

monthly meetings. These groups include the Friends of the Minnesota Valley, the Minnesota River Valley Audubon Chapter, the Minnesota Nature Photography Club, and the Native Plant Society.

Estimated Refuge visitation ranges between 250,000 and 300,000 each year. Visitors enjoy a variety of activities including priority public uses such as hunting, fishing, wildlife observation, wildlife photography, wildlife interpretation, and environmental education. General visitation at the Visitor Center peaked out at nearly 53,000 in 1991 but has since declined to less than 25,000 each year.

### Hunting

Various forms of hunting are allowed in selected units of the Refuge. Portions of the Wilkie Unit and all of the Louisville Swamp and Rapids Lake units are open to archery deer hunting. Public hunting for waterfowl, small game, and turkey is permitted south of the Middle Road on the Louisville Swamp Unit. Waterfowl hunting is allowed on Rice Lake in the Wilkie Unit. In addition, the Rapids Lake Unit is open to public hunting in accordance with state regulations.

### ***Youth Waterfowl Program***

The Refuge in cooperation with the Minnesota Waterfowl Association and other partners sponsors a youth waterfowl hunting program each year. The purpose of this program is to teach youth how to hunt waterfowl both ethically and safely. In addition to teaching young people waterfowl hunting techniques, the instructors also provide information about wildlife conservation, wetland ecology, and regulations. Following classroom instruction, the youth are provided the opportunity to trap shoot with their patterned shotguns, and to hunt on Refuge lands in the presence of their mentor. This is a popular program its goal is to instruct 30 young people annually in the art and science of waterfowling. A wild game recognition dinner is normally held each winter following the hunt.

### ***Hunting Opportunities for Persons with Disabilities***

For several years, Capable Partners, Inc. has been granted a special use permit to conduct waterfowl hunting on the north shore of Rice Lake of the Upgrala Unit for hunters with disabilities. The Refuge has provided wheel-chair accessible blinds, a boat dock, and an access road. In 2001, the Refuge expanded opportunities for this group by establishing two wheelchair-accessible turkey blinds on the Raids Lake Unit. Over the years, this partnership has provided some unique experiences to outdoor enthusiasts who normally do not have the opportunity to hunt or access to public hunting lands.

### Fishing

The Refuge offers a variety of opportunities for anglers. The most popular spots are from the banks of the Minnesota River on the Long Meadow Lake and Black Dog units where catfish and carp are the most common catch. The Bass Ponds also offer anglers an opportunity to try their luck. Over the past few years, the Refuge has seen a significant increase in fishing by immigrants. Hispanics in particular commonly use the Refuge in addition to members of the Russian and Hmong communities. Due to significant sources of contamination, Refuge signage and officers inform the Minnesota River anglers about the dangers of eating fish caught from these waters. Spanish language fishing regulations as well as consumption advisories are available to assist with this effort.

Since 1994, two wheelchair accessible fishing docks have been constructed, one at Cedar Pond and one at Youth Fishing Pond. These facilities provide an opportunity for members of the disabled community to participate in fishing activities.

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

The Refuge and several of its partners host an annual Youth Fishing Day at the Bass Ponds for inner city and community youth. This is a very popular program in which 200 young people and their families enjoy learning about proper and ethical angling techniques. Many partners, including the Red Lake Nation and Gander Mountain, Inc., have helped make this event successful year after year.

### Wildlife Observation

The Refuge is a popular destination for visitors seeking opportunities for observing wildlife in their native habitats. The Minnesota River Valley, including the Refuge, is regionally known as an excellent bird watching location, especially during spring and fall migrations. Species ranging from warblers to Wood Ducks to Bald Eagles are commonly observed in the Refuge's diverse habitats. Other visitors enjoy observing resident wildlife such as white-tailed deer, beaver and, on occasion, river otter.

To the degree possible, the Refuge cooperates with the Minnesota River Valley Audubon Chapter and others to promote wildlife observation activities. Several members of this Chapter organize bird watching trips that involve visits to various portions of the Refuge. Likewise, the Refuge is working with Audubon and others in establishing a Minnesota River Birding Trail, which will have several stops on or near the Refuge.

### Wildlife Photography

Consistent with the opportunities to view wildlife, many visitors also take the opportunity to photograph these critters and their associated habitats. These photographers, who have access to most portions of the Refuge, take advantage of early mornings and late evenings to shoot photographs. Due to periodic flooding of most Refuge lands, no permanent photo blinds have been constructed. With funds donated by North American Nature Photography Associated and labor provided by the Tree Trust, Inc., two portable photo blinds were constructed in 2001. These blinds will be used in subsequent years to promote wildlife photography on the Refuge.



*Photograph by Scott Shanley*

Over the years, numerous volunteers and neighbors have obtained some extraordinary photographs of Refuge wildlife and scenery. These people have graciously shared their photographs with the Refuge and they have become invaluable in the development of brochures and publications.

### Wildlife Interpretation

The primary interpretive theme for the Refuge is described by asking the pivotal question of "How Should We Live Together?" This concept was formulated in 1992 under contract and explored the relationship of this urban refuge to its surrounding communities. This concept and the history, conservation, and importance of wildlife to our society

are interpreted through a variety of mediums. The approximately 125 special programs conducted by Refuge staff or volunteer interpreters annually is the foundation of this interpretation. These programs, combined with Refuge brochures, Visitor Center exhibits, and interpretive nature trails, help the visiting public connect their lives with their natural environment. Nationally recognized special events such as International Migratory Bird Day, National Wildlife Refuge Week, and Earth Day are also conducted by Refuge staff to advance the public's understanding and knowledge of wildlife.

#### Environmental Education

Environmental education is a very important Refuge activity and is conducted year-round in the Visitor Center, on the Refuge and, at times, in off-site classrooms. Public, private, and home schools from throughout the Twin Cities participate in these environmental education programs. In addition, the Refuge has provided programs to schools as far away as Stillwater, Rochester, and St. Cloud. Approximately 10,000 students participate each year with the majority of the students coming from elementary and middle schools. All programs are free of charge and they can be led by staff (park rangers) or by teachers. The curriculums consist of a variety of subject matters and are tailored to meet the needs of youth in pre-school on up to 12th grade. Refuge staff have also hosted educator workshops designed to assist teachers in meeting their school's environmental educational needs. A brief summary of the environmental education curriculum is summarized below.

