

# Midwest-Great Plains Region

Missouri, Kansas, Indiana, Ohio, Michigan, Wisconsin, Illinois, Iowa, Nebraska, Minnesota, South Dakota, North Dakota, Wyoming, Montana



# Blackfoot Challenge

## Restoring the River That Runs Through It

**Location:** West-central Montana, Blackfoot River Watershed

**Project Summary:** A diverse array of partners coalesced around watershed-wide, citizen-based efforts to protect a river famous for its scenic and recreational values.

PHOTO COURTESY BLACKFOOT CHALLENGE



Citizens learn about the Blackfoot River watershed.

### Resource Challenge

Montana's Blackfoot River, made famous by the 1992 movie, *A River Runs Through It*, has become one of the State's most popular sites for fishing, rafting and other activities. Its notoriety and its proximity to the fastest-growing region of the State have intensified its use.

Increasingly, this use is threatening the natural resources and rural lifestyle that make the Blackfoot River Valley a special place. Local landowners and users are concerned about the loss of intact landscapes and a decline in environmental quality. They are also worried that they may lose their traditional livelihoods and rural way of life. To coordinate efforts to address these concerns, they formed the Blackfoot Challenge, a 1.5-million-acre watershed organization. The partnership now includes more than 500 individual and organizational members.

### Examples of Key Partners

More than 500 private citizens, landowners and ranchers; 7 federal agencies, 29 corporations and businesses, 45 state and local agencies, 17 foundations, and 31 nonprofit organizations.

### Results and Accomplishments

- Weeds management—GIS mapping on 474,727 acres with 34 percent under active weed and grazing management.
- Large landscape protection—89,000 acres of private lands under perpetual conservation easements.
- Streams restoration—39 tributaries, including 38 miles of instream restoration and 62 miles of riparian restoration.
- Habitat improvement—2,600 acres of wetlands and 2,300 acres of native grasslands restored.

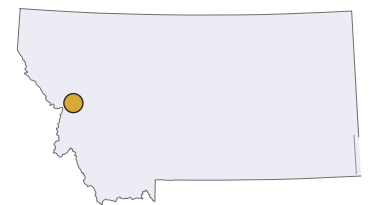
- Water conservation—75 irrigators and recreational outfitters voluntarily participated in emergency drought response.
- Fisheries improvements—removed fish passage barriers affecting 460 miles of stream and installed 13 self-cleaning screens on irrigation ditches.
- Community involvement—community-driven plan directing the resale of 88,000 acres of corporate timber lands.
- Human-wildlife conflicts reduced—93 landowners removed more than 350 animal carcasses in 2005; built 14,000 linear feet of electrified predator-friendly fencing; fenced 60 percent of apiary yards; installed 80 bear-resistant dumpsters.
- School involvement—teachers and students from all schools were engaged in watershed education.
- Community networking—at least 500 people were involved in Blackfoot committees, education outreach, and tours. Blackfoot Challenge webpage and newspaper articles reached 2,759 households and more than 60 partners.
- The Lewis and Clark Return Trail—now mapped and accessible through three gateway kiosks.

### Innovation/Highlight

Shared a ridge-top to ridge-top conservation vision and management ideal built on a foundation of inclusiveness and trust, on-the-ground conservation results, using the available tools, and showing appreciation for all participants.

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# The Calumet Initiative

**Healthy Economy, Healthy Environment,  
Healthy Communities**

**Location:** Southeast Chicago, Northwest Indiana

**Project Summary:** A coalition working to revitalize both the Rustbelt economy and the significant ecological riches of Calumet.



**Black-crowned night heron chick—preserving habitat for this locally rare bird is a Calumet Initiative priority.**

## Resource Challenge

Long before the Calumet Region became a booming center of steel production, it was part of the most extensive network of wetlands in the Midwest.

Today, two decades after the decline of the steel industry, Calumet bears a legacy of both environmental riches and industrial scars. A short drive would reveal bird-filled marshes, abandoned factories, slag heaps, popular riverfront fishing spots, active industries, landfill “hills,” and patches of forestland. While the region’s residents struggle with limited economic opportunities and share serious concerns about pollution, they are also proud of the remaining natural areas and the local industrial heritage.

The Calumet challenge is to bring creativity and innovation to the task of revitalizing the local economy and environment. Calumet Initiative partners share this goal—local residents, planners, researchers, citizen scientists, government officials, educators and businesses are helping to create a new vision for the region’s social, economic, and environmental future.

## Examples of Key Partners

Chicago Departments of Environment, and Planning & Development, Illinois Department of Natural Resources & Scientific Surveys, USDA Forest Service, US Environmental Protection Agency (EPA), USDI Fish and Wildlife Service (FWS), Ford Motor Company, Southeast Environmental Task Force, Field Museum of Natural History, Lake Calumet Ecosystem Partnership, Chicago State University, Chicago Wilderness, City of Hammond, and many others.

### Innovation/Highlight

**Merging citizen action, cutting-edge green infrastructure, research, environmental education, and job creation to revitalize the Calumet rustbelt region.**

## Results and Accomplishments

- The 2002 Calumet BioBlitz launched the Calumet Stewardship Initiative. Well over 250 scientists and volunteers identified more than 2,200 species at two Calumet sites in a 24-hour period.
- The *Calumet Area Land Use Plan*, which won multiple awards for excellence in planning, lays out a big picture vision of future land use in the region.
- The *Calumet Area Ecological Management Strategy* outlines features to preserve, improve, or create critical natural areas around Lake Calumet.
- Government agencies collaborated to create “Ecotox”—ecological health standards for site cleanup that mirror human health standards.
- The new Chicago Manufacturing Campus saves energy and reduces emissions, while enabling just-in-time parts manufacturing for the nearby Ford auto plant. The Campus won two 2004 Phoenix Awards for excellence in brownfield redevelopment. Ford also funded the reconfiguration of nearby Indian Creek to improve its ecological health and viability. In addition, Ford donated \$6 million to help build and support a Calumet environmental education center.
- Preservation of the Acme Steel Coke Plant in Chicago and other grassroots-initiated projects have caused some to consider the idea of creating an industrial museum to illustrate the history of steel-making.

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(click on Calumet Initiative link)



# Cheney Lake Water Quality Project

## City Funds Supplemental Cost-Share to Improve its Water

**Location:** South Central Kansas

**Project Summary:** Farmers, the City of Wichita, and the Natural Resource Conservation Service (NRCS) and the Environmental Protection Agency (EPA) partnered to fund and implement conservation practices to clean and protect the city's water supply at Cheney Lake.



**Cheney Watershed staff reviewing alternative livestock watering system with watershed producer.**

### Resource Challenge

The North Fork of the Ninescah River flows east across south central Kansas. In the mid-1960s, Cheney Reservoir was constructed at the lower end of the river to supply water to the City of Wichita, and to provide recreation and flood control. Today, Wichita draws 70 percent of its water from the reservoir.

The Cheney Lake Watershed (CLW), or more specifically, the north fork of the Ninescah River, covers 633,000 acres across five Kansas counties. More than 99 percent of the watershed is agricultural, ranging from small dairy farms, crops, and livestock, to large acreages of irrigated rangeland.

In 1992, an algae bloom erupted in Cheney Lake, arousing citizen complaints about the poor taste and odor of their water. Excess phosphorus and sediment were to blame for most of the reservoir's problems, much of it coming from poor farming practices. The Reno and Sedgwick County Conservation Districts teamed with Wichita to address the problem. This led to the formation of the non-profit organization, CLW Inc., which provides water quality education and facilitates funding for clean water projects.

### Examples of Key Partners

CLW Inc., Reno County Conservation District (lead); Pratt, Stafford, and Kingman County Conservation Districts; City of Wichita, USDA Natural Resources Conservation Service (NRCS), U.S. Environmental Protection Agency (EPA).

### Innovation/Highlight

**The community created a cost-share program to supplement Federal cost-share funds, providing technical and financial assistance to farmers to implement conservation practices on their land.**

### Results and Accomplishments

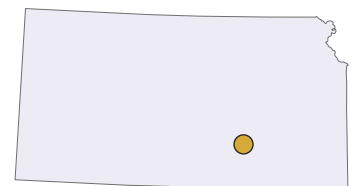
Conservation districts facilitated an agreement with the City of Wichita, which pledged money to supplement federal cost-share funds available to farmers for conservation practices, and to pay for contract labor. The Reno County Conservation District and CLW Inc. administer the program. NRCS offers technical assistance to help producers plan and implement conservation practices to protect water quality.

Since January 2003, more than \$200,000 in state and federal cost-share assistance and more than \$100,000 in city funds have been invested in conservation practices. Watershed farmers and ranchers matched those funds with more than \$75,000. Federal funds came from two sources: \$66,626 from USDA's Environmental Quality Incentives Program and Wildlife Habitat Incentives Program, and \$25,290 from the U.S. Environmental Protection Agency (EPA) for conservation demonstrations. State cost-share programs added an additional \$119,562.

Watershed farmers, working through a Citizen's Management Committee, share information with their neighbors in small, informal meetings or in daily interactions, encouraging a high level of voluntary action. More than 2,000 projects have been successfully completed.

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# Chicago Wilderness

## World-class Nature Survives Around the Windy City

**Location:** Greater metropolitan Chicago region

**Project Summary:** An unprecedented partnership of 182 public and private organizations working to protect, restore, and manage the biological diversity of the Chicago region.



**Restoring natural fire to prairies and savannas is a thing of necessity—and wonder.**

### Resource Challenge

The Chicago region supports regionally and globally significant natural communities, including some of the best examples of tallgrass prairie and oak savanna. Nearly 200 state and federally listed endangered and threatened species occur in the region.

