Keeping it wild in Chicago: habitat restoration in the urban jungle

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Abstract

The U.S. Fish and Wildlife Service's Chicago, Illinois Field Office was created in 1991 to assist with the protection, conservation, and restoration of wildlife resources and their habitats in the 6-county metropolitan area. This mission is addressed in part by the Office's Partners for Fish and Wildlife program and Environmental Education program working jointly to provide technical assistance to partnerships involved in urban habitat restoration projects. These projects have value not only for residential and migratory wildlife; but also for water quality, education and stewardship opportunities, aesthetics, building a constituency base, and media attention. Numerous habitat restoration projects (wetlands, prairies, streambanks) have been completed since this Office opened.

Habitat restoration projects in urban settings are challenging. Many sites have soil limitations (compaction, topsoil removal, historic debris dumping), water quality/quantity limitations (siltation, excess nutrient loads, stormwater management), and nuisance plant and wildlife issues (especially, giant Canada geese). In addition to site limitations, urban habitat restoration projects must take people into account. Many urban residents are unfamiliar with habitat restoration efforts and the techniques used, they do not understand the different values of native and non-native plants, and many residents are suspicious of "natural" areas because they do not want weedy, unkept areas. Urban residents, however, do desire education/stewardship opportunities, which these projects can help fulfill. Youth and adults have assisted with planting wetland and upland vegetation, and have assisted with trail and sign design. In addition, these sites have been used for environmental education programs, special events, field trips, and teacher workshops.

The most successful projects have active partnerships, community involvement, a strong education/outreach component, and creative sources of funding. Our Office concludes that urban habitat restoration projects have merit and are worthy of pursuing despite the challenges.

INTRODUCTION

The mission of the U.S. Fish and Wildlife Service (USFWS) is to work with others to conserve, protect, and enhance fish and wildlife and their habitats for the continuing benefit of the American people. If our agency is to be successful in this mission we must address habitat concerns where the people are, and that is in urban areas. In 1991, the U.S. Congress and the USFWS established a Field Office in northeastern Illinois to increase protection of wetland habitats being impacted by the land demands of a growing human population and increased urbanization.

The Chicago Field Office operates in the northeastern Illinois area defined by the City of Chicago and the 6 counties, which surround it. Together this area is referred to as the greater Chicago metropolitan area. In 1997, this area contained a population of approximately 7.6 million people and was the third largest metropolitan area in the United States. Despite the large and dense human population and associated land use, the Chicago area still has many unique natural habitats and species.

The conversion of land from agriculture and open space to urban and commercial development in the metropolitan area has accelerated in the last 20 years. According to the Northeast Illinois Planning Commission, the metro area population increased 4% between 1970 and 1990 while land development increased by approximately 46%. Much of this land

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that is converted was formerly in agricultural crop production; however, we are also losing wetlands, native grasslands, oak savannas, and the opportunities to restore these habitats on old farm fields. The Chicago Field Office, through its Partners for Fish and Wildlife program and Environmental Education program, provides technical assistance and funding to landowners and partnerships involved in urban habitat restoration projects. These projects have value not only for residential and migratory wildlife, but also for water quality, education, stewardship opportunities, aesthetics, and in general a better quality of life for urban residents.

THE CHALLENGES OF HABITAT RESTORATION IN URBAN LANDSCAPES

Habitat restoration projects, regardless of where they are located, must be based on scientific principals. If a site is unsuitable for the restoration proposed there, the project is sure to fail. This is no different in metropolitan areas than anywhere else. However, there are several factors that make urban habitat restorations more challenging. Many sites have soil limitations such as compaction, topsoil removal, or historic debris dumping. Other factors include water quality and quantity limitations. Most urban streams, wetlands and ponds have problems with siltation, excess nutrient loads, or they are used for stormwater management. Lastly, non-native plants and over abundant wildlife such as purple loosestrife (*Lythrum salicaria*) and giant Canada geese (*Branta canadensis maxima*) can affect the success of a restoration project.