#### ***Pre-school***

Since its inception in 1997, the pre-school program has been very popular with area daycare centers and pre-school facilities. More than 2,000 children, plus their parents and guardians, have enrolled in this program each year. The 1.5-hour programs expose the children to concepts such as migration, squirrel behaviors, wildlife habitat such as trees, and wildlife tracks and sign. Each program includes a story or activity, a take home craft project, and a hike.

#### ***Kindergarten – 3rd Grade***

Created in 1999, the programs are curriculum-based with pre- and post-site activities. The curriculum contains five days of activities, one day being an 1.5-hour visit to the Refuge with a park ranger. Programs cover four topics: birds, insects, habitats, and the earth.

#### ***4th – 12th Grade***

These 11 field-based programs focus on resource management issues and explore the Refuge from a wildlife biologist's perspective through biological surveys and observations. Among other activities, students learn how water quality affects the health of the Refuge by comparing the chemical, physical, and biological characteristics of Refuge wetlands through macro invertebrate and water sampling. Other topics include wildlife monitoring, prairie interrelationships, etc.

#### Volunteer Contributions

Public interest in and concern for the natural environment are the seeds that grew into Minnesota Valley National Wildlife Refuge, and public commitment has proven lasting. Over the years, numerous volunteers have made significant contributions to the development, operations, and maintenance of the Refuge and its facilities. Most of these individuals share a great deal of passion for the fish, wildlife, and plant communities of this area.

Volunteers have contributed in many different ways that range from teaching pre-schoolers the concept of migration, to inventorying reptiles and amphibians, and to the clean-up of building sites through the operation of backhoes and bulldozers. It almost goes without saying that volunteers are very important to the Refuge and the District and will continue to be for a very long time.

## **Wetland Management District Public Recreation, Environmental Education and Outreach**

The Waterfowl Production Areas located in the District also provide local communities with the opportunity to participate in wildlife-dependent recreation and environmental education. All Waterfowl Production Areas are open to hunting and fishing consistent with state regulations. Soberg Waterfowl Production Area is closed to the use of single projectiles (rifles and shotgun slugs) due to safety concerns and a City of Lakeville ordinance.

To a limited degree, Waterfowl Production Areas are used by the general public for bird watching, wildlife interpretation, and environmental education. A good potential exists to develop quality environmental education curriculums, consistent with State graduation standards, for use by rural schools on nearby Waterfowl Production Areas.

The Minnesota Valley Wetland Management District is one of seven Districts within Minnesota that combined administer nearly 800 Waterfowl Production Areas. The visiting public, neighbors, local units of government, and the MnDNR benefit when management and permitted uses on Waterfowl Production Areas are consistent from one end of the state to the other. This Comprehensive Conservation Plan provides the opportunity to articulate policies that have been in place for many years but have not always been consistently applied or communicated. New national policies and regulations governing management and use of the Refuge System also prompted a review and fine tuning of what uses will and will not be allowed, and the stipulations all Districts will follow when allowing certain uses.

A summary of generally prohibited and permitted uses and activities on Waterfowl Production Areas in Minnesota is provided below. For each of the permitted activities, the reader is encouraged to review the separate compatibility determinations found in Appendix D. Stipulations or operating guidelines are provided in most compatibility determinations. Except where noted, these rules also apply to lands within the Refuge Units.

### Public Uses Generally Prohibited

- Off-road vehicle use, including snowmobiles and ATVs (except on State Trail)
- Camping
- Open fires
- Discharge of firearms except during State hunting seasons
- Use of motorized water craft
- Dog trials
- Horseback riding (except on State Trail)
- Commercial bait collecting
- Beekeeping

### Public Uses Permitted

(See *Compatibility Determinations in Appendix D*)

- Hunting in accordance with Refuge-specific seasons and regulations
- Wildlife observation
- Photography
- Fishing in accordance with State seasons and regulations
- Environmental education
- Interpretation for individuals or groups
- Trapping in accordance with State seasons and regulations (permit required on Refuge)
- Berry and nut collecting for personal use
- Limited plant and seed collection for decorative purposes

(Note: These uses include the use of non-motorized means of access including hiking, snowshoeing, cross-country skiing, or where appropriate, bicycling on existing trails.)

### Generally Permitted Management Activities Done by Others, and Miscellaneous Activities/Programs

- Haying for grassland management
- Farming for grassland management
- Timber or firewood harvest
- Food plots and feeders for resident wildlife
- Wildlife nesting structures
- Archaeological surveys
- Special access for disabled users
- Irrigation travelways across easement wetlands
- Temporary road improvement outside of existing right-of-way
- Special dedications/ceremonies
- Wetland access facilities
- WPA parking facilities
- Local Fire Department Training – Prescribed Burning
- Local Fire Department Training – Burning of Surplus Buildings on New Acquisitions

### Other Reoccurring Uses Handled on Case-by-Case Basis

- Grazing for grassland management
- New or expanded rights-of-way requests
- Ditch or channel maintenance to facilitate waterflow
- Major new facilities associated with public uses
- Commercial filming
- Special events
- Animal collecting requests
- Other requests for uses not listed above

## **Refuge Mitigation Projects**

### Background

Beginning in 1989, the Metropolitan Airports Commission (MAC) began to explore alternatives for expanding the operations of the Minneapolis-St. Paul International Airport. This action led to the preparation of an environmental impact statement that

considered building a brand new airport or expanding the existing facility. Ultimately, the Minnesota State Legislature weighed in on this issue and directed MAC to construct a new north-south runway on existing airport property.

The new runway will be constructed on the west side of the airport roughly parallel to Cedar Avenue. Although the south threshold of the runway will be nearly 1 mile away from Refuge lands, the use of this runway will result in overflights, on average, every other minute between 500 and 1,000 feet above the river valley. The impact of these overflights to the Refuge and its various programs is significant. Although current literature is not conclusive concerning the impacts of overflights on area wildlife, there is no question that the noise generated from these flights will significantly affect noise-sensitive public use activities such as bird watching, environmental education, and nature hikes.