However, the ecological health of these communities is threatened by invasive species, fragmentation, changes in water flows, decades of fire suppression, and unsustainable development practices. A key challenge is engaging an urban and suburban populace that, for the most part, does not understand basic biological processes and has few encounters with wild nature.

The Chicago Wilderness consortium was formed in 1996 to more effectively sustain, restore, and expand the region's remnant natural communities. The work is accomplished through collaborations of Chicago Wilderness member organizations and the thousands of volunteers who work with them.

### Examples of Key Partners

USDI Fish and Wildlife Service, USDA Forest Service, Environmental Protection Agency, Illinois Department of Natural Resources, City of Chicago, Field Museum of Natural History, Brookfield Zoo, The Nature Conservancy, Openlands, Audubon- Chicago Region, the MacArthur Foundation, Boeing, other foundations and corporations, and more than 170 other public and private organizations.

### Innovation/Highlight

**Establishing a genuine, regionwide collaboration and transcending institutional and political boundaries to share resources and apply expertise toward the common goal of conserving biodiversity.**

### Results and Accomplishments

Since 1996, the consortium has embarked on more than 180 collaborative projects stretching from southeastern Wisconsin to the Indiana dunes, including:

- Producing a comprehensive regional Biodiversity Recovery Plan.
- Publishing an *Atlas of Biodiversity* and distributing more than 30,000 copies.
- Developing a regional monitoring plan.
- Assessing the ecological health of the region's oak woodlands and savannas.
- Developing teacher training hubs and curricular materials based on state standards.
- Developing a prescribed burning protocol and sponsoring burn training for more than 200 people since 2001.
- Establishing the *Mighty Acorns* program combining classroom instruction with hands-on stewardship on public lands. More than 8,000 elementary school students participate each year.
- Creating a Green Infrastructure Map to identify resource rich areas for protection and to promote conservation-minded development.
- Publishing *Protecting Nature in your Community* as a tool to help local governments incorporate biodiversity conservation design features into new developments.
- Developing sustainable design principles and model ordinances for adoption by municipalities, and supporting a Sustainable Watershed Action Team to work with local governments on plans for growth.
- Publishing *Chicago WILDERNESS Magazine*, distributed to 180 retail locations and 7,500 paid subscribers.

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# Conservation Security Program in the St. Joseph Watershed

## Rewarding Landowners for Good Conservation Practices

**Location:** Indiana, Michigan, Ohio

**Project Summary:** The Conservation Security Program in the St. Joseph Watershed rewards agricultural landowners for superior conservation and stewardship practices.

PHOTO COURTESY MICHIGAN NRCS



**A newly installed filter strip on CSP contracted land in Hillsdale County, Michigan.**

### Resource Challenge

The St. Joseph Watershed, located in Northeast Indiana, Northwest Ohio, and South-Central Michigan, covers 694,000 acres, about 79 percent of which is in agricultural production. The River supplies drinking water to about 200,000 people around Fort Wayne, Indiana. Pollution problems include sediment, pesticide residues, excess nutrients, and pathogens. Water analyses have found potentially harmful pathogens throughout the watershed, most coming from inadequate residential sewage systems, livestock waste, and natural sources.

To spur the application and maintenance of conservation practices on private agricultural land, the USDA began the Conservation Security Program (CSP) in 2004. The St. Joseph Watershed was one of 22 included in the first year of the program. Producers in designated watersheds can sign up for CSP.

The program is unique in several ways:

- CSP rewards agricultural landowners for the environmental practices they already have in place.
- The voluntary, incentive-based program rewards landowners for their stewardship accomplishments over a period of time.
- Only producers who employ sound land stewardship practices are eligible to participate. Applicants complete a self-evaluation of their conservation practices prior to signing up

### Examples of Key Partners

Private agricultural landowners, USDA Natural Resources Conservation Service (NRCS), Soil and Water Conservation Districts for Allen, Dekalb, Noble, and Steven Counties in Indiana; Branch and Hillsdale Counties in Michigan; and Defiance and Williams Counties in Ohio.

### Results and Accomplishments

- 218 landowners/producers obtained CSP contracts covering 111,123 acres, including 109,585 acres of croplands.
- Participants sign contracts and receive payments over a 5 or 10 year period, helping to ensure that stewardship practices remain in place. The majority of producers have a 10-year contract.
- More than \$4 million was distributed to contract holders during 2004.
- More than \$1.5 million was paid to contract holders for making additional land stewardship enhancements. Most of these payments went to producers who already had the highest level of practices in place.

### Innovation/Highlight

**Landowners receive incentives based on cumulative stewardship practices in place, based on a self-assessment.**

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# Conserving Prairie Ranches, Ranchers, and Grassland Birds

## Ranchers Working to Conserve Prairie Habitats

**Location:** North Dakota, South Dakota, and Montana

**Project Summary:** A landscape-level project that uses purchased conservation easements to conserve native grasslands and wetlands vital to ranchers and grassland birds.

PHOTO BY JAMES K. RINGELMAN



**A duck nest located in the native grassland of North Dakota.**

### Resource Challenge

Ranchers and grassland birds both depend on healthy grass and water. Populations of grassland birds have experienced greater declines than any other avian group. Moreover, ducks and other waterfowl are the focus of great interest, with many of their populations below desired levels. Loss of grasslands and wetlands, and the resulting habitat fragmentation, are behind these population declines.

Despite the recent upturn in cattle prices, ranchers in the Dakotas and Montana face financial hurdles. New drought-tolerant, herbicide-resistant crop varieties, efficient farm implements, high commodity prices, and the financial safety net afforded crop producers have stimulated the conversion of grassland to cropland. Consequently, grassland available to ranchers is increasingly scarce and expensive.

Ducks Unlimited (DU), the USDI Fish and Wildlife Service (FWS), and other partners in the region have joined with ranchers who want to protect their wetlands and grasslands for livestock, wildlife, and future generations.

### Examples of Key Partners

DU, FWS, USDA Natural Resources Conservation Service, South Dakota Department of Game, Fish and Parks, North Dakota Game and Fish Department, North Dakota Natural Resources Trust, ranchers of the Dakotas and Montana.

### Results and Accomplishments

Ducks Unlimited and the FWS use simple conservation easements to protect critical prairie resources. Ranchers who enter into perpetual grassland easements are paid an amount equal to the difference between the value of their land as pasture and the potential value as cropland. Thus, ranchers realize much of the equity in their land without the need to plow grasslands. In exchange, they agree not to plow or otherwise destroy the grass, and to wait until after July 15th (the primary nesting season) to cut hay. Grazing and other uses are allowed. Landowners selling wetland easements are also fairly compensated, and agree not to drain, fill, or alter the wetland basin. However, when small wetlands become dry, as occurs naturally, farmers may plant crops in the wetland basin if they so desire.

More than 1,400 ranch families have partnered with wildlife conservationists to protect critical wetlands and grasslands in the Dakotas and Montana. More than 22,000 wetland easements have secured 8.75 million acres of critical breeding habitat for waterfowl and other wildlife. Many of these provide watering sources for livestock and hay for ranchers. Some 2,300 grassland easements, mostly on native prairie, have secured 570,000 acres of habitat for birds and pasture for ranchers.

### Innovation/Highlight

**Simple, purchased easements allow property to remain in private ownership as working land, yet retain critical resource values.**

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# Cuyahoga Valley Countryside Initiative

## Preserving National Park Farms Via Private Leases

**Location:** Northeast Ohio

**Project Summary:** Partnership is conserving living farms in harmony with National Park Service cultural and land stewardship values, and managing farms via private leases.

PHOTO BY HDA, 2005



Locally grown produce, fresh flowers, and other foods are available at the Countryside Farmer's Market.

### Resource Challenge

The 33,000-acre Cuyahoga Valley National Park (CVNP) was established to preserve the historic and scenic values of the Cuyahoga Valley. It includes 30 historic farmsteads and about 1,200 acres of historically farmed lands. It was not desirable—or financially feasible—for the USDI National Park Service (NPS) to preserve these historic farm properties as a “museum.” After grappling with this problem unsuccessfully for two decades, and witnessing the deterioration of many of the vacant farms, CVNP conceived of and implemented a new partnership: The Cuyahoga Valley Countryside Initiative. They created a new non-profit partner, the Cuyahoga Valley Countryside Conservancy, to bring sustainable farming expertise, external funding, and management capacity to the NPS. Their plan was to competitively recruit private individuals to lease and manage historic farm properties from the NPS.

### Examples of Key Partners

CVNP, Cuyahoga Valley Countryside Conservancy, private farm lessees, Heritage Farms, the Village of Peninsula, the City of Akron, University Park Alliance, The Akron Beacon Journal, USDI National Park Service, and others.

### Results and Accomplishments

The Countryside Initiative has established long-term leases with private individuals on three of the Park's historic farms. Working closely with the NPS and Countryside Conservancy staff, lessees have invested several hundred thousand dollars of private funds into capital improvements and sustainable farm operations, which are conducted in a manner consistent with resource stewardship

in a National Park setting. This level of commitment is possible because of 60-year leases, which give lessees the incentive to make long-term land stewardship and capital improvements. Besides the value of private investment, the NPS receives fair market value rent on both the residence and farm income from these properties, turning public liabilities into revenue-generating assets, while at the same time preserving an important cultural landscape in a creative, cost-effective manner. In 2005, four more farm properties will be leased, with the ultimate goal of 25-30 properties managed through this program.

The Countryside Initiative has also been integrated into CVNP's interpretive programming, affording opportunities to establish dialogue with the public on sustainability topics. In October 2004, the Superintendent of CVNP was awarded the National Park Service Director's Appleman-Judd Award for Cultural Resources Management for the CVNP Countryside Initiative Program.

