoping and identification of significant issues. There will be five working groups with approximately 75 people in attendance. This will occur the beginning of next fiscal year.

8.b. General Administration

REFUGE FUNDING - FY'99		
Refuge Operations	1261	$1,165,660
Volunteer Program	1261	7,800
Challenge Grant Programs	1261	38,000
Refuge Contaminants	1261-3C14	43,000
Maintenance Management	1262	192,000
Private Lands	1121	126,500
NAWMP Projects	1234	14,000
Fire Management	9251	36,249
Prescribed Fire	9263	26,050
Migratory Bird Conser.	3110	5,000
Resource Center	various	52,800
TOTAL		**$1,707,059.00**

Contributed Funds

7201-0083	General Purpose (Refuge)	315
7201-0243	Various	474
7201-0362	Jr. Duck Stamp Program	5,541
7201-0364	Habitat Restoration	56,400
7201-0422	Savage Fen	2061
7208-3032	Scott and LeSueur Wetlands	21,900
7201-c310	Community Sportsman	5,000

Room Reservation Funds Collected in FY99

6351-0000	Room Reservation Fund	7980

REFUGE STAFFING

The Refuge hired two permanent and three temporary employees. Jill Torres was hired in February as a Permanent Full-Time Park Ranger. She has previous experience with the National Park Service in California. She has been the lead person in completing the CCP and is also part of the Environmental Education & Interpretation team. Tom Marcouiller was hired on as a Permanent Seasonal Maintenance Worker. After volunteering for and working a temporary position for the Fish and Wildlife Service, it's nice to get him hired into a permanent position. Katy Fitzgerald was hired in February to fill the two-year term Biological Sciences Technician position that was vacated by Anita Grover last year. She comes to us from Maryland and works with private lands. Tracy Fifarek and Jane Thorson were hired in May as temporary Biological Sciences Technicians. Although limited funding prevented us from keeping both on board past the end of October, we were able to extend Tracy through the end of Fiscal Year 2000. She also works primarily with the private lands program.

Besides those that didn't have a choice in the matter (temporary employees & summer interns), only two employees left Minnesota Valley this fiscal year. Andy Mitzel, Park Ranger/Volunteer Coordinator, transferred to the Department of Defense in March and Chris Kessenich, SCEP Student, resigned to take a full-time Conservation Warden position with the Great Lakes Indian Fish and Wildlife Commission.

In other personnel matters, Chris Kane completed his three-month law enforcement training at the Federal Law Enforcement Training Center (FLETC) in Georgia, bringing the number of commissioned Refuge officers to four. Juancarlos Giese will continue to work for the Refuge during his holiday and summer breaks and we are also optimistic that a new Volunteer Coordinator will be hired and on board by the end of the calendar year.

The following is a list of the entire Minnesota Valley staff for Fiscal Year 1999, including their title, current grade and report date.

[illegible]

[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

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[illegible]	[illegible]	[illegible]

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[illegible]

[illegible]

Permanent Full Time

NAME	TITLE	GRADE	REPORT DATE	STATUS
Boyd, Lonnie	Maintenance Worker	WG-7	11/13/94	
Bradley, Jim	Park Ranger	GS-7	11/15/92	
Collier, Linda	Administrative Technician	GS-6	10/01/95	
Endrizzi, Deanne	Park Ranger	GS-7	09/09/90	
Franke, Dean	Maintenance Worker	WG-9	03/30/97	
Gaunitz, Debbie	Refuge Operations Specialist	GS-9	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-7	04/27/97	
McDonald, Sue	Park Ranger	GS-7	12/07/97	
Miller, Judith	Park Ranger	GS-11	06/28/92	
Mitzel, Andy	Park Ranger	GS-6	08/03/97	Transfer to DOD
Moyer, Ed	Park Ranger	GS-7	11/14/82	
Newbrough, Dawn	Administrative Officer	GS-9	07/05/98	
Samuels, Vickie	Park Ranger	GS-7	08/28/90	
Schreiner, Terry	Refuge Operations Specialist	GS-12	07/21/85	
Schultz, Richard D.	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	
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	
Fitzgerald, Katy	Biological Sciences Tech.	GS-5	02/01/99	
Thorson, Jane	Biological Sciences Tech.	GS-5	05/17/99	Expiration of Appt.