Following prolonged negotiations, the U.S. Fish and Wildlife Service agreed to a cash settlement of \$26,090,000 to compensate for damages associated to Refuge facilities and programs. As specified in the Minnesota Valley National Wildlife Refuge Funding Agreement dated September 14, 1999, a non-profit organization would be established to administer these funds and to serve as a mitigation agent to work on behalf of MAC. In close coordination and cooperation with the Service, mitigation activities to be accomplished include but are not limited to:

- (1) Acquisition of a minimum of 4,090 acres of lands within the area identified as appropriate, and making such lands available for Refuge environmental education and wildlife-dependent recreational opportunities either through donation to the United States to be administered by the Service or its successor as part of the Refuge, or through a cooperative or other agreement for such use at no cost to the United States;
- (2) Construction and development of a visitor and education center on the Rapids Lake Unit or another suitable location approved by the Service or its successor for the Refuge; and
- (3) Construction of visitor access, environmental education, and wildlife interpretive facilities at suitable locations approved by the Service or its successor on Refuge lands.

Consistent with the Agreement, the final components of the Refuge Mitigation Plan have been developed by the Service and are included in this Plan as Appendix L. In developing this Plan, the Service sought to replace the public use and wildlife values that will be affected on the Refuge by future aircraft overflights. In addition, the Service sought to provide mechanisms for the long-term administration and management of the new lands and facilities that will be acquired with Refuge Mitigation Funds.

On August 31, 2000, the Minnesota Valley National Wildlife Refuge Trust, Inc. (Trust) was formally established for the primary purpose of administering these funds and completing Refuge mitigation projects. Consistent with prior agreements, MAC transferred \$26,090,000 into the account of the Trust. The Trust's Board of Directors includes a representative of the following organizations: Friends of the Minnesota Valley, Minnesota Department of Natural Resources, National Audubon Society, Minnesota Waterfowl Association, and the Minnesota River Joint Powers Board.

### Specific Mitigation Projects

Included as strategies within this CCP are projects that have been designated as airport mitigation projects. They include the acquisition of lands, the construction of the environmental education center and interpretive facilities, plus intern housing. These projects are described in greater detail in Appendix L.

## **Archaeological and Cultural Resources**

The Refuge Manager is responsible for applying several historic preservation laws and regulations to ensure that historic properties are identified and are protected to the extent possible within the Refuge's established purposes and the Refuge System mission. Early in project planning for all construction projects and other ground-disturbing actions, the Refuge Manager contacts the Regional Historic Preservation Officer to

initiate the Section 106 process. The Refuge Manager also will inform and request comments from the public and local officials through presentations, meetings, and media notices. Public involvement may also be achieved as part of the environmental planning required by the National Environmental Policy Act of 1969.

Archeological investigations and collecting on Refuge and District lands are performed only in the public interest by qualified archeologists or persons recommended by the Governor working under an Archeological Resources Protection Act permit issued by the

Service's Regional Director. The Refuge Manager must also issue a special use permit. As of 2001, five archeological investigations have produced 4,000 artifacts from Refuge and District lands. Artifacts are or will be stored at the Minnesota Historical Society under a cooperative agreement. Artifacts are owned by the Federal Government and can be recalled by the Service at any time.

Refuge staff take steps to prevent unauthorized collecting and violators are cited or other appropriate action is taken. Violations are reported to the Regional Historic Preservation Officer.

## **Law Enforcement**

Enforcement of Federal wildlife laws, as well as regulations specific to the Refuge System, is an integral part of Refuge and District operations. Law enforcement plays a crucial role in ensuring that natural and cultural resources are protected and that visitors encounter a safe environment, even within a major metropolitan area. The Refuge currently has two employees, one full-time and one collateral duty, who are commissioned to conduct law enforcement duties on Federal property. However, Federal law enforcement is a cooperative effort by many agencies in the region. Cooperative relationships and strategies have been developed with state conservation officers and all county sheriff departments in the area.

USFWS Photograph



## Wilderness Review

As part of the CCP process, we reviewed lands within the legislative boundaries of the Refuge for wilderness suitability. No lands were found suitable for designation as Wilderness as defined in the Wilderness Act of 1964. The Refuge does not contain 5,000 contiguous roadless acres nor does it have any units of sufficient size to make their preservation practicable as Wilderness. Lands acquired for the Refuge have been substantially affected by humans, particularly through agriculture and transportation infrastructure.

## Future Management Direction: Where We Want To Go Tomorrow

### Goals, Objectives and Strategies

Goals, objectives and strategies for the Minnesota Valley National Wildlife Refuge and Wetland Management District were developed with the participation of many citizens, cooperating agencies, conservation organizations, and Refuge staff. The following pages describe the goals established for major management areas, objectives for achieving those goals, and the specific strategies that will be employed by Refuge staff. The goals are organized into the broad categories of Biological, Land Protection, and Public Use.