### Innovation/Highlight

**A non-profit group recruits private individuals to lease historic farms from the National Park Service; these individuals then develop and maintain sustainable farming practices.**

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# Defense Mapping Agency Center/ National Imagery and Mapping Agency

## Site Remediation and Transfer on the Fast Track

**Location:** St. Louis County, Lemay, Missouri

**Project Summary:** Formerly used Defense site is being restored for economic development and conservation of significant wetland areas.



**An aerial view of the National Imagery and Mapping Agency in St. Louis, Missouri.**

### Examples of Key Partners

Federal Agencies: US Air Force Real Property Agency, General Services Administration (GSA), U.S. Environmental Protection Agency (EPA); State Government: Missouri Department of Natural Resources (MODNR); Local Governments: St. Louis County Executive, St. Louis County Port Authority; Non-government: St. Louis County Economic Council.

### Results and Accomplishments

With \$300 million in private investment, the Port Authority is planning a mixed-use gaming, retail, entertainment, and recreation center on the NIMA site and adjoining properties. The Air Force has declared the property excess to its needs, and GSA is currently completing its review to assure there are no other needs for the site. The goal is to complete the sale to the Port Authority by early 2006 to fast-track the property transfer and development. The Missouri Department of Natural Resources will then oversee the property's environmental characterization (assessment) and restoration. Characterization and restoration costs will be credited against the purchase price of the property. The project is expected to save money by synchronizing remediation with development activities at the site.

### Resource Challenge

In a blighted industrial area near the Mississippi River called Lemay, on the urban fringe of St. Louis, Missouri, lies a 39-acre property once used by the National Imagery and Mapping Agency (NIMA). Now abandoned, the property has both economic and environmental value. It is close to other developable areas and right-of-ways, and with significant wetlands, it offers an outstanding opportunity to protect and enhance the area's natural assets, promote economic development and local employment, and improve the quality of life for Lemay residents.

The property is currently unusable. The Air Force has forged a partnership to eliminate potential health and safety hazards, restore the property, and return it to productive use as quickly as possible. One of the partners, the St. Louis County Port Authority, has proposed developing the NIMA property and an adjoining property under Port Authority ownership. It envisions mixed-use commercial development coupled with restoration and conservation of critical natural resources. Recreation opportunities will include a link to an existing bike trail. A four-lane access road along the northern border of the NIMA property will open the landlocked adjoining Port Authority property, making the initiative possible. The NIMA reuse plan has been endorsed by residents of the nearby residential neighborhood.

### Innovation/Highlight

**Excess Air Force property will be used to boost economic development and environmental values in a blighted industrial area.**

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# Detroit River Conservation Partnerships

## Many Voices: Lessons Learned on the River

**Location:** Metropolitan Detroit, Michigan

**Project Summary:** A community comes together to address heavily polluted river corridors, while restoring wildlife habitat and preserving recreational uses.



**Detroit River holds international fishing tournaments, boasting the National record for the Professional Walleye Trail.**

### Resource Challenge

The Detroit River connects the Upper and Lower Great Lakes, forming a partial boundary between the United States and Canada. Flowing through one of the Nation's most heavily industrialized areas, the river corridor has lost 97 percent of its original coastal wetlands. Despite long-standing neglect, it supports 117 species of fish, millions of migratory birds, recreation, and other uses.

Historically, the Detroit River was a gathering place for wildlife, Native Americans, and European settlers. But over time, the river began to suffer from pollution and other negative impacts of industrialization. For many, that's the image that takes precedence over visions of glistening water and wildlife. But that image is no longer reality. Now, the River is once again a gathering place for wildlife and families. It is being recognized as an asset in enhancing the quality of life, an attribute essential to providing competitive advantage to communities and businesses in the 21st Century.

### Examples of Key Partners

USDI Fish and Wildlife Service, Greater Detroit American Heritage Rivers, Downriver Linked Greenways, DTE Energy, MI Sea Grant, Environment Canada, Metropolitan Affairs Coalition, Trust for Public Land, Friends of the Detroit River, City of Woodhaven, and many others.

### Innovation/Highlight

**Named an American Heritage River in 1998, the Detroit River became the first International Heritage River and center of the first international wildlife refuge.**

### Results and Accomplishments

- Created a \$25 million Greenways endowment.
- Humbug Marsh and Island, once slated for development, are now part of the International Wildlife Refuge.
- The initiative leveraged more than \$43 million, a 25:1 return on investment.
- The City of Detroit and General Motors Corporation raised more than \$500 million for riverfront redevelopment, including the Detroit River Walk and Michigan's first urban state park.
- Business leaders, environmentalists, foundations, and local citizens created partnerships for a regional system of greenway trails, with \$125 million worth of trails and associated improvements constructed to date.
- BASF transformed its 1,200-acre Fighting Island from a brine-disposal site to a wildlife sanctuary, earning Wildlife Habitat Council certification.
- DTE Energy signed the first cooperative management agreement with the Refuge for 656 acres, helped champion greenways and planted more than 23 million trees.
- Ford Motor Company spent \$2 billion to rebuild its Rouge Plant using "green design" principles.
- The U.S. Army Corps of Engineers donated 168 acres of coastal wetlands.
- Daimler-Chrysler Corporation contributed \$1.5 million towards the acquisition of land for a Refuge Gateway and visitor center.

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# Glacial Ridge Project, Partnership in Preservation

## Largest Prairie Reconstruction in the United States

**Location:** Northwestern Minnesota: Polk County, Northern Tall Grass Prairie Ecoregion

**Project Summary:** The Glacial Ridge Project, the country's largest grassland and wetland reconstruction effort, is returning Minnesota's prairie to its pre-settlement condition.

PHOTO © CHRISTINE HURATNC



**Wild prairie smoke flowers at Minnesota's Glacial Ridge National Wildlife Refuge**

### Resource Challenge

Less than one percent of Minnesota's original native prairie is intact. Habitat fragmentation is the most pressing challenge: the few prairies that do survive are often in isolated patches. Invasive species and fire suppression also take a toll on natural systems and the species that these prairies support.

In northwestern Minnesota, many of the remaining prairie patches are clustered around the Glacial Ridge Project. Part of the project is the 35,000-acre Glacial Ridge National Wildlife Refuge, established in 2004. The core of the new refuge is the more than 24,000 acres owned and managed by The Nature Conservancy. The Conservancy and its partners have embarked upon one of the largest prairie and wetland reconstruction projects in U.S. history. Glacial Ridge is a hub connecting numerous other natural areas, including 11 state wildlife management areas, two scientific and natural areas, three waterfowl production areas, and The Nature Conservancy's existing Pembina Trail Preserve.

Although 17,000 acres at Glacial Ridge have been altered by agriculture and gravel mining, the sheer size of the project and the small patches of native prairie that survive make Glacial Ridge an exceptional restoration opportunity.

### Examples of Key Partners

The Nature Conservancy, Bush Foundation, West Polk and East Polk County Soil and Water Conservation Districts, Minnesota Department of Natural Resources and other state agencies and commissions, Sandhill River, Polk and Red Lake Counties, corridor

groups and watershed districts, USDA Natural Resources Conservation Service, USDI Fish and Wildlife Service, many departments of the Cities of Crookston and Red Lake Falls, many local and state colleges and universities, and many other local, state and federal partners.

### Results and Accomplishments

The Nature Conservancy and its partners are transforming Glacial Ridge's fields and ditches and giving the land a chance to heal. Since restoration began in June 2001, land stewards, partners, and volunteers have replanted more than 6,000 acres in native prairie grasses, restored more than 45 wetlands, and filled eight miles of ditches. More than 7,000 acres have been enrolled in the Wetlands Reserve Program, and neighboring landowners have added to the project area by enrolling an additional 12,000 acres.

By the time this project is complete, Glacial Ridge will support more than 16,000 acres of native and restored tallgrass prairie and more than 8,000 acres of restored wetlands. The land will abound with grama and bluestem grasses, prairie chickens, sandhill cranes, marbled godwits, and northern harriers.

### Innovation/Highlight

**The Glacial Ridge Project Partnership created an endowment fund to pay property taxes into perpetuity.**

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# Greater Yellowstone Coordination Sustainable Operations Subcommittee

## Communities Take Charge to Protect Their Local Environment

**Location:** Wyoming, Montana, Idaho

**Project Summary:** The sustainable operations subcommittee promotes energy efficiency and waste and emissions reductions in the Greater Yellowstone Area (GYA).

PHOTO COURTESY YELLOWSTONE NATIONAL PARK



**Jenny Lake in Grand Teton National Park is one of the many lakes in the Greater Yellowstone Ecosystem.**

### Resource Challenge

The Greater Yellowstone Area (GYA) covers more than 14 million acres across Idaho, Montana, and Wyoming. A remote region with some of the world’s most spectacular parks, scenery, and wildlife, more than ten million seasonal residents and tourists visit each year.

The Greater Yellowstone Coordinating Committee (GYCC) began in 1964 when the USDI National Park Service and the USDA Forest Service signed a Memorandum of Understanding pledging to cooperate and to coordinate management of core lands in the GYA. The USDI Fish and Wildlife Service joined the Coordinating Committee in 2002.

Recently, the impact of human use on the region’s natural resources has come to the forefront: sustaining natural resources while accommodating millions of visitors is a daunting challenge. The GYCC created a new Sustainable Operations subcommittee to identify environmental risks, to promote sound environmental practices, and to integrate sustainable practices into the region’s activities.

