



Introduction and General Description



Stretching more than 400 miles from the Wisconsin border to the confluence of the Mississippi and Ohio rivers, geology, glaciation and climate provided Illinois with a diverse array of fish and wildlife habitats. From hanging bogs to cypress swamps, hardwood forests to prairie potholes, from Lake Michigan beaches to floodplain forests with backwater lakes, Illinois supported a rich faunal assemblage before European settlement. Connecting and interspersed with these varied habitats was tallgrass prairie. Prairie, the dominant habitat, covered about 22 million acres of the Illinois landscape. Forests covered 14 million acres, mostly in the southern third of the State and along major streams. Wetlands, the third major habitat type, covered about 8 million acres of Illinois before settlement.

As European settlers began to arrive in the 1830s, they found the rich, deep prairie soils ideal for agriculture. With the help of John Deere's moldboard plow, more than 99 percent of the prairie was converted to agricultural production. As the prairies were converted, so were extensive areas of wetland. Statewide, more than 85 percent of the wetlands have been drained to feed a growing nation.

ILLINOIS

Agricultural and urban development also adversely affected surface water resources especially water quality and aquatic habitat. Stream modification for urban development and rural drainage, increased sedimentation, and the addition of pollutants are the leading causes of impaired water quality and aquatic habitat degradation in Illinois.

On a regional scale, navigation and transportation development on the Mississippi, Illinois, and Kaskaskia rivers adversely affected extensive wetland and forest areas. These developments negatively impacted thousands of acres of backwater lakes and sloughs important to migratory birds, particularly waterfowl in the Mississippi Flyway.

The Partners for Fish and Wildlife Program in Illinois

More than 90 percent of Illinois is privately-owned. It is evident that to provide more habitat for fish and wildlife, habitat restoration efforts need to be focused on private land.

In 1987, the U.S. Fish and Wildlife Service began an innovative program to assist private landowners with habitat restoration on their own lands. The Partners for Fish and Wildlife Program provides technical and financial assistance to private landowners.



Emergent wetland in an abandoned field.

The Partners Program has worked extensively with U.S. Department of Agriculture agencies, the Illinois Department of Natural Resources, county and local governments, and private conservation organizations in enhancing, restoring, and protecting a variety fish and wildlife habitats on private land. The Partners Program presently has cooperative agreements with Illinois DNR and Ducks Unlimited for habitat restoration and enhancement throughout the State.

In the Chicago area, the Partners Program restoration projects benefit not only the fish and wildlife resources of the greater Chicago area but the millions of human residents as well.

Illinois Activities

- Wetland restoration.
- Grassland restoration.
- Stream bank stabilization.
- Riparian restoration.
- Restoration and enhancement of threatened and endangered species habitat.
- Technical assistance to USDA.
- Outreach programs.



School children planting wetland plants in their outdoor classroom.

Habitats of Special Concern

Wetlands

Wetlands remain the primary focus of the Partners Program in Illinois because of their importance to Federal trust species, specifically migratory birds and wetland species listed pursuant to the Endangered Species Act. Many wetlands in the State have been modified by ditching or draining for farming and other agricultural activities.

Prairies

All but 1 percent of the tallgrass prairies in Illinois present before European settlement have been converted to agriculture. This loss of grassland habitat has negatively affected many migratory grassland nesting birds and other wildlife.

Chicago Area

The Chicago area had extremely diverse floral and faunal communities before European settlement. The mixture of tallgrass prairie, wetland, savanna, and woodland communities that once existed in northeastern Illinois are now a small fraction of the landscape. However, some

ecosystems, now considered globally rare or imperiled still thrive in Chicago. The Chicago region is one of a handful of metropolitan areas in the world that has a high concentration of globally significant natural communities. The region includes some of the best surviving examples of eastern tallgrass prairie and open oak woodlands or savannas, and it supports many rare plants and animals, including nearly 200 species listed as endangered or threatened in Illinois. Less than 1 percent of Illinois' tallgrass prairie, and even smaller fragments of natural oak savannas remain, making these grassland and woodland communities even more rare than the tropical rain forests.

Not all lands in Illinois have been touched by a plow. Chicago planners began in 1915 to set aside land to preserve the flora and fauna of the region. Today about 200,000 acres of natural land has been protected throughout the greater Chicago area. These areas not only conserve the biodiversity of the region, but also offer city dwellers the chance to experience nature just a few minutes from their doorstep.