USFWS File Photograph

### Biological Goals:

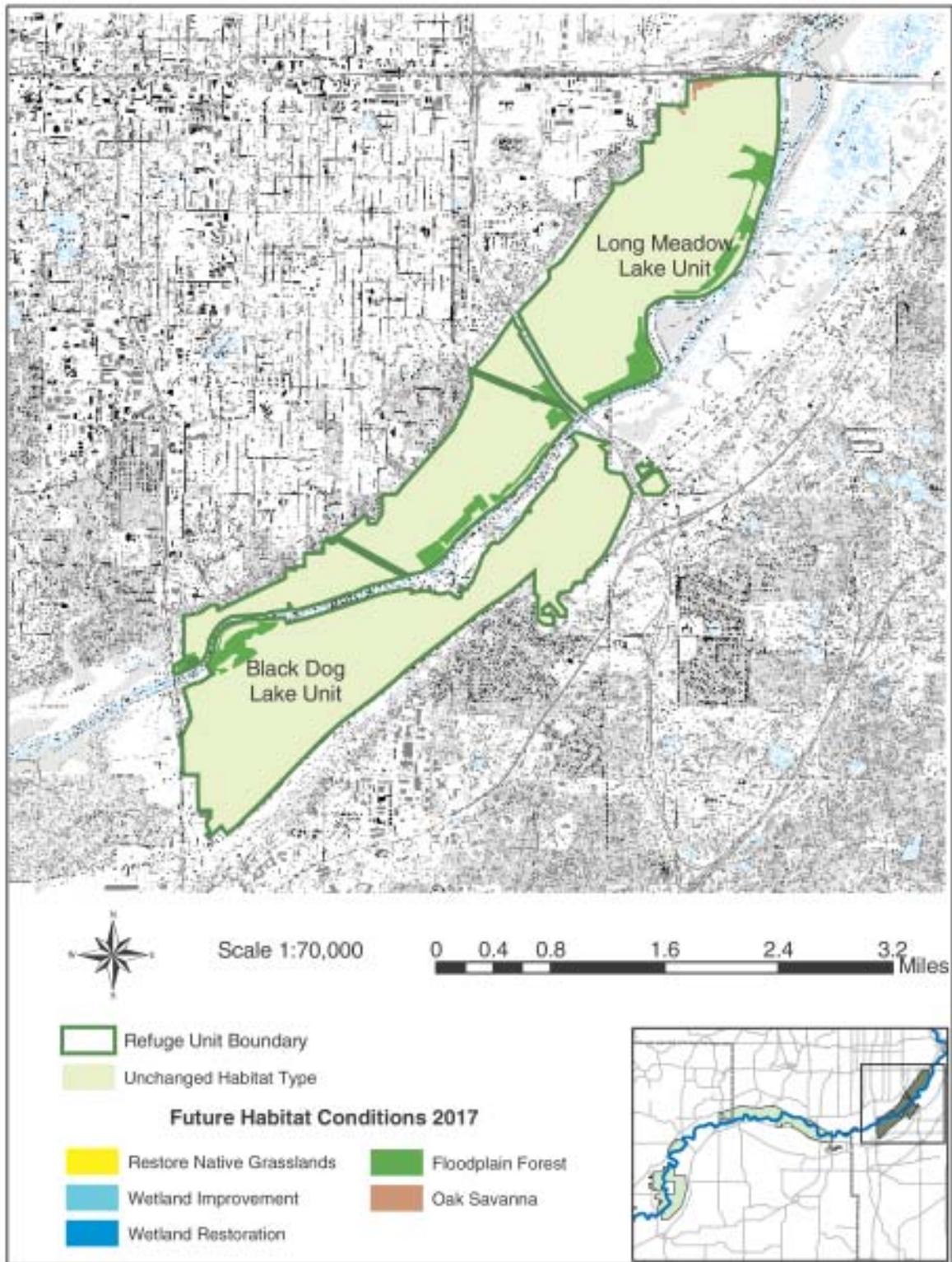
#### Goal 1. Floodplain Forest:

*To restore, protect, and maintain natural species diversity while emphasizing priority wildlife and plants characteristic of floodplain forests within the northern tallgrass prairie ecosystem.*

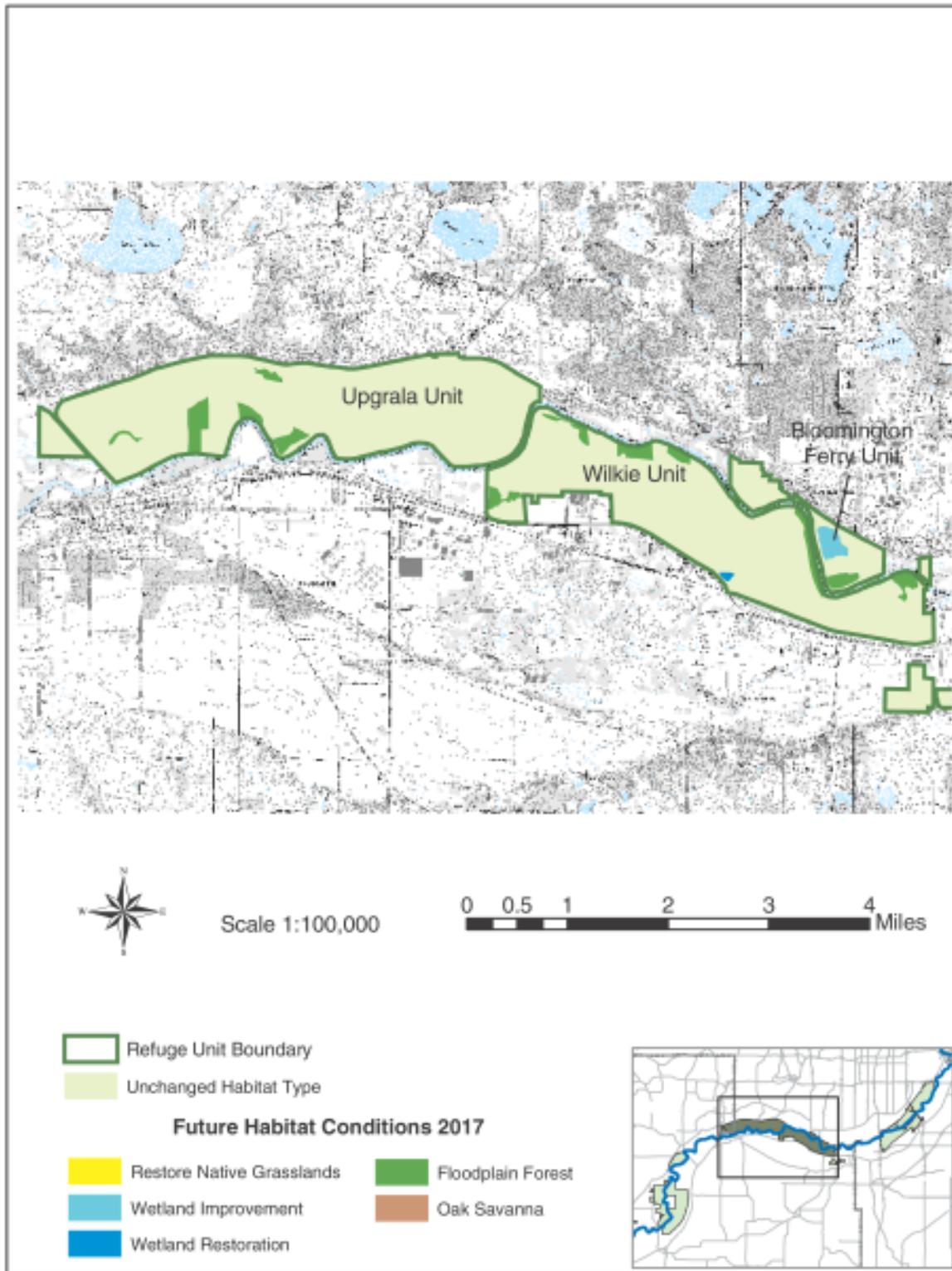
**Discussion:** The forested floodplain of the Minnesota River Valley provides migration and production habitat for several bird species that are significant locally or are included in the Region 3 Regional Conservation Priority list. These include the Red-headed Woodpecker, Red-shouldered Hawk and Wood Duck. Numerous songbird species nest within or migrate along floodplain forests. Bald Eagles also use floodplain forests on the Refuge or throughout the Wetland Management District for either migration or nesting habitat. Wading birds, such as the Great Blue Heron and Black-crowned Night-Heron, nest in colonies within the floodplain. These colonial nesting sites are vulnerable to human disturbance and destruction by high winds. The endangered dwarf trout lily also occurs in floodplain forests within part of the Wetland Management District.