### Examples of Key Partners

Six National Forests, two Fish and Wildlife Units, two National Parks, Municipalities of Bozeman, MT, Livingston, MT, Cody, WY, Jackson, WY, West Yellowstone, MT, and Idaho Falls, ID; Headwaters Cooperative Recycling, Inc., Yellowstone Business Partnership, Corporation for the Northern Rockies, and ethanol producers and consumers.

### Innovation/Highlight

The multi-interest committee is working jointly to reduce waste, energy consumption, and emissions throughout the greater Yellowstone region.

### Results and Accomplishments

The Sustainable Operations subcommittee partners have worked together to build a foundation of community involvement and support that has been critical to their success. The projects include:

- Headwaters Cooperative Recycling, Inc. provides recycling services to more than 35,000 square miles of Montana, Wyoming, and Idaho.
- After five years of work, a coalition of public and private stakeholders received the Department of Energy’s “Clean Cities” designation. Hundreds of public and private vehicles and stationary equipment were converted to blended fuels.
- The large concessions and communities in the GYA were instrumental in constructing the first Montana “Leadership in Energy and Environmental Design” (LEED) certified residence in Gardiner, MT.
- The parks and some gateway communities are demonstrating the latest in energy production. A small hydrogen fuel cell operates in West Yellowstone.
- A grassroots organization, Ethanol Producers and Consumers, promotes renewable fuels and supplies ethanol blended fuels to many public and government fuel stations.
- Yellowstone National Park received an Environmental Protection Agency grant in 1998 to investigate toxins. Because many were found in cleaning and janitorial products, the park is now using nontoxic cleaning products.

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# Great Lakes “Coaster” Brook Trout Restoration

## Returning the “Coaster” to its Former Range

**Location:** Lake Superior

**Project Summary:** Collaboration among federal and state governments, tribes, and private organizations to help bring the Coaster brook trout back to Lake Superior.



**Staff transferring coaster brook trout eggs from a hatchery into a prepared spawning bed in Whittlesey Creek.**

### Resource Challenge

Lake Superior’s “Coaster”—or “Coastal”—trout is a variant of the more common brook trout that has adapted to conditions in the lake. While not a listed species, it is distinct from the brook trout in size and color. Coasters are beautiful, colorful fish that live at least some of their life in the Great Lakes. Named because their favorite habitat is Lake Superior’s rocky shore line, coasters were favorites among 19th Century anglers. Populations declined because of over-fishing, habitat loss, human activities such as logging and mining, and the introduction of non-native fish that compete with the trout for food, shelter, and habitat.

Challenges to Coaster restoration include habitat loss, poor watershed conditions, extirpated populations of the trout due to over-fishing, and an altered landscape.

### Examples of Key Partners

USDI Fish and Wildlife Service (FWS), USDA Forest Service, USDI National Park Service, U.S. Geological Survey, Minnesota Sea Grant, Michigan Technological University, Northern Michigan University, University of Minnesota, Lakehead University, Trout Unlimited, Wisconsin, Minnesota, and Michigan Departments of Natural Resources; Ottawa and Superior National Forests, Chippewa Tribes (Red Cliff Tribe, Bad River Tribe, Grand Portage Tribe, and Keweenaw Bay Indian Community), Ontario Ministry of Natural Resources, and others.

### Results and Accomplishments

Partners are charting a shared direction for future research, management, and restoration. Efforts are underway lake-wide to improve scientific understanding and rehabilitation strategies. Specific accomplishments include:

- Brood stock is being developed at FWS hatcheries to produce fish for restocking.
- Stocking has greatly benefited the population at Isle Royale.
- Stocked Coasters are reproducing at Grand Portage.
- Habitat restoration is underway in the Salmon Trout River and other tributaries.
- States bordering Lake Superior have restricted recreational harvest of Coasters.
- All partners are engaged in outreach, a major focus of Trout Unlimited and Minnesota Sea Grant.
- Tribes are engaged in both habitat restoration and stocking.
- Major partners are developing rehabilitation plans.
- Research is ongoing in partnership with U.S. Geological Survey and universities.
- Coaster brook trout habitat is restored and protected at the recently established Whittlesey Creek National Wildlife Refuge.

### Innovation/Highlight

**Multiple agencies and organizations working across boundaries on a landscape scale to restore the lake-adapted “Coaster” brook trout.**

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# Illinois River Conservation Reserve Enhancement Program

## Balancing Nature and Commerce on the Illinois River

**Location:** Illinois River, Illinois

**Project Summary:** The Illinois River Conservation Reserve Enhancement Program (CREP) helps farmers improve water quality in the Illinois River and restore bottomland habitat through conservation easements.



The judicious use of planting has been extremely valuable in preventing soil loss and maintaining the water quality of streams.

### Resource Challenge

The Illinois River travels 273 miles across North-central Illinois to its confluence with the Mississippi River. Once teeming with waterfowl, paddlefish, sturgeon, and mussels, it rose and fell with the seasons, depositing rich soil on the land.

Long since confined by dams and levees, 85 percent of the river's wetlands are gone. Some duck populations have dropped by 90 percent and 65 percent of the river's fish populations have declined. Erosion deposits 13 million tons of sediment in the river, degrading water quality and filling navigation channels.

Despite the grim portrait, the National Research Council believes the Illinois is one of three large watersheds in the lower 48 states with the best potential for ecological recovery. Today, the river is an economic powerhouse and critical transportation system. More than 700 million bushels of corn travel the river by barge each year. Ninety percent of the state's residents live within the river's watershed.

### Examples of Key Partners

USDA Farm Service Agency, USDA Natural Resources Conservation Service, Illinois Department of Agriculture, Illinois Department of Environmental Protection, Illinois Department of Natural Resources, Illinois Farm Bureau, Illinois conservation districts, Ducks Unlimited, The Nature Conservancy, and farm producers.

### Results and Accomplishments

The USDA, State agencies, conservation districts, the farm community, and private groups are combining Federal and State cost-share dollars under the Conservation Reserve Program to spur voluntary conservation practices. Incentives help farmers reduce sediment and nutrients reaching the River and its tributaries, while maintaining or enhancing the region's economy.

The Department of Natural Resources, The Nature Conservancy, Ducks Unlimited and other CREP partners are important contributors to the Illinois project. The State selected the project area, the conservation issues, and the conservation practices to be established.

Already, 110,843 acres of bottomlands are being restored, which is expected to reduce soil erosion by 2.5 million tons per year. Aerial surveys show significant increases in waterfowl; more than 70,000 ducks were found on a recently restored section. The project will also reduce floods and reduce the cost of dredging water treatment.

Partners contribute valuable time and resources to supplement USDA funds. The State has supplied more than \$50 million in cost-share and other funding, including the purchase of permanent easements. The Farm Bureau provides outreach funds, and local conservation districts deliver technical assistance. The Nature Conservancy is assessing best management practices in the CREP project area to quantify the environmental benefits of these practices.

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### Innovation/Highlight

Improving water quality and wildlife habitat through State conservation easements.

# Iowa Buffer Team

## The Simple Science of Trees, Shrubs, and Grasses

**Location:** Iowa

**Project Summary:** A unique group of public and private partners joined forces to promote the establishment of buffers on agricultural lands.



**Buffer projects protect Iowa farms and streams.**

### Resource Challenge

Iowa has one of the most significantly altered landscapes in the United States. During its long history of production agriculture, many wetlands and natural buffers along streams and rivers were altered or removed. Without buffers, animal waste and agricultural chemicals can leach into surface and underground waters, while grazing along rivers and streams causes excessive erosion and destroys aquatic habitat. Today, almost all of Iowa's rivers and streams are considered impaired. With growing concerns about pollution and sediment in the state's waterways and in the Gulf of Mexico, the pressure is on Iowa's farmers to be better stewards of the land.

### Examples of Key Partners

Iowa Department of Agriculture, Pheasants Forever, Trees Forever, Iowa Farm Bureau Federation, Iowa Department of Natural Resources, Agroecology Issue Team of Iowa State University, Conservation Districts of Iowa, Syngenta Crop Protection, USDA Natural Resources Conservation Service, landowners, producers, and others.

### Results and Accomplishments

Riparian buffers, which are strips of undisturbed vegetation along waterways, help to intercept pollution, guard against excessive soil erosion, improve water quality, reduce flooding, enhance fish and wildlife habitat, and restore biodiversity. By the mid 1990s, national and state agricultural agencies were offering technical and financial assistance to landowners to install or enhance buffers, one of the most beneficial, cost effective conservation practices available. Trees Forever, Pheasants Forever, and other organizations developed partnerships for funding and outreach to individual landowners and

producers to showcase the many benefits of using trees, shrubs, and grasses as a natural buffer. An on-farm demonstration and research site was developed by researchers at Iowa State University with the Leopold Center for Sustainable Agriculture.

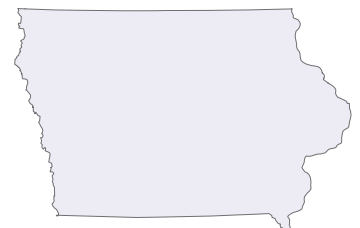
Today, Iowa leads the Nation in the number of conservation buffers protecting streams and rivers. Iowa landowners signed more than 41,000 contracts, creating 330,715 acres of buffers under the USDA Continuous Conservation Reserve Program. Additional buffers were installed through the USDA Wetlands Reserve Program, Environmental Quality Incentives Program, and Wildlife Habitat Incentives Program. Other accomplishments include education and outreach through demonstration sites and field days, enhanced financial incentives, statewide media relations, and publications and promotions. The buffers and related activities will improve water quality, wildlife habitat, and quality of life for all Iowans.