SCEP/CAI Students

NAME	TITLE	GRADE	REPORT DATE	STATUS
Antonio, Alisha	Biological Sciences Aid.	GS-3	06/13/99	Expiration of Appt.
Giese, Juancarlos	Student Trainee (Biology)	GS-3	06/06/99	
Kessenich, Chris	Student Trainee (Biology)	GS-3	06/06/99	Resigned
Troendle, Aleisha	Biological Sciences Aid.	GS-3	06/13/99	Expiration of Appt.

Volunteer, Career, and Work Programs

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 within the Fish and Wildlife Service upon graduation. Chris Kessenich and Juancarlos Giese performed a variety of projects including habitat mapping, oak savanna monitoring, and maintenance projects for the Refuge.

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

Career Awareness Institute
The Career Awareness Institute is a federal program that provides paid training and skills development in fisheries and wildlife biology, landscape ecology, conservation biology, and other aspects of natural resource management. The program includes a two week academic phase and a seven week work assignment at a selected field station. Aleisha Troendle (University of Wisconsin - River Falls) and Alisha Antonio (Fort Lewis College, Durango, CO) attended the National Conservation Training Center session and spent the summer assisting the station biologist with various projects including oak savanna monitoring, purple loosestrife beetle monitoring, and habitat mapping.

University of Wisconsin - River Falls Student Intern Program
The Refuge hired six student interns to assist with maintenance projects on the Refuge and throughout the Wetland District. Carol Fagerlin, Sarah Hachey, Dana Peterson, Rachael Booth, Chris Valentine, and Scott Wente spent ten weeks working on projects such as posting, parking lot construction, and general maintenance projects.

Volunteer Program
In spite of the vacant volunteer coordinator position, Refuge volunteers provided over 6,000 hours for items such as special events, interpretive programs, visitor center desk coverage, and general maintenance projects.

Tree Trust
Twin Cities Tree Trust once again tackled several much needed public use projects. This organization has been our sole source for support in the completion of new and the rehabilitation of existing public use projects over the last 16 years. The only cost to the Refuge is for the materials. The projects completed or initiated during the time period are as follows:

- Constructed a fishing pier facility on Hogback Fishing Pond.
- Completed the trail by-pass under New Cedar Avenue bridge.
- Trimmed and removed downed trees from Bluff Trail.
- Installed water bars on Visitor Center Trail.

Photo 15. Water bars installed on Hillside trail before backfilling to grade. Photo by T. Schreiner.

8.c. Major Construction and Maintenance Projects

The Minnesota Department of Transportation (MNDOT) began the replacement of the highway 169 bridge that crosses the Minnesota River and connects the Wilkie Unit to the Bloomington Ferry unit. The old vehicle bridge was removed and replaced with a smaller pedestrian bridge. Upon completion of the project in FY2000, the DNR will take over management of the bridge as part of the state trail system.

The Visitor Center carpeting was replaced in the two classrooms, the gallery, and the stairs leading to the administration offices.

A post and rail parking lost was constructed on the Upgrala Unit. The completion of the lot was instrumental in reducing the amount of dumping that was occurring in the area. Crews from all several agencies cooperated to remove over 12 dump truck loads of garbage, tires, appliances and brush were from this multiple ownership area that includes Refuge, DNR, Scott County and DOT land.

With assistance from Regional Office surveyors the Long Meadow Lake Unit boundaries were properly posted throughout the Bloomington area. In addition, several WPA's and easements were posted as well.