**1.1 Objective:** By 2017, provide 4,700 acres of floodplain forest along the Minnesota River and major tributaries to benefit Bald Eagles, cavity-nesting birds such as Wood Ducks, colonial-nesting wading birds and rare plant communities (Figures 9-12).

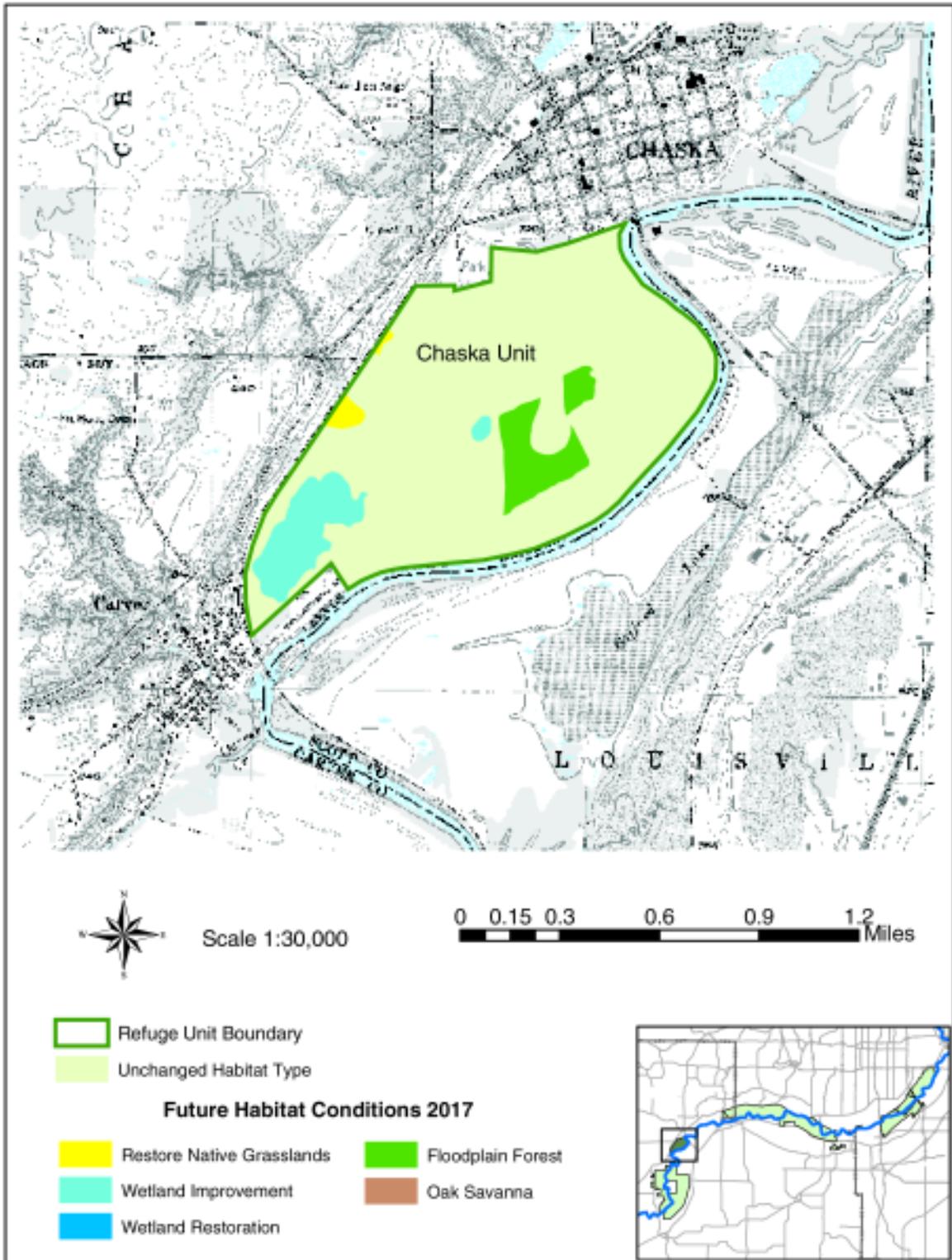
**Figure 9: Future Habitat Conditions (2017) Long Meadow Lake and Black Dog Units**