### Innovation/Highlight

**The Bear Creek National Research and Demonstration site showed policy makers, agencies, and nonprofit organizations that buffers were a cost-effective and beneficial best management practice.**

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# Joliet Army Ammunition Plant

## Site Cleanup Returns Arsenal to Public Use

**Location:** Northeast Illinois

**Project Summary:** Private and governmental partners implemented the Joliet Arsenal Citizens Planning Commission’s plan on the 23,000-acre Joliet munitions site.



Cleanup of contaminated soil from a TNT manufacturing site.

### Resource Challenge

Between the early 1940s and the mid-1970s, more than 4 billion pounds of explosives were manufactured and assembled at the Joliet Army Ammunition Plant. The facility closed in 1977, eliminating nearly 8,000 jobs. Because of extensive contamination, two Superfund sites were designated on the 36-square mile property. The Army is responsible for cleanup under EPA and Illinois EPA supervision.

The plant was declared excess property in 1993, opening for development more than 23,000 acres of open space 40 miles southwest of Chicago. Under the leadership of Congressman Sangmeister, the Joliet Arsenal Citizens Planning Commission was charged with creating a redevelopment plan. The Commission’s 24 members represented business, community, and environmental groups as well as federal, state, and local governments.

The Commission’s proposed reuse plan was unanimously approved and served as the basis for legislation introduced by Congressman Weller, titled the Illinois Land Conservation Act of 1995. The bill, signed in 1996, is being implemented by the US Army, the Environmental Protection Agency (EPA), the U.S. Department of Agriculture (USDA), Will County, and the State of Illinois.

Recently, the parties used a consensus-based process to resolve disagreements over cleanup levels that had halted their progress. A hired facilitator helped stakeholders break the stalemate, including citizens, environmental groups, and federal, state, and local governments.

### Innovation/Highlight

**A diverse group of stakeholders developed and adopted a land reuse plan that was signed into legislation. Agencies used a consensus-based process to resolve issues that had halted some reuse activities.**

### Examples of Key Partners

Joliet Arsenal Citizens Planning Commission (US Army, cities/villages of Channahon, Elwood, Joliet and Wilmington, Will County, Illinois Department of Conservation, USDI Fish and Wildlife Service, Openlands, Sierra Club, and others), EPA, USDA Forest Service, State of Illinois

### Results and Accomplishments

The Joliet Arsenal Citizens Planning Commission’s plan forms the basis for reuse at the arsenal. With adequate funding, final site cleanup by 2008 is possible. Accomplishments to date include:

- About 15,000 acres have been transferred to the USDA Forest Service for the 19,000 acre Midewin National Tallgrass Prairie, the largest tract of protected grasslands east of the Mississippi River.
- Two industrial parks have been created on 2,300 acres. A rail facility and 20 million square feet of manufacturing and warehouse space has created more than 15,000 construction-related jobs and as many as 10,000 permanent jobs.
- The Army transferred 982 acres to the US Department of Veterans Affairs to create the Abraham Lincoln National Cemetery. Dedicated in 1999, it will be the country’s second largest veterans’ cemetery.
- The Army transferred 455 acres to Will County for a municipal landfill that opened in January 2004.

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# Karner Blue Butterfly Habitat Conservation Plan

## Voluntary Program Builds Habitat for Karner Blues

**Location:** Wisconsin

**Project Summary:** The Habitat Conservation Plan (HCP) encourages voluntary creation and management of endangered Karner blue butterfly habitat on private lands through incentives and support.



**Inspecting a savannah restoration project for the Karner blue butterfly at Greenwood State Wildlife Area in central Wisconsin.**

### Resource Challenge

The Karner blue butterfly (KBB) is a Federally-listed endangered species. Central and northwestern Wisconsin has about seven million acres of potential habitat, especially where pine barrens, oak savannas, and mowed corridors already support wild lupine, the KBB caterpillar's only food. Without periodic management or disturbance, natural woody growth eliminates the KBB habitat.

Wisconsin's KBB Habitat Conservation Plan (HCP) includes an agreement between the USDI Fish and Wildlife Service (FWS), the Wisconsin Department of Natural Resources (DNR), and partners that allows land managers to operate in and around Karner blue habitat, provided they minimize incidental take (death, harm or harassment) of Karner blues. The Plan also allows some flexibility in how land managers choose to conserve KBB habitat.

The FWS permit for the HCP frees the agricultural community, private woodlot owners, homeowners, and others from regulatory oversight. Led by the Wisconsin DNR, landowners have responded to the conservation challenge, voluntarily protecting and conserving KBB and their habitats. Moreover, the general public's attitude toward endangered species management has become much more positive. Collaboration has built trust between governments and citizens, enabling meaningful and widespread protection for the Karner blue.

### Examples of Key Partners

USDI-FWS, Natural Resources Conservation Service (NRCS), Sand County Foundation, 38 HCP partners (including Wisconsin Department of Natural Resources, eight county forest departments, 10 utility companies, five industrial timber companies, 11 town and county highway departments), The Nature Conservancy, the Wisconsin Departments of Transportation and Agriculture, and private landowners.

### Results and Accomplishments

The FWS Partners for Fish and Wildlife Program and the NRCS have developed several conservation plans with private landowners. Most partners are directly involved in restoring and managing the KBB habitat. All HCP partners are involved in education and outreach, promoting conservation via newsletters, brochures, video productions, and presentations. Accomplishments include:

- Enrolled 250,000 acres of partner lands in the HCP.
- Expanded the partnership from 26 to 38 partners since the FWS issued an incidental take permit in 1999.
- Restored about 900 acres of habitat on non-HCP private lands annually, with three to five percent of those lands occupied by the KBB. The Sand County Foundation is helping to restore or enhance about 1,400 acres of land on 30 private properties.
- The community of Black River Falls hosts an annual Karner Blue Butterfly Festival, featuring a KBB princess and tours to KBB habitat.

### Innovation/Highlight

**Landowners are voluntarily creating habitat for the endangered Karner blue butterfly thanks to collaborative, flexible Habitat Conservation Plans.**

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# Kaskaskia Watershed Association, Inc.

## Communities Come Together to Save a River

**Location:** Southwestern Illinois

**Project Summary:** Federal, State and local partners joined together to develop and implement a comprehensive strategy for restoration and management of the Kaskaskia River watershed.



**Kaskaskia Watershed Association hosts annual watershed forums to collaborate on goals and objectives.**

### Resource Challenge

The Kaskaskia River and its watershed cover more than 10 percent of Illinois. Once a free-flowing 235 mile-long waterway, the river—and its watershed—have been severely degraded by flood control structures, roads, navigation channels, and agricultural runoff. Today, just 700 acres of its wetlands are considered high quality, less than 1 percent of the total. Moreover, just 11 acres of high quality native prairie remains, a tiny fraction of what once existed.

In 1998, the Kaskaskia River was nominated under the American Heritage Rivers program, prompting several pre-existing groups to band together under the Kaskaskia Watershed Association (KWA). Concerned about the watershed's condition and fearing that water use conflicts and population pressures would only intensify in the future, KWA, working as a consensus-driven board of directors, seeks to protect the watershed and balance navigation, recreation, water supply, conservation, sediment management, and other interests.

### Examples of Key Partners

Local, State, and Federal Agencies, Lake Associations, Soil/Water Conservation Districts, Mid Kaskaskia Coalition, Illinois Farm Bureaus, OKAW River Basin Coalition, Sierra Club, Kaskaskia River Task Force, Kaskia-Kaw Rivers Conservancy, University of Illinois, Three Resource Conservation and Development Councils, Land Trust Alliance Midwest, sporting and recreational groups, The Nature Conservancy, Kaskaskia Biological Station, farming interests, Park & Recreation Districts, Trailnet, Illinois Conservation Foundation, County, City, Town, and Village Boards; Chambers of Commerce, Industrial and Economic Development groups, Tourism Councils, and Historical Society.

### Innovation/Highlight

**The Kaskaskia Watershed Association established a source of state funds to support grassroots watershed projects.**

### Results and Accomplishments

The Kaskaskia Watershed Association Technical Committee, made up of federal, state, and local agencies, advises the KWA board. KWA and Technical Committee accomplishments include:

- Developed a comprehensive watershed management strategy, the Kaskaskia River Watershed: an Ecosystem Approach to Issues & Opportunities, funded by the U.S. Army Corps of Engineers, Illinois Department of Natural Resources, and the USDA Natural Resource Conservation Service (NRCS); the report details more than 100 projects to improve business, agriculture, natural habitat, human resources, hydrology, recreation, research, and citizen involvement.
- Established the Illinois Conservation 2000 Ecosystem Partnership, a funding source for grassroots partners to address watershed issues; Illinois Department of Natural Resources provides technical and financial assistance; in all, more than \$6 million has been invested on 88 projects—\$3 million from C-2000 and \$3 million in matching funds.
- Applying to establish the USDA Conservation Reserve Enhancement Program (CREP) on the Kaskaskia.
- Selected to participate in the Federal Lakes Recreation Demonstration Laboratory; U.S. Corps of Army Engineers selected the watershed for a three-year University of Minnesota study to determine the non-economic benefits gained by users and communities.

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# Measuring Conservation Practices

## New Mapping Technology Shows Conservation Practices are Effective

**Location:** Upper Auglaize Watershed, Ohio

**Project Summary:** A GIS-based model was developed to determine the effects of best management practices for agricultural lands on erosion and sedimentation rates.



**Sediment from farm fields is carried by floodwater to the Maumee River.**

### Resource Challenge

The Upper Auglaize Watershed covers more than 2,400 square miles of Indiana and Ohio, eventually draining into the Maumee River, which flows to Lake Erie. About 80 percent of the land is in agricultural production and another 7 percent is developed. Soil erosion, sedimentation, and excess nutrients are the most significant environmental problems.