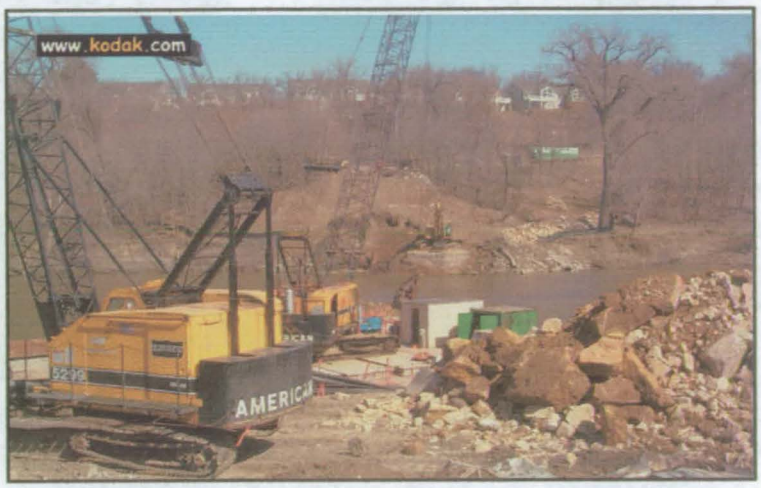

Photo 16. Bloomington Ferry bridge replacement in progress. Photo by R. Schultz.

Refuge Comprehensive Accomplishment Report - FY 99

Minnesota Valley NWR

OrgCode: 32590 State(s): MN Type: NWR 3

MONITORING AND STUDIES

1.a. Surveys & Censuses

Inputs:

$16	1260 funds($K)
$5	Other funds($K)
$21	Total funds($K)
83	1260 Staff Days
35	Other Staff Days
118	Total Staff Days
153	Volunteer Hours

Outputs:

# of wildlife surveys conducted	8
# of habitat surveys conducted	3
% of effort off-refuge	0

Outcomes:

TE:	10%
WF:	15%
OMB:	15%
HEC:	25%
IAF:	%
SDA:	%
RFW:	15%
PED:	10%
PRC:	10%

Although a spring storm in 1998 destroyed most of the great blue heron nestling production, the colony produced over 400 nestlings, which is close to the average production of the colony. Since staff is currently restoring the oak savannahs at Rapids Lake and Louisville Swamp units, no habitat surveys were conducted. However, the Minnesota School for Environmental Learning conducted a baseline vegetation survey on an old field in the Long Meadow Lake Unit which is scheduled for restoration.

1.b. Studies and Investigations

Inputs:

$9	1260 funds($K)
$1	Other funds($K)
$10	Total funds($K)
30	1260 Staff Days
5	Other Staff Days
35	Total Staff Days
250	Volunteer Hours

Outputs:

# of studies conducted	2
% of effort off-refuge	0

Outcomes:

TE:	%
WF:	%
OMB:	%
HEC:	50%
IAF:	%
SDA:	%
RFW:	50%
PED:	%
PRC:	%

The NSP staff presented their report from the invertebrate, vegetation, and fish studies that were conducted on the Black Dog Unit. This data will be helpful in the long term management of Black Dog Lake.

Refuge Comprehensive Accomplishment Report - FY 99

Minnesota Valley NWR

OrgCode: 32590 State(s): MN Type: NWR 3

HABITAT RESTORATION

2.a. Wetland Restoration

Inputs:

$73	1260 funds($K)
$13	Other funds($K)
$86	Total funds($K)
300	1260 Staff Days
80	Other Staff Days
380	Total Staff Days
75	Volunteer Hours

Outputs:

# of refuge acres restored	75
# of off-refuge acres restored	202
# acres of new wetlands	.7

Outcomes:

TE:	10%
WF:	60%
OMB:	10%
HEC:	10%
IAF:	10%
SDA:	15%
RFW:	65%
PED:	10%
PRC:	10%

Some of the major wetland restoration projects that were completed in FY99 include 11.6 acres on Cobb WPA, 38.1 acres on Perbix WPA, 17 acres on the Salokar FmHA easement, 56 acres on the Cook property, and the final two restorations were completed on Redhead WPA. Over 30 partners including landowners, local conservation organizations, government agencies such as the NRCS and Soil and Water Conservation District Offices, DNR, and NAWCA grant funds were used to complete these restorations. As in previous years the emphasis is placed on the