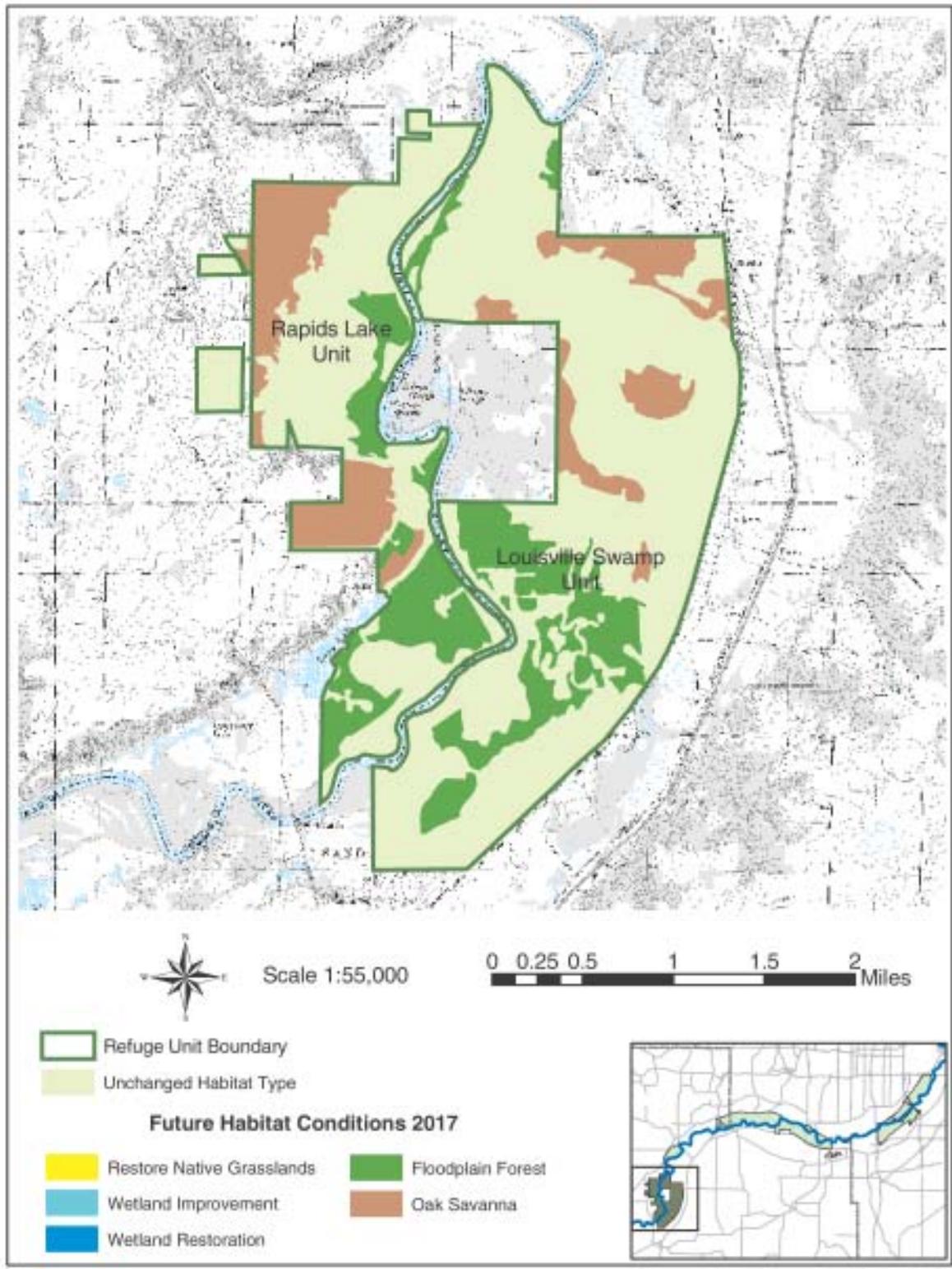
**Figure 10: Future Habitat Conditions Upgrala, Wilkie and Bloomington Ferry Units**



**Figure 11: Future Habitat Conditions Chaska Unit (2017)**



**Figure 12: Future Habitat Conditions Rapids Lake and Louisville Swamp Units (2017)**



*Note:* The acreage estimate includes lands within the authorized boundary of the Refuge only. New Refuge Units along the Minnesota River would provide additional floodplain forest habitats.

*Strategies:*

- 1.1.1 Through research and investigation, determine the long-term viability of the floodplain forest community that exists on Refuge lands.
- 1.1.2 Employ a senior wildlife biologist (GS 11/12). This position will benefit all of the biological goals set forth in this CCP.
- 1.1.3 Continue to acquire important floodplain forests that provide valuable wildlife habitats within the Minnesota River Valley and throughout the Wetland Management District. Where possible, block sizes greater than 100 acres should be acquired.
- 1.1.4 Protect existing Bald Eagle nests and heron and egret nesting colonies from human disturbance throughout the breeding season.
- 1.1.5 Complete a forest management plan by 2005 that establishes long-term objectives for each block of floodplain forest that exists on Refuge Units.
- 1.1.6 Using native species from a tree nursery and root propagation methods, continue to restore no fewer than 100 acres of floodplain forest each year until all potential floodplain forest is restored.
- 1.1.7 Develop a root propagation nursery using local sources of tree species.
- 1.1.8 Develop and implement a floodplain forest monitoring protocol designed to assess restoration success, vegetative changes, and wildlife response.

Goal 2. Wetlands:

*To restore, protect, and maintain natural species diversity while emphasizing priority fish, wildlife and plants characteristic of wetlands within the northern tallgrass prairie ecosystem.*

**Discussion:** Refuge and District wetlands contribute migration and production habitat for waterfowl, waterbirds, and shorebirds. Several of these key species are regional conservation priorities including the Mallard, Blue-winged Teal, Canvasback, Wood Duck, American Bittern, and Black Tern. Other wildlife species of local significance that use these wetlands include Great Blue Heron, Great Egret, river otter, mink, muskrat and several amphibian species. Floodplain and riverine wetlands located on the Refuge also provide important spawning and nursery habitats for resident fish.

**2.1 Objective:** By 2017, provide 7,400 acres of wetlands within the floodplain of the Minnesota River and 4,600 acres of prairie pothole wetlands in the Wetland Management District to benefit priority waterfowl species, marsh, shore and wading birds and healthy aquatic ecosystems.

*Note:* The acreage estimates include lands within the authorized boundary of the Refuge and existing and future Waterfowl Production Areas. New Refuge units along the Minnesota River would provide additional wetland acres.

*Strategies:*

- 2.1.1 Maintain the productivity of Refuge wetlands through the installation of water control structures and the active management of water levels through an annual water management plan.
- 2.1.2 Continue to actively manage wetlands, wet meadows, and fens located on Refuge and Wetland Management District lands through periodic prescribed burning to control invasion of brush and other woody vegetation.
- 2.1.3 Continue to seek Environmental Management Program funding and other sources of funding to improve, maintain, restore, and manage wetland habitats on Refuge.
- 2.1.4 Develop monitoring protocols to determine effectiveness of wetland management actions upon vegetative diversity and use by wildlife.
- 2.1.5 Continue to acquire important wetlands and associated habitats for both the Refuge and Wetland Management District.
- 2.1.6 Manage and protect the Savage Fen Unit, in cooperation with the MnDNR and others, for as long as the Refuge administers the area.
- 2.1.7 Inventory aquatic species (fish and macro-invertebrates) in Refuge streams, creeks and lakes using volunteers, students, and Refuge staff. Biologists from the Service's Fishery Resource Office in LaCrosse, Wisconsin, will conduct sampling surveys at least once every 5 years to detect trends in fish abundance and distribution.
- 2.1.8 Restore Continental Grain berm along Eagle Creek to prevent creek degradation.
- 2.1.9 Develop and implement a comprehensive water quality monitoring program designed to obtain baseline information and document impacts of storm water events and other adjacent land uses upon Refuge wetland flora and fauna.