Private landowners in the Upper Auglaize Watershed have been implementing conservation practices for the past 70 years with technical support from public agencies and private organizations. While observations indicate these practices are successful locally, there is little data to quantify whether they effectively reduce sediments watershed-wide. The Upper Auglaize Watershed Agricultural Non Point Source Modeling Project is an interagency project using Geographic Information Systems (GIS) to assess the effectiveness of these practices in reducing pollution from agricultural runoff and other sources.

### Examples of Key Partners

USDA Agricultural Research Service (ARS), USDA Natural Resources Conservation Service (NRCS), U.S. Army Corps of Engineers (USACOE), U.S. Geological Survey (USGS), Ohio State University (OSU), University of Toledo (UT), Heidelberg College, Ohio Department of Natural Resources Division of Soil and Water Conservation (ODNR), Ohio Environmental Protection Agency (OEPA), Several Soil and Water Conservation Districts: Allen, Auglaize, Van Wert, and Putnam.

### Results and Accomplishments

The project team used a Geographic Information System (GIS) model to determine existing sediment sources and how applying best management practices (BMP) would affect sediment delivery to the water. The results show that using BMP would reduce sediment loads leaving the mouth of the Upper Auglaize Watershed. For example, converting all cropland in the watershed to no-till would reduce the average unit sediment load by 42 percent.

The team also developed new techniques to quantify gully erosion to use in the model. Results suggest that 73 percent of the existing sediment load comes from gully erosion. Model results will be used to guide conservation incentive and land treatment programs.

### Innovation/Highlight

**GIS-based model used to quantify the effects of conservation activities on water quality.**

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# Michigan Agriculture Environmental Assurance Program

## Innovative Program Pleases Farmers and Regulators

**Location:** Michigan

**Project Summary:** The Michigan Agriculture Environmental Assurance Program (MAEAP) provides education, technical assistance, and verification to help farmers voluntarily prevent agricultural pollution risks.

PHOTO COURTESY OSCEOLA LAKE CONSERVATION DISTRICT



**Eisenga and families of Marion, Mich. environmentally assure their farm for future generations through participation in MAEAP.**

### Resource Challenge

Michigan's agricultural industry, second only to California in the range of products it produces, presents special challenges to farmers who are trying to comply with a myriad of state and federal laws and best management practices. Farmers and their families are directly affected by the quality of the natural resources on their farms. Yet, when farmers asked how to address environmental concerns—or which concerns to address—the answers seemed inconsistent.

State agencies realized that in order to conserve the environment, sustain a vibrant agricultural economy, and protect human health, they needed to provide farmers with an integrated, systems-based agricultural/environmental program. The Michigan Agriculture Environmental Assurance Program (MAEAP), a comprehensive program that augments existing, base program criteria with new pollution prevention initiatives—all developed with agricultural stakeholders—was born. The program, designed to meet environmental goals and to give the farmers consistent answers, was based on three systems: Livestock, Farmstead, and Cropping.

### Examples of Key Partners

USDA Natural Resources Conservation Service (NRCS), U. S. Environmental Protection Agency (EPA), MI Department of Agriculture, MI Department of Environmental Quality, Michigan State University, MI Association of Conservation Districts, MI Farm Bureau, conservation partners, all major livestock and commodity groups in Michigan, and others.

### Results and Accomplishments

The MAEAP program is addressing the informational needs of farmers in the following ways:

- Used Natural Resources Conservation Service technical standards for new practices.
- Adopted a Comprehensive Nutrient Management Plan (CNMP) for the Livestock System.
- Developed a program to help small and medium-sized livestock facility owners prepare for a CNMP.
- Trained more than 3,000 farmers and technical assistance providers locally.
- Helped pass legislation granting confidentiality for information provided in a conservation plan and authority for the MI Department of Agriculture to grant verification.
- Verified the first farms in the Livestock System in 2002, the Farmstead System in 2003, and the Cropping System in early 2005.
- Included applicable state and federal environmental regulations and Right to Farm practices as a part of the MAEAP system verification.
- Funded the MAEAP specialists in seven conservation districts to assist landowners.
- Held the first statewide Agriculture's Conference on the Environment.
- The core MAEAP group traveled to Washington, D.C. to discuss linking with the Farm Bill's Conservation Security Program.

MAEAP was selected as regional finalist in The Council of State Governments 2005 Innovations Awards Program.

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### Innovation/Highlight

**The agricultural community, conservation interests, and government agencies adopted mutually acceptable stewardship practices, based on environmental performance and within a framework that would accommodate future changes.**

# Missouri Conservation Reserve Enhancement Program

## Targeting Public Water Supplies Improves Drinking Water

**Location:** Missouri, 36 counties

**Project Summary:** The Missouri Conservation Reserve Enhancement Program (CREP) provides incentives to farmers to restore riparian buffers to reduce sediment, pollutant, and bacterial loading of waterways.



**Surveying wildflowers that were interseeded with warm season grasses to improve wildlife habitat.**

### Resource Challenge

Aquatic and terrestrial habitats in Missouri’s prairie region have slowly degraded over time. Early settlers drained wetlands, tilled marginal cropland, removed streamside forests, and created deep channels in waterways that destroyed the structure fish need for breeding, food, and shelter.

Riparian buffers, strips of vegetation along lakes, streams, and rivers, enhance water quality by filtering out as much as 90 percent of the sediment, nutrients, pesticides and other chemicals that reach the water. They also provide valuable wildlife habitat and shade. In Missouri, a group of federal, state, and private organizations plan to restore 50,000 acres of riparian buffers in 36 counties, targeting waterways that feed 58 public drinking water supplies that collectively serve more than 375,000 Missouri citizens.

The primary tool for restoring buffers is the CREP. This voluntary Federal program provides incentives to farmers to retire highly erodible cropland and replace it with trees, grass, and shrubs to reduce the amount of sediment, pollutants, and potential disease-causing organisms that enter the water. In some cases, buffers help communities avoid the need to construct costly water treatment systems.

Under CREP, states cost-share the federal funds, establish project criteria and cost-share practices, provide technical assistance, and select the target area for projects.

### Examples of Key Partners

USDA Farm Service Agency, USDA Natural Resources Conservation Service, State Departments of Natural Resources, Agriculture, Natural Resources, and Conservation, local Public Drinking Water Districts, Missouri University and Extension, Missouri Soil and Water Conservation Districts, and landowners, farmers and ranchers.

### Results and Accomplishments

Buffers have been created on 13,565 acres of Missouri farmlands. Partners are actively promoting the CREP and have field staff assisting farmers with project planning and implementation. The State is also conducting an extensive public awareness program through direct mailings, newsletters, the press, and “town hall” style meetings.

By targeting many small drinking water systems, the project could potentially have immediate results. The State plans to emphasize larger drinking water systems and expand participation in the CREP, targeting landowners around larger reservoirs to meet enrollment goals.

A Core CREP Team meets periodically to assess results and address challenges.

### Innovation/Highlight

**A federal, state, and local partnership is improving drinking water quality, wildlife habitat, and wetland health by targeting farmers with the financial and technical assistance needed to construct and maintain vegetation buffers along waterways.**

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# Missouri Watershed Research Assessment-Stewardship Project

## Better Agricultural Practices Restore Water Quality

**Location:** Northern Missouri

**Project Summary:** Missouri Corn Growers Association (MCGA) and the Missouri Corn Merchandising Council initiated Watershed Research Assessment and Stewardship Project (WRASP) to help corn farmers become better environmental stewards of the land, water, and natural resources.



**ERC agronomist explains edge-field-water sampling and discusses alternative farming practices with local farmers.**

### Resource Challenge

Northern Missouri is a fertile agricultural region dotted with crop and livestock farms. Surface waters provide drinking water for many of the region's citizens. In the mid-1990s, several drinking water operators received a Notice of Violation under the Federal Safe Drinking Water Act because levels of atrazine, a weed killer, exceeded acceptable levels. The waters were also placed on the Section 303d list of impaired water under the Federal Clean Water Act. Nutrients and sediment runoff were causing additional problems.

The MCGA approached the Environmental Protection Agency (EPA) with a bold concept: farmers would do the right thing voluntarily—if they knew how. Soon, federal and state agencies, corn growers, product manufacturers, and others had joined the effort, forming the WRASP in 1999. Senator Kit Bond secured more than \$1 million in federal funds.

### Examples of Key Partners

MCGA, EPA, Missouri Department of Natural Resources, USDA Agricultural Research Service, Syngenta Crop Protection, Bayer Crop Science, more than 100 private landowners; administered by Environmental Resources Coalition (ERC).

### Results and Accomplishments

Atrazine levels in Smithville Lake have dropped due in large part to WRASP's work. Both Smithville Lake and Mark Twain Lake were removed from EPA's 303d listing in late 2003. Some of the activities leading to this success were:

- Set up more than 50 field and stream monitoring stations, collecting 1,000 samples per year for chemical, nutrient, and solids analyses.
- Drafted Best Management Practices based on monitoring data.
- Changed field application practices, cutting the amount of atrazine applied in half while maintaining its effectiveness.
- Farmers planted buffer strips to intercept runoff and help curtail soil erosion.

Mike Leavitt, then EPA Administrator, noted: "We (EPA) are charged with enforcing the environmental laws enacted by Congress. But compliance, not enforcement, is our goal, and I see a greater spirit of cooperation, especially in agriculture."

Now that WRASP has met its original goals, it is supporting similar programs. The ERC is working with the USDA Agricultural Research Service in the Mark Twain Watershed to evaluate whether Farm Bill conservation programs protect natural resources while balancing conservation practice costs.