2.b. Upland Restoration

Inputs:

$68	1260 funds($K)
$3	Other funds($K)
$71	Total funds($K)
240	1260 Staff Days
20	Other Staff Days
260	Total Staff Days
190	Volunteer Hours

Outputs:

# of refuge acres restored	273
# of off-refuge acres restored	73

Outcomes:

TE:	5%
WF:	60%
OMB:	20%
HEC:	10%
IAF:	10%
SDA:	10%
RFW:	75%
PED:	10%
PRC:	10%

Refuge staff worked to restore native grasses on several WPA's including Perbix (75 acres), Cobb (64 acres), and Erin Prairie (74 acres). Refuge staff worked in partnership with several local Minnesota Pheasants chapters which provided assistance with seeding and funding for several WPAs. Also completed was a 20 acre oak savannah restoration on the Oelfke easement and 30 acres of prairie on private land in Carver County. This work was supported by contributions from local conservation organizations and a NAWCA and Metropolitan Council grant.

2.c. Riverine Restoration

Inputs:

$8	1260 funds($K)
	Other funds($K)
$8	Total funds($K)
30	1260 Staff Days
0	Other Staff Days
30	Total Staff Days
400	Volunteer Hours

Outputs:

miles of refuge rivers restored	0
miles of non-refuge rivers rest.	2
# riverine projects completed	13

Outcomes:

TE:	5%
WF:	20%
OMB:	15%
HEC:	50%
IAF:	20%
SDA:	15%
RFW:	60%
PED:	10%
PRC:	5%

Thirteen restorations were completed through cooperative agreements with the Carver and Scott County Soil and Water Conservation Districts. The refuge paid part of the cost of the restoration while the SWCDs and Minnesota Conservation Coprs crews provided labor and supplies. Riparian restorations are concentrated in the lower Minnesota River watershed to provided water quality benefits as well as habitat benefits to the refuge.

2.d. Deepwater/Coral Reef Restoration

Inputs:

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

Outputs:

# refuge deepwater acres restored	0
# refuge coral reef acres restored	0
# off-refuge deepwater acres rest.	0
miles of marine shoreline restored	0
# deepwater/coral reef projects	0

Outcomes:

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

Refuge Comprehensive Accomplishment Report - FY 99

Minnesota Valley NWR

OrgCode: 32590 State(s): MN Type: NWR 3

HABITAT MANAGEMENT

3.a. Water Level Management

Inputs:

$22	1260 funds($K)
$4	Other funds($K)
$26	Total funds($K)
75	1260 Staff Days
25	Other Staff Days
100	Total Staff Days
0	Volunteer Hours

Outputs:

# new acres to be managed	1108
# new units to be managed	16

Outcomes:

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

3.b. Moist Soil Management

Inputs:

	1260 funds($K)
	Other funds($K)
	Total funds($K)
15	1260 Staff Days
0	Other Staff Days
15	Total Staff Days
0	Volunteer Hours

Outputs:

# new acres to be managed	20
# new units to be managed	2

Outcomes:

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

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

3.d. Farming		Outcomes:
Inputs:	Outputs:	TE: 10%
$6 1260 funds($K)	# acres farmed 32	WF: 30%
Other funds($K)	% cooperatively farmed 100	OMB: 20%
$6 Total funds($K)		HEC: 10%
25 1260 Staff Days		IAF: %
0 Other Staff Days		SDA: %
25 Total Staff Days		RFW: 10%
0 Volunteer Hours		PED: 10%
		PRC: 10%

The Eichten FmHA easement and Perbix WPA were farmed to prepare the areas for native grass seedings in the 2000 field season.