- 2.1.10 Work with partners and continue to identify and seek funding for a variety of research and monitoring projects associated with the Refuge and WMD. More specifically, support the 3-year study entitled “Land Stewardship, Habitation Protection, and Avian Occurrence in the Minnesota Valley National Wildlife Refuge and Wetland Management District.” Likewise, continue to support the development of a multi-faceted GIS for the Refuge and WMD.
- 2.1.11 Seek operational funds to employ up to two biological technicians (GS-404-5/7) to address the District’s workload.
- 2.1.12 Obtain operational funds to employ a maintenance worker (WG-4749-6/7) to assist in restoring and maintaining Wetland District fee and easement lands.

**2.2 Objective:** Control and ultimately reduce the distribution of exotic plant species on wetlands primarily through biological control methods.

*Strategies:*

- 2.2.1 Continue to monitor and release purple loosestrife beetles into Refuge wetlands where purple loosestrife exists.
- 2.2.2 Control the spread of purple loosestrife using biological control methods such as purple loosestrife beetles (*Galerucella* sp.). In cooperation with others, establish a purple loosestrife field nursery to be used as a source of beetles for release on Refuge, Wetland Management District, and other suitable locations.
- 2.2.3 Within staff and time limitations, seek methods to reduce and control the presence of giant reed grass (*Phragmites*) that exists on Refuge lands.



Photograph by Scott Sharkey

**2.3 Objective:** Control wildlife populations at levels consistent with available habitat to address public safety concerns and to allow effective management of wetlands.

*Strategies:*

- 2.3.1 For aircraft safety reasons, continue to cooperate with the Metropolitan Airports Commission in the removal of Canada Geese from the Long Meadow Lake Unit.
- 2.3.2 Continue to use trapping as a management tool to control beaver populations.

**2.4 Objective:** Maintain Round Lake at full basin water level (2001 level) to provide migration habitat for Bald Eagles, waterfowl such as Canvasbacks, and Common Loons. Maintain the capability to actively manage water levels in the future upon assurances that periodic drawdowns and reflooding would not cause undue risk to the ecosystem.

**Discussion:** The 152-acre Round Lake Unit is adjacent to the dismantled Twin Cities Army Ammunition Plant in Arden Hills, Minnesota. The Unit is bounded on the west by industrial development and on the south and east by private homes. The deep sediments of the 120-acre permanent wetland have elevated concentrations of heavy metals including zinc, chromium, and cadmium. In addition, two storm water sewers enter Round Lake which may impact water quality.

The shallow lake is an open body of water and aquatic emergent plants are limited to a narrow fringe of cattail, slender bulrush, and water lily. An existing water control structure provides water level management capabilities and the potential for periodic drawdowns to enhance emergent plant growth for wildlife food and cover. However, water levels for Round Lake have been maintained at a constant level over the past 15 years due to concerns of neighboring landowners and the potential for exposing contaminated sediments.

*Strategies:*

- 2.4.1 Assist the U.S. Army and other agencies with studies to determine the threat, if any, of contaminants on aquatic communities.
- 2.4.2 Develop partnership with educational institutions in the area, such as the nearby Bethel College, to monitor water quality, migratory bird use and collect baseline wildlife data.
- 2.4.3 Maintain year-round closure of lake to fishing and boating.
- 2.4.4 Maintain the existing partnership with the City of Arden Hills to provide trail connection through the west side of the unit to complement the City's trail system and to facilitate wildlife observation.

Goal 3. Upland Forest:

*To restore, protect, and maintain natural species diversity while emphasizing priority wildlife and plants characteristic of upland forests within the northern tallgrass prairie ecosystem.*

**Discussion:** Upland forests, primarily those located along the bluffs of the river valley, provide migration and production habitat for several species of songbirds that are significant locally or are included in the Region 3 RCP list. Among these species are Red-headed Woodpecker, Northern Flicker, and Wood Thrush. Several locally or regionally significant raptors also use upland forests on the Refuge or throughout the Wetland Management District for either migration, nesting, and in some cases wintering habitat. These species include the Bald Eagle, Red-shouldered Hawk, and Long-eared Owl. The endangered dwarf trout lily also occurs in upland forests within part of the Wetland Management District.

**3.1 Objective:** By 2017, provide 1,000 acres of upland forest along the Minnesota River, in 50-acre or larger blocks throughout the Wetland Manage-



ment District, to ensure migration and nesting habitat for Bald Eagles, Red-headed Woodpeckers and songbirds.

*Note:* The acreage estimates include lands within the authorized boundary of the Refuge and existing and future Waterfowl Production Areas. New Refuge Units along the Minnesota River would provide additional upland forest habitats.

*Strategies:*

- 3.1.1 Through research and investigation, determine the long-term viability of the upland forest community that exists on Refuge lands.
- 3.1.2 Continue to acquire upland forest habitats within the Minnesota River Valley and throughout the Wetland Management District. Block sizes greater than 100 acres should be a priority for acquisition.
- 3.1.3 Complete a forest management plan by 2005 that sets long-term objectives for each block of hillside forest that exists on Refuge Units.
- 3.1.4 Plant a shrub understory using native species from a tree nursery and/or root propagation nursery.

**3.2 Objective:**

Control and ultimately reduce the distribution of exotic plant species on upland forests primarily through biological control methods.

*Strategy:*

- 3.2.1 To the extent possible, and with the use of volunteer and youth groups, seek to control and reduce the distribution of European buckthorn in forested areas through hand cutting and treatment with chemicals.

**3.3 Objective:**

Control wildlife populations at levels consistent with available habitat to address public safety concerns and to allow effective land management.

*Strategy:*

- 3.3.1 In cooperation with the MnDNR and local communities, maintain whitetail deer populations at levels consistent with the carrying capacity of available habitat. Allow public hunting where feasible and sharpshooting when needed to maintain populations of 15-25 deer per square mile.