### Innovation/Highlight

**Environmental compliance through voluntary action.**

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# Murdock Clean Water Partnership

## Trees Help Clean Up Rural Water Contamination

**Location:** Murdock, Nebraska

**Project Summary:** The community of Murdock, Nebraska, and state and federal partners, used innovative technologies to solve ground and surface water contamination.

PHOTO COURTESY ARGONNE NATIONAL LABORATORY



**Workers planting trees in a deep hole for the phytoremediation project at Murdock, Nebraska - April 2005.**

### Resource Challenge

Not long ago, children who used Murdock, Nebraska’s school athletic fields in the summertime played on parched grass and exposed gravel. At the same time, a nearby creek was virtually unusable because of limited public access and because carbon tetrachloride, used decades ago to fumigate stored grain, had entered the aquifer that lay beneath the town and that fed the creek.

Two problems turned out to have one very creative solution. Faced with the need to treat contaminated groundwater and protect the creek, State and Federal governments, regulators, the local school district, the village, and private citizens set up an innovative system that is dramatically improving the community’s recreational and educational opportunities while at the same time ridding the town of its contaminated water.

### Examples of Key Partners

U.S. Environmental Protection Agency, USDA Farm Service Agency, U.S. Department of Energy Argonne National Laboratory, Nebraska Department of Environmental Quality, Stock Seed Co., Village of Murdock, Elmwood-Murdock Public School, local landowners, and others.

### Results and Accomplishments

The Murdock Partnership used an innovative system that combines multiple technologies to address surface and groundwater contamination. Near the contamination source, pumps extract contaminated ground water, which goes to a spray irrigation system that dissipates carbon tetrachloride harmlessly into the air. The

treated water is reused on the school’s athletic fields, nurturing a healthy, grassy surface for the children.

To supplement the spray technology, partners worked with landowners, the town, and local farmers, planting more than 2,000 trees downstream from where the groundwater enters the creek. These trees take up contaminated water and break down polluting chemicals naturally, a process called phytoremediation. Native prairie plants around and between the trees intercept rainwater and force the trees to draw most of their water from the aquifer.

This year, partners are restoring a downstream wetland to intercept lingering traces of the polluting chemical before it enters the creek. They are also installing an ADA-accessible trail at both the tree plantation and the wetland for public use. Interpretive signs will enhance the visitor’s experience and facilitate use of the site as an outdoor “living” classroom.

Further partnerships will be formed as installation is completed and the community begins to fully use the new resources.

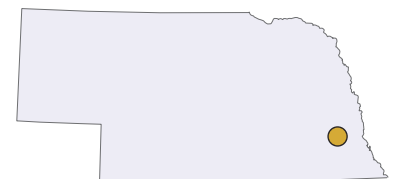
### Innovation/Highlight

**A combination of tree plantings and other natural treatments, including an innovative new spray technology, helped resolve ground and surface water contamination, while enhancing recreational opportunities for local residents.**

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# Nebraska Conservation Reserve Enhancement Program

## Partners Protecting Nebraska Wildlife and Waters

**Location:** East Central Nebraska

**Project Summary:** The Nebraska Conservation Reserve Enhancement Program (CREP) is giving farmers and their partners the resources needed to reduce sediment and nutrient runoff into lakes and waterways.

PHOTO COURTESY OF PHEASANTS FOREVER



**Filter strips reduce sediment runoff.**

### Resource Challenge

Central and eastern Nebraska was once part of a vast tall grass prairie dotted with wetlands. Farming began in earnest in the early 1900s, bringing with it the destruction of many wetlands and a rush of excess nutrients and sediment into lakes and waterways. During the dust bowl years of the 1930s, as much as three feet of wind-blown soil was deposited in some basins.

Still a predominately agricultural region, southeastern Nebraska still suffers from excessive runoff that deposits sediment in lakes, streams, and rivers. Nutrient and chemical runoff reaches surface water and underground stores. Birds such as quail, pheasant, and the greater prairie chicken have declined, along with migrating waterfowl that were once so numerous they blackened the sky. Yet, despite these problems, more than two and a half million waterfowl pass through the region each year.

The Conservation Reserve Enhancement Program (CREP), part of the Conservation Reserve Program (CRP), combines a federal program with state programs, creating unique partnerships to meet specific state and national goals. The Program relies on voluntary agreements with farmers to convert cropland to native grasses, trees, and other vegetation in return for rental payments and other incentives. Each State organizes and develops its individual CREP proposal in consultation with local interests that include environmental organizations, agriculture groups, farmers, and others.

The Nebraska CREP has set an ambitious goal: to enroll 100,000 acres in the program. Landowners in Nebraska’s Central Basin will implement conservation measures to reduce the amount of sediment, nutrients, and pollutants reaching the water, and providing vital habitat for a variety of wildlife.

### Examples of Key Partners

USDA Farm Service Agency, USDA Natural Resources Conservation Service, State of Nebraska, Resource Conservation Districts, Pheasants Forever, landowners and producers, and others.

### Results and Accomplishments

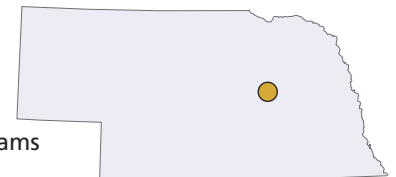
Landowners, communities, and private organizations, working with federal, state, and local agencies, have restored in excess of 20,000 acres of land and reduced soil erosion by more than 100,000 tons per year. Private organizations such as Pheasants Forever are providing seed, tractors, and expertise to help develop wildlife habitat. The State of Nebraska has pledged \$18 million dollars to implement this effort along with a \$71 million USDA contribution.

### Innovation/Highlight

**The Nebraska Conservation Reserve Enhancement Program pools government and wildlife funds, and technical assistance to encourage farmers to convert marginal cropland to trees, shrubs, and native grasses.**

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# North Lake Basin Wetlands Restoration

## Restoring Waterfowl Habitat with Reclaimed Groundwater

**Location:** Utica, Nebraska

**Project Summary:** The contaminated ground water is cleaned with innovative technology and used to restore wetlands in a critical migratory waterfowl flyway.



**Spray irrigation systems restore wetlands, enhance migratory waterfowl habitat, and clean up contaminated groundwater.**

### Resource Challenge

The 364-acre North Lake Basin Wildlife Management Area lies in a critical migratory waterfowl flyway in south-central Nebraska. Due to farming, development, and other causes, waterfowl habitat in these wetlands has fallen by more than 95 percent over time. Public and private agencies formed a partnership to restore the historic wetlands, but they lacked a critical resource—water.

Meanwhile, in nearby Utica, Nebraska, scientists were investigating ways to restore groundwater that was contaminated with carbon tetrachloride, once used to fumigate stored grains. Federal agencies and local partners saw a way to solve two problems: treat the groundwater, and then use it to re-create and replenish disappearing wetlands. The University of Nebraska developed new technology to extract water from underground and spray it into the air, a process that would cause as much as 98 percent of the carbon tetrachloride to dissipate harmlessly into the atmosphere.

### Examples of Key Partners

Nebraska Game and Parks Commission, USDA Farm Service Agency, U.S. Department of Energy Argonne National Laboratory, U.S. Environmental Protection Agency Region VII, Nebraska Department of Environmental Quality, Nebraska Rainwater Basin Joint Venture, Ducks Unlimited, Prairie Plains Resource Institute, Village of Utica, Nebraska, Seward County, Nebraska, and others.

### Results and Accomplishments

The USDA successfully pilot tested the technology and completed construction of a new cleanup system in 2004. Pumping wells in Utica are connected to a pipeline that delivers groundwater to the North Lake Basin Wildlife Management Area. There, two spray irrigation systems treat the water and deliver it to the wetlands. This system, operating seasonally during the next ten to fifteen years, will deliver the equivalent of one foot-deep water spread over 3,600 acres.

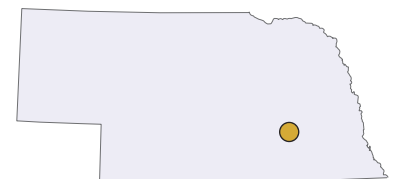
The plan is already working: the contamination is being removed and the birds are returning. Many partners made this project possible: the Nebraska Game and Parks Commission, which owns most of the North Lake Basin Wildlife Management Area and determines the location and rate of water application; USEPA Region VII and the Nebraska Department of Environmental Quality, which reviewed and concurred with the project's technical design; citizens of Utica and Seward County, who allowed access for well installation and wetlands reconstruction; Ducks Unlimited, which helped purchase the Wildlife Management Area and monitors bird populations; the Prairie Plains Resource Institute, which provided prairie seed for construction areas; and Nebraska Rainwater Basin Joint Venture, which was instrumental in coordinating interactions among the partners.

### Innovation/Highlight

The project is reclaiming contaminated groundwater using innovative new spray technology, and then reusing it to restore depleted wetlands and enhance critical migratory waterfowl habitat.

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# Ohio Scioto River Basin Conservation Reserve Enhancement Program

## Buffers and Wetlands Improving Water Quality

**Location:** Central Ohio

**Project Summary:** The Ohio Scioto River Basin Conservation Reserve Enhancement Program (CREP) helps cost-share the creation of conservation buffers and wetlands on private farms to improve water quality.



**Native wildlife, including great blue heron, benefit from the restoration of wetland habitat.**

### Resource Challenge

The 231-mile long Scioto River and its 3,000 miles of tributaries flow 6,300 miles through all or part of 31 central and southern Ohio counties, draining nearly a half million acres before it joins with Ohio River. Agriculture has long been the dominant land use; years ago, outdated farming practices were responsible for creating drainage ditches and channels that increased the nutrient and sediment load to the river. Today, runoff from agricultural lands, from urban areas, and from substandard rural septic systems still dumps nutrients, sediment, chemicals, and potential pathogens into the Scioto River and its tributaries, where they eventually flow downstream to the Gulf of Mexico.