In addition to these site limitations, another factor that limits restoration in metropolitan areas is the cost, both of the land itself and of doing work in these areas. Finally, urban habitat restoration projects must take people into account. People can and will have an impact on these projects and it is important to make it a positive one. For example, many urban residents are unfamiliar with habitat restoration efforts and do not understand the different values of native and non-native plants. Some residents are suspicious of "natural" areas because they do not want weedy, unkept areas, and many do not understand management techniques such as brush removal, prescribed burning, or water level manipulations. In order for urban habitat restoration projects to be successful, outreach activities (i.e. presentations, brochures, workshops, press releases, educational programs, etc.) must be directed to residents to help them understand and appreciate the value of the project being done.

TECHNIQUES FOR HABITAT RESTORATION IN URBAN LANDSCAPES

The first step in any habitat project is to ensure that the restoration or enhancement plan is appropriate for the site. This is complicated in metropolitan areas, as the natural character of a site has been altered. It is important that the limitations of an area are recognized and that restoration is not forced where one does not fit, such as building a wetland in a non-hydric soil. We have found that the most effective way to identify and complete successful habitat projects in the Chicago area is through "Partnerships." By involving other agencies and people, we have been able to overcome most of these urban restoration obstacles, and have tapped into additional manpower and talent that our agency alone could never have provided.

We believe there are several keys to building effective restoration partnerships. First of all, identify the obvious partners and bring them in early. Secondly, don't be afraid to ask for help, recognize that no one agency or organization has all the expertise that is sometimes needed to complete these projects. As a project progresses, add other partners as needs become evident. However, don't add partners just to add partners. Finally, when the time comes, acknowledge all partners. Also, remember that in addition to their talents and ideas, partners may also provide funding.

Some partners will contribute many times over. For example, the U.S. Department of Agriculture-Natural Resources Conservation Service (NRCS) has expertise with soils, hydrology, and a long history of working with private landowners. These factors make them an invaluable cooperator on wetland restoration projects, and they are the first partner we invite when we begin evaluating a project.

An example of an effective partnership is the U.S. Department of Agriculture initiative known as the Urban Resources Partnership (URP). In 1994, the Department of Agriculture initiated a pilot program in the cities of Atlanta, Chicago, New York, and Seattle aimed at providing expertise and funding to local community-based projects in urban areas which provide a natural resource benefit. Funding for these projects comes from the Department of Agriculture through an established partnership of agencies. The technical expertise comes from federal agency partners such as the Natural Resources Conservation Service, U.S. Forest Service, Fish and Wildlife Service, National Park Service, Cooperative Extension Service, and the U.S. Environmental Protection Agency. Since 1994, the Chicago partnership has grown to 9 partner agencies and has committed > $2 million to urban projects such as community gardens, wetland restorations,

streambank stabilization, and development of environmental education programs for youth and adults.

Equally important as developing sound projects, is identifying sources of money to fund them. Funding for habitat projects in the Chicago metropolitan area has come from a variety of sources. Traditional sources such as the Service's Partners for Fish and Wildlife Program and Challenge Cost-Share Grants, and the U.S. Environmental Protection Agency's non-point source pollution grants (Clean Water Act - Section 319) have been leveraged with funding from very non-traditional sources. For example, our Office, in conjunction with the Chicago District of the U.S. Army Corps of Engineers (Corps), promoted the establishment of 3 accounts with not-for-profit organizations, which accept monies generated from enforcement and compliance actions initiated by the Corps. Our Service office established agreements with 2 of these organizations, the Conservation Fund and the National Fish and Wildlife Foundation, to develop and review proposals to fund suitable wetland conservation, restoration, enhancement, and education projects in the Chicago region through these accounts. To date, these 2 accounts have provided > $1.34 million to 28 different partners for 42 wetland projects in the 6-county northeast Illinois region.

A second example of an innovative funding mechanism for habitat projects in our area has come from the private sector. The Grand Victoria is a riverboat casino on the Fox River in Elgin, Illinois. The owners of the casino established a not-for-profit foundation which receives an annual endowment equal to 12.5% of the casino's net operating income for each year and uses these funds for economic development, education, and environmental projects in northeastern Illinois. Since 1997, the Grand Victoria Foundation has committed > $3.7 million to fund projects such as habitat restoration, land acquisition, watershed planning, smart growth outreach and planning, and environmental education programs throughout northern Illinois.

Once the site, technical expertise, and money are identified, then people must be included. Getting people involved with habitat projects has a multitude of benefits. Residents can encourage local officials to support restoration projects, supply volunteer labor, promote the project to family and friends, and may assist with long-term management of the project.