Goal 4. Grasslands and Oak Savanna:

*To restore, protect, and maintain natural species diversity while emphasizing priority grassland-dependent wildlife and plants characteristic of the northern tallgrass prairie ecosystem.*

**Discussion:** Refuge and Wetland District grasslands, especially those within the uplands of Waterfowl Production Areas, have the potential to provide benefits for birds that require large blocks of grasslands for nesting success and population viability. Oak savannas, historically found throughout the Minnesota River Valley, also afford critical habitat for some of these birds. This is important because populations of many Region 3 Regional RCP “grassland” bird species, such as Bobolink, Grasshopper Sparrow and Eastern Meadowlark have shown steady declines over the last 35 years. Large grassland patches (over 250 acres), or smaller connected grasslands or those in proximity to other non-forested habitats, provide the best nesting conditions for many area-sensitive bird species. Larger grassland blocks will also increase the nesting success of RCP waterfowl such as Mallards and Blue-winged Teal. In addition, several reptile and butterfly species of Special Concern in the State of Minnesota, such as five-lined skink, racer, gopher snake and western hognose snake, and the Arogos, Leonardus, and Powesheik Skippers will benefit from native grassland management.

**4.1 Objective:** By 2017, provide 800 acres of original native prairie and 8,700 acres of restored native grasses in block sizes of over 50 acres and with varying grass height, density and grass/forb ratios to benefit grassland-dependent wildlife such as Boblinks, Grasshopper Sparrows and five-lined skinks.

*Note:* The acreage estimates include lands within the authorized boundary of the Refuge and existing and future Waterfowl Production Areas. New Refuge Units along the Minnesota River would provide additional native grasslands.

*Strategies:*

- 4.1.1 Maintain the vigor and productivity of Refuge grasslands by emphasizing the use of a progressive prescribed burning regime under the Fire Management Plan. On an annual basis, burn no less than 1,500 acres located on the Refuge and District.
- 4.1.2 Assess newly-acquired lands as to their suitability for conversion to native grassland and initiate appropriate conversion practices.
- 4.1.3 Monitor wildlife and vegetation response using procedures developed in the Refuge’s Inventory and Monitoring Plan.
- 4.1.4 Initiate or continue oak savanna restoration efforts on the Louisville Swamp, Wilkie and Rapids Lake units through removal of unwanted trees and a progressive prescribed burning regime.

- 4.1.5 Establish prairie and forb nurseries using local ecotype seeds for harvesting and use in restoration of native prairie.
- 4.1.6 Identify hillside “goat” prairies on the Refuge and maintain or restore as necessary. Methods would include brush removal by volunteers and prescribed burning by trained staff.

**4.2 Objective:** Control spread and ultimately reduce the distribution of exotic or nuisance plant species on grasslands and oak savannas primarily through biological control methods.

*Strategies:*

- 4.2.1 Control spread of invasive woody plant species and noxious weeds using accepted methods such as mechanical, chemical and biological control.
- 4.2.2 Consistent with the Exotic Species Management Plan prepared for the Refuge, identify and map locations of all existing exotic species infestations.
- 4.2.3 Continue to release and monitor leafy spurge beetles at sites infested with leafy spurge.
- 4.2.4 Control the spread and distribution of spotted knapweed through the use of biological control methods.
- 4.2.5 In cooperation with the U.S. Department of Agriculture and the Minnesota Department of Agriculture, collect leafy spurge beetles that are not needed by the Refuge for release at non-Refuge locations.

Goal 5. Land Protection:

*To enhance the integrity of lands within the authorized boundary of the Refuge and contribute to the protection and restoration of fish and wildlife habitats within the Minnesota River watershed.*

**5.1 Objective:** By 2017, achieve the appropriate conservation status necessary for permanent protection and management viability of any remaining lands within the original authorized boundary. This will also address existing and future threats to resources within the authorized Refuge boundaries.

*Strategies:*

- 5.1.1 Seek Congressional appropriations and other sources of funds to purchase the Upgrala tract plus any remaining lands within the original authorized Refuge boundary.
- 5.1.2 In cooperation with the State of Minnesota, seek to transfer the 54-acre Minnesota Department of Transportation (former Northwest Airlines) tract into the Refuge.

- 5.1.3 Consistent with early correspondence between the Regional Director and the Commissioner of Minnesota Department of Natural Resources, explore the possibility of exchanging Service ownership of the Savage Fen with other lands administered by the MnDNR.
- 5.1.4 Continue to work cooperatively with cities, counties, developers, and others to address external threats and to avoid future impacts to Refuge flora and fauna due to development of neighboring lands.

**5.2 Objective:**

By 2017, and in cooperation with many others, contribute to the restoration of the Minnesota River by acquiring fee or conservation easements on up to 10,737 additional acres of quality fish and wildlife habitat within or adjacent to the Minnesota River Valley beyond the existing Refuge boundary and proceeding upstream to Mankato, Minnesota.

*Discussion:* Local communities and state agencies have worked together for years to restore and protect the unique natural qualities of the Minnesota River Valley. Efforts within the last decade have focused on reducing the sediment and pollutant load within the river to make it “swimmable and fishable” as soon as possible. The Service would like to contribute to that effort. The river and its riparian habitat is important to Federal trust species such as waterfowl, migratory songbirds and endangered plants. Land acquisition for new refuge units, either in fee or through conservation easements, and subsequent habitat restoration is one way the Service can contribute to the collective goal of a clean river and abundant and healthy fish, wildlife and plant communities.



Photograph by Scott Shankley

Numerous participants during the CCP public scoping process encouraged us to consider land acquisition upriver. The environmental assessment included with this CCP (Appendix A) and Land Protection Plan (Appendix I) provide agency decision makers and the public with an analysis of management alternatives, including refuge expansion. **Please see the Land Protection Plan for descriptions and maps of proposed new Refuge units.**

*Strategies:*

- 5.2.1 From the amount identified above, use Trust funds to acquire no less than 4,090 acres in order to satisfy airport mitigation settlement requirements.
- 5.2.2 Make a concerted effort to leverage all land acquisition funding with those of other programs such as the Wetland Restoration Program, North American Wetlands Conservation Act (NAWCA), Conservation Reserve Enhancement Program, and Reinvest in Minnesota.