The watershed is home to nearly two million Ohioans and a major source of public drinking water. More than twenty municipal water systems use surface water, while others draw water from wells adjacent to tributaries and the River. The watershed also harbors endangered mussels and fish that are affected by pollution in the watershed.

Watershed partners are using the Federal CREP to offer incentives to farmers and other landowners to plant trees and establish conservation buffers and wetlands on 70,000 acres alongside the River and its tributaries. State CREP partners developed the target area, conservation issues to be addressed, will contribute funds to the federal cost-share program, and will provide technical assistance to landowners.

### Innovation/Highlight

**The Ohio Scioto River Basin CREP is using State and Federal funds and technical assistance to encourage Scioto River Watershed farmers and other landowners to adopt conservation practices, protecting and improving water quality for 20 municipal water systems.**

### Examples of Key Partners

USDA Farm Service Agency, USDA Natural Resources Conservation Service, Ohio Department of Natural Resources, Ohio Environmental Protection Agency, Ohio Soil and Water Conservation Districts, City of Columbus, Ohio State University Extension, The Nature Conservancy, Pheasants Forever, Ducks Unlimited, and the Ohio Farm Bureau Federation.

### Results and Accomplishments

Since the project began in October 2004, the State of Ohio and local partners have pledged \$56 million to implement the program. The USDA will provide \$151 million in CREP funds.

Farmers have enrolled nearly 1,000 acres into riparian buffers, filter strips, wetlands, and other conservation practices since March 2005.

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# Phalen Corridor Brownfields Redevelopment

## Crumbling Infrastructure to Collaborative Revitalization

**Location:** St. Paul, Minnesota

**Project Summary:** Inner city decay is revitalized with parks, schools, housing, and employment by community and stakeholder outreach, planning and volunteerism.



**The Phalen corridor involves 60 partners attracting 36 developments, 2,000 jobs and more.**

### Resource Challenge

The East Side of St. Paul, covering nearly a third of the city, was once a thriving manufacturing center. During the last 25 years, factories began closing one by one. Thousands of people lost their jobs. Retailers abandoned the area soon after, leaving the mostly minority inhabitants with a crumbling infrastructure, overburdened schools, and few recreational opportunities. Hundreds of acres of brownfields—barren, abandoned properties, some with toxic materials—were left behind.

### Examples of Key Partners

Wells Fargo Bank, 3M Corporation, the East Side Area Business Association, Community Planning Councils 2, 3, and 5; the City of St. Paul, St. Paul Port Authority, Minnesota House of Representatives and Senate, Hmong American Partnership, McKnight Foundation, Metropolitan State University, and others.

### Results and Accomplishments

The Phalen Corridor has attracted more than \$570 million in development including 19 businesses bringing more than 2,000 jobs and more than 1,000 units of housing. The partnership is not a corporation, nonprofit or government agency, but a pure collaboration emphasizing local involvement, broad-based partnerships, and support for developers. In 1998, the Brownfields National Partnership designated the project a Showcase Community, qualifying it for additional financial and technical support from up to 20 federal agencies.

At least eleven brownfield sites lie along abandoned rail lines of the Phalen Corridor. Nearly 200 acres of these formerly abandoned properties have been or are being restored, including:

- Phalen Boulevard, a 2.5 mile road linking four communities to the downtown.
- An old strip mall converted to living wetlands, attracting more than \$200 million in development.
- A high school abandoned since 1964, renovated into a new elementary school and YMCA.
- A former salvage yard transforming into a new transit facility that created 300 jobs.
- Green space and recreational areas, including bike trails and urban parks, created from stormwater pools.

Workshops are offered to local representatives and other stakeholders, giving them the opportunity to become involved in brownfields reuse planning. Job creation and employment opportunities are a vital part of the planning and restoration process.

### Innovation/Highlight

**The project has won 11 national and statewide awards for environmental stewardship, engineering, housing, excellence in education, and economic development.**

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# Trumpeter Swan Restoration

## A New Dawn for Swans

**Location:** Rocky Mountain Region of Wyoming, Montana and Idaho

**Project Summary:** A private/public captive breeding and release program for trumpeter swans in the Rockies has helped prevent their listing as endangered.



**182 trumpeter swans have been released in Wyoming, Montana, and Idaho over the last several years.**

### Resource Challenge

The elegant, snowy white Trumpeter Swan is the subject of intense study and concern. Largest of all North American waterfowl, the birds weigh between 20 and 30 pounds, with a wingspan of up to eight feet. Remaining near open water to feed on aquatic plants, trumpeters consume as much as 20 pounds of wet vegetation each day.

Once abundant throughout much of North America, trumpeters were nearly extinct by 1900. Hunting and habitat changes limited the population to small flocks that lived or migrated through remote areas. The last 200 trumpeters in the lower 48 states and Canada survived by wintering in the frigid Yellowstone Region, where warm springs kept small areas of water ice-free.

### Examples of Key Partners

Wyoming Wetland Society (WWS), State Fish and Wildlife Departments in Wyoming, Idaho, and Montana, Jackson Hole Land Trust, Jackson Hole Community Foundation, Teton County Parks and Recreation, Montana Wetland Legacy, Green River Valley Land Trust, USDI Fish and Wildlife Service (FWS), Earth Friends, The Brinson Foundation, the Hofley and the Kendall families, and the National Fish and Wildlife Foundation.

### Results and Accomplishments

In 1986, a non-profit organization, the Wyoming Wetland Society (WWS), established a captive flock of Trumpeter swans to use for restoration projects in the western states.

Between 1994 and 2000, the WWS and the Wyoming Game and Fish Department released 71 birds in the Green River drainage of Wyoming, which now account for 30 percent of the total number of swans in Wyoming, and nearly 40 percent of the adult swans outside Yellowstone National Park.

In 2000 the organization began to work with The Confederated Salish Kootenai tribe of the Flathead Reservation in northwest Montana. The organization released 84 swans over a two-year period, producing the first nesting pair of swans in the Flathead in more than 100 years.

The Society, FWS, and the State of Idaho released 27 swans on the Bear Lake National Wildlife Refuge in Idaho, where five pairs now use the refuge, compared to just one pair prior to the release.

Thanks to the participation of federal, state, and local governments, conservation organizations, foundations, and landowners, 182 trumpeter swans have been released in Wyoming, Montana, and Idaho during the last several years. Thanks to their efforts, it is likely that the trumpeter swan will not be listed under the ESA.

### Innovation/Highlight

**The captive breeding program has kept trumpeter swans from being listed under the Endangered Species Act (ESA) and has substantially increased the population.**

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# Upper Mississippi River Basin

## Improving Water Quality by Controlling Subsurface Drainage

**Location:** Iowa, Illinois, Michigan, Minnesota, Missouri, Ohio, and Wisconsin

**Project Summary:** New drainage water management systems in the Midwest are improving water quality and wildlife habitat in the Mississippi River Basin.



**Combining drainage water management systems with wetlands is a win-win for water quality and wildlife habitat**

### Resource Challenge

In the past, surface and subsurface drains were constructed on cropland to carry excess water from the soil. Cropland drainage is very extensive in the Midwestern United States, and drainage flows can carry excessive amounts of plant nutrients and other chemicals, especially nitrate-nitrogen. Recent science has shown that managing drainage flow can significantly reduce nutrient and pesticide losses from cropland.

Modifications to existing drainage systems, and better designs for new or replacement systems, allow farmers better control over drainage water releases, reducing nutrient losses. Drainage water management improves water quality, and can boost crop production by conserving water in the soil during dry periods.

### Examples of Key Partners

USDA Natural Resources Conservation Service (NRCS), USDA Agricultural Research Service (ARS), Cooperative State Research, Education, and Extension Service (CSREES); U.S. Geological Survey (USGS), U.S. Environmental Protection Agency (EPA), Land Grant Universities in Iowa, Illinois, Minnesota, Missouri, North Carolina, Ohio, and Wisconsin; State Agencies, The Nature Conservancy, The Fertilizer Institute, National Association of Conservation Districts, National Corn Grower’s Association, Sand County Foundation, National Land Improvement Contractors Association, AgriDrain, Inc.; several agricultural industries, and private landowners.

### Results and Accomplishments

The Agricultural Drainage Management Systems (ADMS) Task Force and the Agricultural Drainage Management (ADM) Coalition were formed after the 2002 Farm Bill failed to recognize drainage management as a viable option for reducing nutrient losses from cropland and conserving soil moisture. Their efforts are raising awareness about the benefits of drainage water management on water quality and wildlife habitat in the Mississippi River Basin. Selected accomplishments include:

- Conservation Practice Standard 554 has been adopted in all but two of the participating states, making the practice eligible for cost-share benefits.
- About 4,000 acres of Midwest cropland are using drainage water management practices, in comparison to less than 500 acres in 2004; these practices are expected to increase dramatically in the Midwest over the next few years.
- NRCS, ARS, CSREES, USEPA, and the Sand County Foundation have funded research and demonstration projects in response to greater interest in this strategy for improving water quality in the Mississippi River Basin.
- All currently funded and planned projects are collaborative efforts among federal agencies, academia, non-government organizations, and industry representatives.
- Land Grant Universities, State Agricultural Experiment Stations, and ARS in Iowa, Illinois, Ohio, and Minnesota installed field demonstration projects and are evaluating their performance.

### Innovation/Highlight

**Diverse interests working to support and demonstrate the use of modern drainage water management systems to improve water quality and wildlife habitat.**

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### Websites:

<http://extension.osu.edu/~usdasdru/ADMS/ADMSindex.htm>  
<http://www.admcoalition.com/>