Many of our projects have been located on public lands such as county forest preserves or municipal parks. Besides working with the boards of these groups it is also crucial to work with the neighbors that border these properties. If adjacent residents understand the project's values, they can be your greatest advocates; however, if they are unsure of your project or motives, they can be your greatest adversaries.

Never overlook or underestimate the opportunity to include an education component in project planning. Encourage schools, nature centers, and other service-oriented organizations (e.g. boys and girls clubs, 4-H, scouts) to use your site and possibly help with your project. Our wetland restoration sites are used for teacher training workshops and student field trips, as demonstration sites for others considering similar projects, and by bird watching and photography clubs. Trails, viewing platforms, signs, and brochures are all effective means of providing access and information to people using the project site.

THE REWARDS OF HABITAT RESTORATION IN URBAN LANDSCAPES

Since 1992, our Office has assisted in the development and completion of 61 projects that have had habitat restoration or enhancement as their primary focus. An additional 19 projects have been completed that had environmental education as their primary focus. Together, these 80 completed projects have improved or restored about 656 ha of wetland habitat and 366 ha of upland habitat in the greater Chicago Metropolitan area. These projects have included such examples as removing drain tile to restore a 0.1 ha wetland, returning a 25 ha farm field to native grassland, and installing a water control structure to manage a 90 ha shallow marsh. All of these projects have been completed with the assistance of other partners and funds. In fact, the Service's financial commitment to the 61 habitat projects was approximately $190,000, yet the total cost of these projects was > $1.8 million.

The following are examples of some multiple objective partnership projects.

Gompers Park Wetland

Gompers Park is a Chicago Park District property located on the northwest side of the City at Foster and Pulaski Avenues. The Chicago River bisects the park near this intersection. The challenges with restoring a wetland at this site included its small size, the historic filling of the wetland area, the site's proximity to the Chicago River, major roads, and existing ball fields, and a man-made lagoon on the south end of the park, which would be the primary source of hydrology for this wetland. The Chicago Park District and the neighborhood homeowners believed this could be a good project and sought technical and financial

assistance with this project through the Urban Resources Partnership. The District worked with the Natural Resources Conservation Service and the Service to develop a restoration plan. Soil scientists mapped out the areas of fill to be removed. A water control structure was installed that both would allow the Chicago River to flow onto the site during flood events and hold water on site rather than let it flow immediately back into the channel as floods subsided. The Friends of the Chicago River worked with the neighborhood association to promote the project, and organized community volunteers and schools to assist with planting the site. Wetland and prairie ecosystems now thrive where once there was soggy lawn. Local schools use the site for a variety of classes, and volunteers continue stewardship of the site.

Prairie Wolf Slough

This 17 ha site, located along the North Branch of the Chicago River in suburban Lake County, Illinois, is owned by the Lake County Forest Preserve District and was an agricultural site prior to restoration in 1996. This site was identified for possible wetland restoration during an inventory of the Chicago River system. The challenge was to locate and disable the subsurface tiles draining the agricultural field without affecting off-site drainage from nearby homes, road, shopping center, and office park. This site was chosen to be a demonstration of how wetland restoration can be accomplished in the urbanized Chicago River watershed and accessible for the public to use. In cooperation with the Forest Preserve District, the Natural Resources Conservation Service, the Lake County Stormwater Management Commission, and the Friends of the Chicago River, we developed a plan for restoring an emergent wetland, tallgrass prairie and oak savanna at this site. Hydrological monitoring, soil mapping, and drain tile surveys revealed that water on site could be held to re-hydrate the site supplemented with water from 2 detention basins that drained through a ditch directly into the Chicago River. Berms would be needed as well as a water control structure that again would allow the river to flood the site during periods of high flow. Funding for this project came from a variety of sources including: Fish and Wildlife Service, Urban Resources Partnership, Illinois EPA, Army Corps of Engineers, Forest Preserve District, Stormwater Management Commission, Friends of the Chicago River, and a private corporation. In addition, many volunteer hours were committed to this project. During the summer of 1996, some 700+ volunteers planted > 51,000 plant plugs as part of this wetland restoration. This site is used by the County and others to demonstrate the use of wetlands as polishing tools for urban run-off, wildlife habitat, and restoration techniques in urban settings. The site is located near a local high school and a nature center, and is being used for environmental education purposes by both.

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