Fens

Fens are wetlands that are created and maintained by the continuous, internal flow of mineral-rich groundwater from bordering upland rock formations and other recharge areas. Fens support many plants uniquely adapted to high concentrations of alkaline minerals.

Flatwoods

These are forested wetland areas on nearly level soils that have an impermeable layer creating a shallow, perched water table. Flatwoods provide important breeding grounds for amphibians. Flatwoods are extremely rare and are considered globally imperiled.

Dolomite Prairie

Dolomite prairies differ from other prairies because they grow on top of limestone bedrock formations. The soils are very thin and alkaline and support a different assemblage of plants than other prairie soils. This is a very rare community type and much of it has been lost to limestone mining and other development. The Chicago area has some of the best remaining examples and provides habitat for the federally endangered Hine's emerald dragonfly.

Oak Savanna

Savanna is typically an upland oak forest community with an open canopy cover and an understory of prairie plants. Periodic fires help maintain the unique nature of this habitat type. Many of the oak savannas have been turned in to row crops and pastures.

Threats

Habitat Fragmentation

Modification of the land for agricultural production and urban use continues to diminish the value of remaining habitats for fish and wildlife. Natural areas are reduced to small patches surrounded by vast agricultural fields or urban centers. Habitat fragmentation can lead to wildlife population declines and the loss of genetic and species diversity.

Wetlands and aquatic habitats are most at risk as development reduces the land base available for fish and wildlife and adds significant runoff and pollutants to surface waters. Land modification for more efficient agricultural production also continues to lower watertables, which adversely affects stream flows, and reduces the quantity and extent of remaining terrestrial and aquatic habitats.

Urban Sprawl

In the Chicago area the amount of developed land has increased at a rate several times higher than the population. Between 1970 and 1990 the population of this 6-county northeastern Illinois area increased 4 percent while the



More grassland cleared for housing development near Chicago.

amount of land developed for urban use increased 33 percent.

Invasive Plants

Less obvious than habitat loss, but perhaps a more immediate threat, is the invasion of native habitats by exotic or alien plant species. These plants typically compete with native plants and often severely modify or degrade fish and wildlife habitats.

Water Quantity and Quality

In the Chicago area the expansion of paved surfaces leads to increased water runoff entering riparian (streamside) habitats and waterways. This often results in downstream flooding during storm events. This increased runoff causes streambank erosion and sedimentation. The water quality of these streams is degraded by the increased amounts of fertilizers, herbicides, oil, grease, petroleum and other chemicals washing off urban and suburban areas.

Conservation Strategies

Restoring Wetlands

Most of the wetland restoration work completed to date has been in the Joint Venture Focus Areas described in the Service's North American Waterfowl Management Plan. Moreover, the present USDA Conservation Reserve Enhancement Program on the Illinois River has raised the awareness of landowners in the watershed where significant enrollment in CREP (nearly 71,000



Farmed wetland prior to restoration.



Restored wetland, Lee County, Illinois.

acres) requires extensive technical assistance from the Partners Program local coordinators. Other significant work areas are the Southern Illinois Focus Area, particularly the Kaskaskia and Cache River drainages and the Northeastern Focus area, including the Kankakee River.

Wetlands are typically restored by reversing the actions taken to drain the wetland. Breaking or removing the field tile drains, plugging drainage ditches, and constructing small berms to prevent wetland drainage are the common techniques employed in wetland restoration.

Simple water control structures are

used only where necessary to control unwanted or encourage more desirable vegetation, or to provide controlled release of excess runoff. Similar techniques are used to restore larger floodplain wetlands, but typically require more earthwork and the use of water control structures to inlet and hold flood waters.

The cost for wetland restoration varies considerably from project to project, but averages \$500 to \$1200 per acre.

Bringing Back Grasslands

Once the predominant ecosystem in Illinois, prairies have been impacted or destroyed by farming, pasturage, invasive species and lack of fire. The typical prairie restoration involves creating new prairie, or enhancing or expanding existing prairie remnants. Creation of a new prairie area includes preparing the soil and planting a diverse mix of native prairie grasses, forbs and legumes. To enhance or expand existing prairies, the techniques may include interseeding (adding seed of species missing on the site), and brush removal. Once the prairies are restored, prescribed burning is used to maintain the area.