3.e. Forest Management Outcomes:

3.e. Forest Management

Inputs:

$8	1260 funds($K)
$5	Other funds($K)
$13	Total funds($K)
10	1260 Staff Days
20	Other Staff Days
30	Total Staff Days
250	Volunteer Hours

Outputs:

# acres harvested	20
# acres treated	0

Outcomes:

TE:	10%
WF:	%
OMB:	20%
HEC:	50%
IAF:	%
SDA:	%
RFW:	10%
PED:	10%
PRC:	%

Cedar trees were removed from the Rapids Lake Unit as part of an oak savannah restoration project. In addition, woody vegetation was removed with a hydroaxe from the Louisville Swamp unit oak savanna restoration area. The oak savanna restoration site is on an intensive tree removal and burning schedule in an effort to encourage native grasses and forbs to repopulate the understory of the oaks. When completed, the Louisville site will cover over 50 acres and the Rapids Lake site will cover 200 acres.

3.f. Fire Management

Inputs:

$36	1260 funds($K)
$14	Other funds($K)
$50	Total funds($K)
150	1260 Staff Days
85	Other Staff Days
235	Total Staff Days
0	Volunteer Hours

Outputs:

# refuge prescribed burn acres	116
# off-refuge prescribed burn acres	0
# refuge prescribed burns conducted	6
# wildfires suppressed	0

Outcomes:

TE:	10%
WF:	30%
OMB:	20%
HEC:	20%
IAF:	%
SDA:	%
RFW:	10%
PED:	5%
PRC:	5%

Unfavorable wind directions and above normal rainfall in the month of April and May contributed to the low number of prescribed burns that were completed in FY99. Several new prairie plantings as well as the Louisville Oak Savannah restoration site were burned.

3.g Pest Plant Control

Outcomes:

3.g Pest Plant Control		Outcomes:
Inputs:	**Outputs:**	TE: %
$33 1260 funds($K)	# acres treated 557	WF: %
$6 Other funds($K)	# refuge acres infested 2800	OMB: %
$39 Total funds($K)	# acres treated chemically 77	HEC: 100%
140 1260 Staff Days	# acres treated mechanically 470	IAF: %
35 Other Staff Days	# acres treated biologically 10	SDA: %
175 Total Staff Days		RFW: %
0 Volunteer Hours		PED: %
		PRC: %

The purchase of a truck mounted spray unit enabled Refuge staff to spray three times as many acres of thistle than in past years.

Approximately 5040 purple loosestrife beetles were released on the Hogback pond, the youth fishing pond, and Cedar pond. The refuge is also a Minnesota Department of Agriculture nursery site for leafy spurge beetles. Starting in FY 2000, the refuge will be increasing our efforts to monitor and control exotic species.

FISH AND WILDLIFE MANAGEMENT

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

4.b Disease Monitoring and Treatment		Outcomes:
Inputs:	**Outputs:**	TE: %
$0 1260 funds($K)	# outbreaks monitored 0	WF: %
$0 Other funds($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: %
0 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: %

4.d. Nest Structures

Inputs:

$11	1260 funds($K)
$2	Other funds($K)
$13	Total funds($K)
30	1260 Staff Days
10	Other Staff Days
40	Total Staff Days
36	Volunteer Hours

Outputs:

# bird nest structures erected	40
# bird nest structures maintained	80

Outcomes:

TE:	%
WF:	80%
OMB:	20%
HEC:	%
IAF:	%
SDA:	%
RFW:	%
PED:	%
PRC:	%

Refuge staff continue to work with private landowners to encourage them to put up wood duck boxes and mallard nest strutures on restored wetlands. Through the private lands program staff also give landowners bluebird boxes and bat houses.

4.e. Pest, Predator & Exotic Animal Control

Inputs:

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

Outputs:

# mammals removed	0
# birds removed	0
# reptiles/amphibians removed	0
# exlusionary fenced areas maint.	0
# acres treated for insects	0

Outcomes:

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

COORDINATION ACTIVITIES

5.a. Interagency Coordination

Inputs:

$76	1260 funds($K)
	Other funds($K)
$76	Total funds($K)
402	1260 Staff Days
0	Other Staff Days
402	Total Staff Days
0	Volunteer Hours

Outputs:

# acres affected	3000
% effort for uplands	50
% effort for wetlands	40
% effort for deepwater/riverine	10

Outcomes:

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

Refuge staff continue to work with many local government agencies to protect and restore the lower Minnesota River watershed. The refuge works closely with 2 adjacent state parks, the DNR wildlife managers in our 13 county WMD as well as many local cities and county agencies. We continue to address stormwater and urban development issues adjacent to the refuge in aneffort to protec refuge waters and lands.

5.b. Tribal Coordination

Inputs:

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

Outputs:

# acres affected	0
% effort for uplands	0
% effort for wetlands	0
% effort for deepwater/riverine	0

Outcomes:

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

Minnesota Valley NWR

OrgCode: 32590 State(s): MN Type: NWR 3

5.c. Private Land Activities (excluding restoration)

Inputs:

$58	1260 funds($K)
$10	Other funds($K)
$68	Total funds($K)
250	1260 Staff Days
60	Other Staff Days
310	Total Staff Days
0	Volunteer Hours

Outputs:

# landowners assisted	250
# acres affected	1560
% effort for uplands	60
% effort for wetlands	35
% effort for deepwater/riverine	5

Outcomes:

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

Refuge staff contiue to promote partnerships through the private lands program in an effort to restore and protect wetland, riparian and prairie habitat in the 13 county wetland district. Although the emphasis is on the lower Minnesota River watershed, we also work closely with landowners in the Cannon River and Mississippi River watersheds. Refuge staff work closely with many private conservation organizations to accomplish our goals.

Minnesota Valley NWR

OrgCode: 32590 **State(s): MN** **Type: NWR** 3

RESOURCE PROTECTION

6.a. Law Enforcement

Inputs:

$223	1260 funds($K)
	Other funds($K)
$223	Total funds($K)
400	1260 Staff Days
	Other Staff Days
400	Total Staff Days
8	Volunteer Hours

Outputs:

# incidents documented	114
# NOVs & State citations issued	81
# cases assisted	5
# miles of boundary posted/maint.	24

Outcomes:

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

6.b. Permits & Economic Use Management

Inputs:

$9	1260 funds($K)
	Other funds($K)
$9	Total funds($K)
45	1260 Staff Days
0	Other Staff Days
45	Total Staff Days
0	Volunteer Hours

Outputs:

# permits issued	23
# special uses reviewed	38

Outcomes:

TE:	%
WF:	20%
OMB:	10%
HEC:	50%
IAF:	%
SDA:	%
RFW:	20%
PED:	%
PRC:	%

6.c. Contaminant Investigations

Inputs:

$11	1260 funds ($K)
	Other funds ($K)
$11	Total funds ($K)
45	1260 Staff Days
0	Other Staff Days
45	Total Staff Days
0	Volunteer Hours

Outputs:

# investigations underway	1
# investigations completed	2
# water quality studies underway	2
# air quality studies underway	0

Outcomes:

TE:	%
WF:	%
OMB:	%
HEC:	25%
IAF:	%
SDA:	%
RFW:	75%
PED:	%
PRC:	%

As part of the Contaminant Assessment Program, Refuge staff worked with the Twin Cities Ecological Services Office to collect background information on contaminant threats to the Long Meadow Lake and Black Dog Units of the Refuge. Due to the large volume of stormwater (over 23 stormwater outlets into Long Meadow Lake) entering refuge wetlands, this is a major resource challenge for managing bottomland wetlands.