Opportunities for grassland restoration are somewhat limited because significant portions of the original tallgrass prairie are considered prime farmland in Illinois. Therefore, to date, Partners Program efforts to restore grasslands have consisted of small tracts of native grasses established in cooperation with the Illinois Department of Natural Resources and a few larger projects have been implemented with County Forest Preserve Districts and The Nature Conservancy. Costs range upward from \$70 to \$300 per acre. In the Chicago area the average cost of a prairie restoration is \$2,000 per acre.

Rejuvenating Streams and Riparian Areas

Stream habitat and riparian areas in much of Illinois are extremely degraded. Most of the degradation is the result of conversion of adjacent land to agricultural use and drainage for intensive commodity crop production. The degradation is manifested in lowered water tables, modified stream channels, degraded stream beds, streambank erosion and extensive sedimentation.

The Partners Program has partnered with several local soil and water conservation districts in pilot projects to stabilize eroding streambanks. For these pilot projects, the streambanks are reshaped and graded, then willow posts are planted and the site seeded with a grass seed. The grass seeds germinate and the willow posts root which stabilizes the bank and provides shade and cover along the stream. Other restoration techniques include in-stream riffle structures, stream flow deflectors, and vegetative bank stabilization. The cost of this restoration is about \$250 per linear foot.

Controlling Invasive Plants

Purple loosestrife, reed canarygrass, and buckthorn are all invasive plant species that are the bane of wetlands, especially in northern Illinois. The Chicago Field Office established and coordinated a program in the Chicago Public School System to raise beetles for release to control purple loosestrife. The program has been highly successful in engaging public school students, and relatively successful in reducing purple loosestrife infestations in northeast Illinois.

Reed canarygrass control is extremely difficult to



Purple loosestrife invasion of a wetland near Chicago.

control because of its widespread use in agricultural conservation practices, resulting in an extensive seed source in Illinois. However, recent research points to an improved technique that provides a relatively high level of control until additional seeds are introduced from elsewhere.

Buckthorn is an invasive shrub that threatens the integrity of wetlands. At present, the only effective technique is cutting or pulling the plant in

combination with burning. Both reed canarygrass and buckthorn are particular problems in wetlands that support populations of the federally threatened eastern prairie fringed orchid in northeast Illinois. The Partners Program provides technical assistance, and coordinates volunteers to control reed canarygrass and buckthorn.

Outreach

The Partners Program has worked with schools, agricultural interest groups and non-government conservation organizations to educate, provide exposure to, and explain the benefits of a variety of habitats on private lands. The primary outreach tools for grade school groups are presentations on wetlands and endangered species at spring Eco-Camps or Ecology Days. Similar presentations are made to civic groups and non-government conservation organizations.

Outreach has also been conducted with information booths at events which attract large audiences such as the Illinois State Fair, the Mid-America Waterfowl Expo, National Hunting and Fishing Day at Crab Orchard National Wildlife Refuge and the Quad Cities Conservation Alliance Outdoor Show.

Partners

Natural Resources Conservation Service
Farm Service Agency
Illinois Department of Natural Resources
Local Soil and Water Conservation Districts
Ducks Unlimited
Pheasants Forever
The Nature Conservancy
British Petroleum
Amoco
Commonwealth Edison
Deer Path, Arbor Creek and Lakeside Homeowner's Associations
Brookfield Zoo
Morton Arboretum
Chicago Botanic Garden
St. Charles Park District
Downer's Grove Park District
Lake, Cook, DuPage, Kane, Will and McHenry County Forest Preserve Districts
North Barrington Elementary School
Morris Elementary School
Immanuel Lutheran School

Fox, Kishwaukee, North Branch of the Chicago, Sequoit Creek and DesPlaines River Watershed Groups
Fuller Park Community Development
Fox Valley Land Foundation
The Conservation Foundation
Citizens for Conservation
Village of Antioch
Village of Sleepy Hollow

Accomplishments

- Restored 3,985 acres of wetland on 283 sites.



- Restored 363 acres of native grass on 25 sites.
- Enhanced 6 miles of stream and riparian habitat.
- Provided technical assistance on 130 Wetlands Reserve Program and Conservation Reserve Enhancement Program sites totaling 50,000 acres.

Future Needs

- Restore and enhance 10,000 acres of wetland.
- Establish 10,000 acres of native grassland.
- Enhance and restore 1,200 miles of streams and riparian habitats.
- Restore 3,000 acres of oak savanna in the greater Chicago area.
- Restore or improve 2,000 acres of endangered species habitats in the greater Chicago area

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