6.d. Contaminant Cleanup

Inputs:

$6	1260 funds ($K)
	Other funds ($K)
$6	Total funds ($K)
15	1260 Staff Days
0	Other Staff Days
15	Total Staff Days
0	Volunteer Hours

Outputs:

# cleanups underway	0
# cleanups completed	2
# spills responded to	2

Outcomes:

TE:	%
WF:	%
OMB:	%
HEC:	25%
IAF:	%
SDA:	%
RFW:	75%
PED:	%
PRC:	%

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

6.f. Cultural Resource Management		Outcomes:
Inputs:	Outputs:	TE: %
$0 1260 funds($K)	# of investigations conducted 1	WF: %
$0 Other funds($K)	# of sites documented 0	OMB: %
$0 Total funds($K)	# of museum property items maint. 0	HEC: %
0 1260 Staff Days		IAF: %
0 Other Staff Days		SDA: %
0 Total Staff Days		RFW: %
0 Volunteer Hours		PED: %
		PRC: %

Through the CCP process, a contractor completed an overview of the archeological resources on the refuge.

Minnesota Valley NWR

ode: 32590 State(s): MN Type: NWR 3

6.g. Land Acquisition Support

Inputs:		Outputs:	
$49	1260 funds($K)	# of tracts involved	17
$5	Other funds($K)	# of acres involved	4655
$54	Total funds($K)		
220	1260 Staff Days		
30	Other Staff Days		
250	Total Staff Days		
0	Volunteer Hours		

Outcomes:

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

In July 1999, the Service was able to acquire the 845 acre Kelley tract located in the Long Meadow Lake Unit. This key parcel of land connects the visitor center to the rest of the unit. Now visitors can walk from the visitor center and hike on trails that connect with the Minnesota River bottoms. Negotiations for this tract of land have been ongoing for years.

The refuge is also actively acquiring lands in the Wetland Management District.

PUBLIC EDUCATION AND RECREATION

7.a. Provide Visitor Services

Inputs:		Outputs:	
$355	1260 funds($K)	% effort for hunting	5
$44	Other funds($K)	% effort for fishing	5
$399	Total funds($K)	% effort for wildlife obs/photog.	15
1,525	1260 Staff Days	% effort for education/interp.	70
260	Other Staff Days	% effort for non-priority use	5
1,785	Total Staff Days		
3,449	Volunteer Hours		

Outcomes:

TE:	%
WF:	10%
OMB:	5%
HEC:	%
IAF:	%
SDA:	%
RFW:	5%
PED:	40%
PRC:	40%

Approximately 12,000 visitors attended Environmental Education programs (from pre-school to high school). Staff hosted or participated in 10 educator workshops reaching 400 people. Approximately 1,300 visitors attended Interpretive programs presented by staff and volunteers. Staff also work closely with 7 partner schools providing close support for environmental programming.

7.b. Outreach			Outcomes:
Inputs:	Outputs:		TE: %
$188 1260 funds($K)	# participants (groups)	4000	WF: %
Other funds($K)	# people viewing off-site exhibits	200000	OMB: %
$188 Total funds($K)	# news releases issued	36	HEC: %
750 1260 Staff Days	# TV/radio spots	10	IAF: %
0 Other Staff Days	# of other special events	6	SDA: %
750 Total Staff Days			RFW: %
1,269 Volunteer Hours			PED: 75%
			PRC: 25%

Six major special events were coordinated and hosted by Refuge staff including International Migratory Bird Day, Youth Fishing Day, Junior Duck Stamp program, Earth Day, Young Waterfowlers, and National Wildlife Refuge Week. These events drew over 105,000 visitors to the Refuge.

The Junior Duck stamp exhibit travelled throughout the state of Minnesota and was viewed by over 100,000 people at 11 different sites including the Natural

PLANNING AND ADMINISTRATION

8.a. Comprehensive Conservation Planning			Outcomes:
Inputs:	Outputs:		TE: 10%
$51 1260 funds($K)	% of CCP completed this year	25	WF: 10%
$8 Other funds($K)	% completion overall	25	OMB: 10%
$205 Total funds($K)	# of stations covered	1	HEC: 30%
160 1260 Staff Days			IAF: %
45 Other Staff Days			SDA: %
205 Total Staff Days			RFW: 10%
0 Volunteer Hours			PED: 15%
			PRC: 15%

The Refuge has completed four major steps in the CCP process: pre-planning, initiating public involvement and scoping, reviewing the vision statement, and determining significant issues. Seven public open houses were held at various locations throughout the district which were attended by approximately 250 people.

Refuge Comprehensive Accomplishment Report - FY 99

Minnesota Valley NWR

OrgCode: 32590 State(s): MN Type: NWR 3

8.b. General Administration			Outcomes:
Inputs:		Outputs:	TE: %
$101	1260 funds($K)		WF: %
	Other funds($K)	% station funds spent on maint. 15	OMB: %
$101	Total funds($K)		HEC: %
			IAF: %
330	1260 Staff Days		SDA: %
	Other Staff Days		RFW: %
330	Total Staff Days		PED: %
133	Volunteer Hours		PRC: %

During the year the refuge also employed 2 SCEP students, 2 Career Awareness Institute students, 2 Youth in Natural Resource students, and 6 interns from the University of Wisconsin.

TOTALS: Minnesota Valley NWR			
Inputs:		Staff FTEs Used:	23.0
$1,417	1260($K)	Volunteer FTEs Used:	3.0
$120	Other($K)		
$1,537	Total($K)		

5,270	1260 Staff Days	
710	Other Staff Days	
5,980	Total Staff Days	
6,213	Volunteer Hours	

Volunteer Services Report

FISCAL YEAR 99

Station Information

Station: **Minnesota Valley NWR**

OrgCode: 32590

1. Number of volunteers by age:

Under 18	18-35	36-61	Over 61	TOTAL
10	38	33	2	83

2. Number of hours by Activity Category

Monitoring & Studies

Surveys & Censuses	153
Studies & Investigations	250

Habitat Restoration

Wetland Restoration	75
Upland Restoration	190
Riverine Restoration	400
Deepwater/Coral Reef Restoration	0

Habitat Management

Water Level Management	0
Moist Soil Management	0
Graze/Mow/Hay	0
Farming	0
Forest Management	250
Fire Management	0
Pest Plant Control	0

Fish & Wildlife Management

Bird Banding	0
Disease Monitoring & Treatment	0
Reintroductions	0
Nest Structures	36
Pest, Predator & Exotic Control	0

Coordination Activities

Interagency Coordination	0
Tribal Coordination	0
Private Lands Activities (ex.restoration)	0

Resource Protection

Law Enforcement	8
Permits & Economic Use Management	0
Contaminant Investigation	0
Contaminant Cleanup	0
Water Rights Management	0
Cultural Resource Management	0
Land Acquisition Support	0

Public Education & Recreation

Provide Visitor Services	3449
Outreach	1269

Planning & Administration

Comprehensive Conservation Planning	0
General Administration	133

Provisions Unique to Alaska

Subsistence	
Public Access	
Manage Comm./Subsistence Fisheries	
Manage Private Lands	
Navigability Determinations	
Total Hours	6213

Operation Costs ($K)

Operations (Supplies, Materials, Equipment, Uniforms, etc.)	$1.0
Travel/Transportation, Per Diem, Housing/Utilities (etc.)	$0.0

Volunteer Services Report

FISCAL YEAR 99

Station Information

Station: **Minnesota Valley NWR**

OrgCode: 32590

Other (Staff/Volunteer Training, Recruitment, Recognition)	$1.0
TOTAL	$2.0

Staff Time/Salary for Administration of Program

Staff Time (Days) _____ Staff Salaries ($K) _____

Volunteer Highlights

Special Recognition

Volunteer interpreter Craig Mandel became the first voulnteer at Minnesota Valley to exceeded 2,000 hours of service to the Refuge. Craig's specialty is leading interpretive bird walks which have attracted up to 50 people for one program. His knowledge of the subject, enthusiasm for the Refuge, and talent for making his programs interesting for all ages attribute to the high numbers of visitors that attend his programs.

Recommendations to improve the volunteer program: