

U.S. Fish & Wildlife Service Urban Bird Treaty Program Guidebook V.3

Making Cities Healthier Places for Birds and People



January 2020

*The U.S. Fish and Wildlife Service alone cannot achieve
the conservation of migratory birds—
it will take the collective and coordinated efforts
of thousands of partner organizations
and communities to do this.*

*Birds are everywhere
and we all have a responsibility
to act on their behalf.*

*The more clearly we can focus our attention
on the wonders and realities of the universe
about us the less taste we shall have
for the destruction of our race.*

— Rachel Carson



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Cover photo: Philadelphia hosts an extensive system of urban parks and green spaces. USFWS

Photo to the left: The female Northern Cardinal is one of only a few female North American songbirds that sings, which she does often while sitting on the nest. Jane Gamble

Back Cover: Children walking in the woods with an adult. USFWS



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I. Introduction to the UBT Program

1. Purpose of the UBT Program

The U.S. Fish and Wildlife Service (Service) created the Urban Conservation Treaty for Migratory Birds program (Urban Bird Treaty or UBT, <https://www.fws.gov/birds/grants/urban-bird-treaty.php>) to support partnerships of local, state, and federal government agencies, non-profit organizations, corporations, and local communities in conserving birds that live in and migrate through urban areas. The program has the dual focus of carrying out bird conservation while educating and engaging local communities in caring about and conserving birds and habitats in their neighborhoods and cities. The Service launched the UBT program in 1999 and signed the first two treaties with New Orleans and Chicago.

The treaty is a partnership agreement between a U.S. city and the Service that promotes the benefits of urban bird conservation to the city and its communities and expresses the city's support for helping achieve the goals of the UBT program.

Visit the UBT Story Map for example treaties and information on UBT city activities:

<https://arcg.is/1CeHPr0>

The UBT program is administered through the Service's Migratory Bird Program and is part of the inter-programmatic Urban Wildlife Conservation Program (UWCP), which includes Urban Wildlife Refuges (UWR) and Urban Wildlife Refuge Partnerships (UWRP) located in urban areas all across the U.S. (see Figure 1). These programs likewise work to empower local organizations in urban areas to seek innovative community-based solutions that promote environmental equity and inclusion, and healthy environments for wildlife and people. The UWCP programs overlap geographically and programmatically and many cities host active UBT partnerships, UWRs, and/or UWRPs. For more information on the UWCP, visit <https://www.fws.gov/urban/>.



Figure 1. The Service's Urban Wildlife Conservation Program structure. Sandy Spakoff/USFWS

The UBT program's mission is to help alleviate bird population declines and create connected conservation communities through enhanced opportunities for people living in urban areas to engage in bird-related recreation, conservation, education, science, and monitoring.

The UBT program's vision: Cities where birds and people can thrive.

The UBT program's tagline: Making cities healthier places for birds and people.

The goals of the UBT program are to:

- Protect, restore, and enhance urban habitats for birds.
- Reduce urban hazards to birds.
- Educate and engage urban communities in caring about and conserving birds and their habitats.

The UBT program operates **two main program components:**

1. A grant program administered by the National Fish and Wildlife Foundation (NFWF) through its Five Star and Urban Waters Restoration Grant Program (<https://www.nfwf.org/fivestar/Pages/home.aspx>), and
2. A designation program whereby the Service designates Urban Bird Treaty cities through a comprehensive application and reporting process for interested and eligible city partners.

Both program elements are designed to foster and support strong and sustainable partnerships among the Service, city governments, and other public and private organizations committed to achieving the mission and goals of the UBT program. The UBT grant program helps to finance community-based conservation projects designed to protect and conserve urban birds and their habitats while providing opportunities for local communities to deepen their connection with the natural world by engaging in bird-related activities. Cities are not required to be UBT cities to be eligible to apply for NFWF Five Star grants.

2. Making a Difference for Urban Birds

In North America, there are 2.9 billion fewer breeding birds than there were in 1970 (<https://science.sciencemag.org/content/366/6461/120>) as landscapes across the continent continue to lose their ability to support bird populations. Urban landscapes and communities have important roles to play in helping reverse these bird population declines. Cities can become safer, healthier places for birds and other wildlife with committed partners that are fostering environmentally aware communities dedicated to conserving bird habitats and reducing environmental hazards.

Community engagement in restoring bird habitats in parks, schoolyards, backyards, places of worship, roadsides, and right-of-ways can make a big difference for birds. Reducing the threats of building glass and lights in airspace and the hazards of chemicals, plastics, invasive species, and non-native predators is also crucial to improving bird survival in cities. Through the UBT program, partners are working hard to enhance their city's livability for birds that nest in and migrate through their urban areas. This is not only good for birds, but also for the health and well-being of people living in and visiting cities.



American Robin is a common urban and suburban bird species that forages largely on lawns, making it vulnerable to pesticide poisoning. Becky Matsubara, Creative Commons

Each of us makes decisions in our daily lives that have the potential to either help or hinder wildlife. In the case of helping birds, it can be something as simple as keeping pet cats inside, turning off the lights overnight during fall and spring migration, retrofitting glass windows to make them visible to birds, participating in community science programs, buying shade-grown coffee, or choosing bird-friendly native plants for a schoolyard habitat restoration site.

The UBT program promotes such beneficial actions by individuals, groups, and communities at specific sites as well as at broader landscape scales through comprehensive planning. It also encourages partners to work collaboratively toward system changes that can ensure bird conservation is integral to how cities operate and urban communities live. All of these approaches—site, landscape, and system-based efforts—help to ensure long-term, sustainable conservation for the benefit of future generations.

3. The Importance of Birds and Their Habitats to People

Birds are a valuable resource, contributing aesthetically, culturally, scientifically, recreationally, and economically to America's communities. Birds are integral parts of our landscapes, providing important—sometimes irreplaceable—functions: birds pollinate plants, disperse seeds, play critical roles in food webs as predators and prey, and provide important functions in pest control. For the vast majority of people in urban areas, birds represent their most frequent contact with wildlife.

Birds are indicators of the health of our environment. Changes in their populations can provide an indication of changes in the quantity and quality of the habitats, natural resources, and environments that people live in, use, and depend on. Habitats such as forests, meadows, and wetlands not only support birds but also provide important societal services such as flood control, groundwater recharge, pollutant filtration, air and water quality control, and carbon sequestration.

Bird habitats also provide places for people to spend time outdoors deepening their connection with nature, which has been shown to improve people's health and quality of life. Birdwatching, for example,



Spending time outdoors walking in the woods can deepen our connection with nature and improve our health and well-being. USFWS

promotes improved mental and physical well-being as a focused, meditational outdoor activity that involves physical movement. It also can be a partially, or entirely, indoor activity with similar benefits.

The level of bird-related recreation is a strong indicator of the value of birds to society. Nature-based recreation is the fastest growing segment of the tourism industry. According to the findings of the [2016 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation](#) produced by the U.S. Fish & Wildlife Service, more than 45 million people watch birds around their homes and away from home, joining other wildlife watchers in contributing a total of nearly \$80 billion to the U.S. economy.

4. The Importance of Green Space to Urban Communities

Providing more and better access to green space promotes healthier urban communities. These human health and well-being benefits include psychological relaxation, reduced depression and stress, improved social cohesion, safer outdoor environments, greater psychological attachment to home, immune system benefits, and enhanced physical activity. Green space can also provide ecosystem services associated with reduced exposures to noise, air pollution, and excessive heat. Improving availability of green spaces in ethnically diverse, underserved, and underrepresented communities can help promote environmental justice and health equality in urban populations and address deep-rooted inequities in access to parks and other natural areas.

Urban green space may also provide important economic and ecological co-benefits such as reducing fossil fuel usage through enhanced cycling and walking and supporting wildlife habitat and biodiversity. In addition, tree canopy and bird species diversity has been shown to benefit property values. Overall, cities that create and maintain well-connected, attractive green spaces are likely to have healthier and more productive people, neighborhoods, and communities with fewer demands for health services and reduced crime rates. Green cities are safer, happier cities.

5. Why Become An Urban Bird Treaty City?

- The UBT program's supportive networks of local and national partners can help you achieve your goals for making your city a healthier place for birds and people.
- The UBT program gives you opportunities to share and learn from other city partners' tools, tactics, successes, and challenges to advance your urban bird conservation efforts.
- You can strengthen the cohesion and effectiveness of your local partnerships by coming together and working under the banner of the UBT program.
- The UBT federal designation gives you improved access to funding through the National Fish and Wildlife Foundations' Five Star and Urban Waters Restoration grant program as UBT cities receive priority in this program.
- The UBT federal designation can help you garner additional funds through other urban conservation grant programs that have shared goals and objectives.
- By working on UBT habitat conservation and hazard reduction activities you can simultaneously achieve green building credits, reduced energy costs, green space requirements, environmental equity, and other sustainability goals.
- You can promote the livability and sustainability of your city by spreading the word about your city's UBT federal designation and all the benefits of a green and bird-friendly city.

II. UBT Designation Program Information

1. How to Apply for UBT City Designation

While any city can work to become a bird-friendly city, only a select few are designated each year by the Service to receive federal status as an Urban Bird Treaty city. The following describes the process for city partners to apply for UBT city status:

1. Contact the UBT national coordinator, Roxanne Bogart at roxanne_bogart@fws.gov about your intention to apply for UBT designation and set up a phone call to discuss the application process described below.
2. Submit a letter of intention from the city's partnership that details its commitment to urban bird conservation and community engagement in bird-related education, recreation, conservation, science, and monitoring. Support and involvement by the city government is required.
3. Along with the letter above, submit an implementation plan or "Bird Agenda" that includes the following components:
 - a. Detailed description of the importance of the city to migrating, nesting, and overwintering birds, habitats, population size of the city, and socioeconomic profile of the human communities present and those targeted for education and engagement programs (see <https://headwaterseconomics.org/tools/usfws-indicators/>). Cities must be at least 100,000 in population size but may include the metropolitan area if activities span that wide a geography. If not, only the municipality's population size counts towards designation (see b below).
 - b. Map of the geographic area that is being nominated for designation; suburban areas around the city may be included in the nominated area if comprehensive activities are ongoing or planned for those areas (i.e. metropolitan area).
 - c. List of individuals and organizations that are active in the partnership that is applying for designation, and contact information. A core UBT city team must be established and include at least three people from three organizations.
 - d. The mission, goals, and objectives of the partnership applying for designation, organized by the three UBT goal categories (see page 6).
 - e. Description of accomplishments (e.g., activities, products, outcomes) that have been completed over the last three years, the audiences and communities reached/engaged through those activities, and the partner organizations that have achieved them, organized by UBT goal categories.
 - f. Description of strategies, actions, tools/products that are being planned for the next five years under the UBT designation, the objectives to be accomplished, the audiences and communities targeted for engagement, and the partners who will complete the work, organized by UBT goal categories. Include monitoring and assessment efforts as part of an adaptive management approach.
4. Partners will be notified within three months if their UBT application was accepted. Applications are approved based on how well the implementation plan addresses the three goals of the UBT program and the strength and sustainability of the partnership submitting the application. The plan should include both site-based projects and activities as well as longer-term plans for landscape-level and system changes that promote the UBT program goals.

2. Resources for implementation Plan Development

Please use the above guidelines to develop the city's UBT implementation plan. Sections IV and V provide more in-depth descriptions of the three goals of the UBT program and links to a wealth of resources that can assist

partners in developing their Bird Agendas and programs. Please also refer to the UBT program Story Map for descriptions of existing UBT city programs and activities: <https://arcg.is/mDGDz>. The Service UWCP's Standards of Excellence can be found in Section VI and provide additional guidance for developing UBT plans, activities, and programs. Also visit <https://www.fws.gov/urban/soe.php> for more detailed information about these standards.

Below are links to example UBT city implementation plans that were created before the above UBT application process was developed and may be helpful for partners currently developing their "Bird Agendas."

Twin Cities: https://mn.audubon.org/sites/default/files/gubc_03-19-12_pdf.pdf

Chicago: https://www.chicago.gov/content/dam/city/depts/doe/general/NaturalResourcesAndWaterConservation_PDFs/Birds/ChicagosBirdAgenda2006_1.pdf

Portland: <https://www.portlandoregon.gov/bes/article/355002>

For specific examples of the kinds of activities to consider including in your Bird Agenda, please visit the links below to see lists of criteria for the state-based Bird City programs. These are separate programs run by different organizations but share similar goals to those of the UBT program:

Wisconsin Bird City program: <https://birdcitywisconsin.org/application-criteria> and

Texas Bird City program: https://tpwd.texas.gov/wildlife/birding/bird-city-texas/birdcitytexas_applicationcriteria.pdf

U.S. Bird City programs: <https://www.environmentamericas.org/working-in-communities-across-the-western-hemisphere/bird-city-americas/bird-city-programs/>

3. Signing Ceremonies and Anniversary Celebrations

Once your city's application is accepted, city partners will work with the Service to host an official signing ceremony where leaders from the city, the Service, congressional representatives, and other partners gather to celebrate the city's UBT designation by signing a non-binding partnership-based treaty document. At most events, leaders from the city, the Service, congressionals, and other partner organizations speak to attendees, and present official proclamations or resolutions regarding the importance of urban bird and habitat conservation to the city and its communities. Cities often designate one day each year to celebrate birds at an annual World Migratory Bird Day festival or similar event. After the formal ceremony, partners typically host education and outreach events for local students who are involved in the city's UBT educational programs. To see example UBT city treaties and proclamations from cities, visit the UBT Story Map at: <https://arcg.is/1CeHPr0>.



U.S. Fish and Wildlife Service Regional Director Wendi Weber signs the Providence Urban Bird Treaty with Mayor Jorge O. Elorza and elementary school students from Paul Cuffee School's Wild Kids Club at Roger Williams Park. Bridget Macdonald

UBT cities are also encouraged to celebrate 5, 10, or/and 20-year designation anniversaries as a way to recommit to UBT goals and efforts and reinvigorate city partnerships. These events are typically held on the city's annual World Migratory Bird Day or during other yearly nature festivals. A toolkit is in development and will be made available for planning and organizing ceremonies and celebrations. Contact the UBT national coordinator for more information.

4. UBT City Network Benefits

Once accepted, city partners will be given a high resolution UBT logo to use for outreach purposes and are invited to become part of a UBT Community of Practice that hosts supportive, informational conference calls, webinars, and workshops. The UBT program also provides a variety of opportunities for national and regional promotion of accomplishments through various communication and outreach efforts and products. These include:

- Urban Bird Treaty Story Map: <https://arcg.is/1CeHPrO>
- NCTC Urban Wildlife Conservation Program Webinar Series: <https://nctc.fws.gov/topic/onlinetraining/webinars/urban-wildlife-conservation.html>
- UWCP News Site: <https://www.fws.gov/urban/urbanNews.php>
- UBT Cities Network Facebook Group
- UBT National Newsletter *Urban Bird Conservation News*

UBT designation also increases the likelihood of being awarded funding through the National Fish and Wildlife Foundation's Five Star and Urban Waters Restoration Grant Program (see Section III) as active UBT cities receive extra points in the UBT grant program rating tool.

5. UBT City Reporting Requirements

City partners are required to report on accomplishments every two years based on objectives laid out in the city's implementation plan. If no implementation plan exists, activities and accomplishments should be organized by UBT goal categories. These reporting requirements supplement any reporting that cities are doing through the NFWF Five Star grant program. Reporting is used for accountability and storytelling purposes and is required to maintain an active UBT status. Implementation plans must be updated every five years and resubmitted to maintain active status.

Questions? Please contact Roxanne Bogart, UBT Program National Coordinator, with any questions you may have about the application process, program benefits, or reporting requirements.

Roxanne Bogart, Wildlife Biologist/Urban Bird Treaty Program Coordinator
U.S. Fish and Wildlife Service

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413-253-8424 (fax) roxanne_bogart@fws.gov, <https://www.fws.gov/urban/urbanBirdTreaty.php>



The Bird The Preserves initiative was launched in 2016 to promote Chicago's Forest Preserves as a world-class destination for birding—and to expose new audiences to this popular activity. Forest Preserves of Cook County

III. UBT Grant Program Information

1. NFWF Five Star Program Description

The National Fish and Wildlife Foundation's Five Star and Urban Waters Restoration Grant program (Five Star program) funds community-based conservation projects in U.S. cities. The Service's Migratory Bird Program contributes funds every year to this competitive grant program to support partnerships working on urban bird conservation in both UBT and non-UBT cities. The Five Star program includes funding from several other partner programs and organizations, including the Service's Urban Wildlife Refuge Partnerships program, the U.S. Forest Service, Environmental Protection Agency, and various corporate and private donors. Funds from these various partners total over \$1 million annually and are leveraged with one another to collaboratively fund projects.

2. UBT Grant Program Details

The UBT grants are awarded every year to a handful of high quality proposals that are submitted by non-federal partners to the NFWF Five Star grant program. Grants range in size from \$30k to \$50k with a partner match requirement of 1:1, and are either one or two-year awards. Projects funded through the grant program should include habitat restoration, hazard reduction, and community education and engagement activities that meet the goals of the UBT program. The NFWF Five Star Request for Proposals is typically released in early November with a proposal deadline of the end of January. For more information, please visit the NFWF Five Star program web site at <https://www.nfwf.org/fivestar/Pages/home.aspx>.

Projects are ranked based on their UBT designation status, the scale and quality of project activities, the number of UBT goals addressed by activities, budget appropriateness, the number and diversity of contributing partners, and the sustainability of the partnership and programs. Partners from non-UBT cities are eligible to apply. A U.S. Fish and Wildlife Service sponsor is required. If you do not have a sponsor, visit <https://www.fws.gov/offices/> to find an office near you or contact the national coordinator at Roxanne_bogart@fws.gov.



The Barn Swallow uses both urban and farmland areas for breeding and build their cup-shaped mud nests almost exclusively on human-made structures. Loren Chipman, Creative Commons

3. Examples of Funded Activities

The Urban Bird Treaty program offers a great deal of flexibility to incorporate project activities that are appropriate for each city and its local issues and communities. This allows cities to be creative and develop projects that will have the greatest benefits to birds and people and meet UBT program goals. The following are examples of the kinds of activities typically funded as a part of successful proposals:

- Engage volunteers in restoring a city park or vacant lot by planting native grasses, shrubs, and trees and/or removing non-native, invasive species.
- Work with the local planning department to develop a habitat conservation and management plan that over time will increase the quality and connectivity of natural areas throughout the city to improve wildlife movement and community access.
- Work with the local parks department to switch to non-lethal deterrents to protect plants from overabundant or nuisance animal species and/or reduce chemical fertilizers and pesticides in a demonstration garden and other park settings.
- Create a program that engages building owners in voluntarily retrofitting hazardous building glass and participating in a Lights Out/Dark Skies program.
- Engage students in planning, developing, monitoring, and maintaining a schoolyard bird habitat.
- Engage local ornithologists and birders to lead bird walks, monitor restoration sites, or carry out a bird collision monitoring program.
- Hire a local printing company and ethnically diverse artisan community to develop and produce educational products on reducing bird hazards from building glass, free-roaming cats, pesticides, and hazardous trash.
- Host an annual World Migratory Bird Day Festival, adopt a city bird, create a city birding trail, and announce a city proclamation supporting bird conservation.



Bird banding event in Hartford, CT. Joan Morrison



Volunteers working together to plant trees along the West River in Hartford, CT. Park Watershed

Questions about the NFWF Five Star program? Please contact:

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4. Sources of Additional Funding for Community-based Conservation

National Park Service Community Assistance Programs: <https://www.nps.gov/getinvolved/communities.htm>

Sustainable Forest Initiative Community Grants: <http://www.sfiprogram.org/communitygrants/>

Begin with Habitat Conservation, Improvement, and Planning Funding Opportunities: https://www.beginningwithhabitat.org/pdf/Funding_12.27.07_Final.pdf

Environmental Conservation and Justice Funders: <https://www.insidephilanthropy.com/grants-for-conservation>

Society for Non-profits Environmental Funding: https://www.snpo.org/publications/fundingalert_bycategory.php?cs=ENVI

Watershed Funding Opportunities: https://allaboutwatersheds.org/library/general-library-holdings/Watershed_Funding_Opportunities_AllaboutWatersheds.pdf

National Education Association Urban Grants: <http://www.nea.org/grants/39362.htm>

National Environmental Education Foundation: <https://www.neefusa.org/grants>

Urban Bird Treaty Program Story Map

The U.S. Fish and Wildlife Service's Urban Bird Treaty Program supports partners in U.S. cities to conserve urban habitats for birds, reduce urban hazards to birds, and educate and engage urban communities in bird appreciation, recreation, and conservation. Cities can become more healthful, beautiful, and bird-friendly when connected constituencies carry out community-based solutions to bird conservation. Read about our 30 UBT cities below. Supported by the National Fish and Wildlife Foundation.

UBT Cities | Habitat Conservation | Community Education and Engagement | Hazard Reduction

1. Albuquerque, New Mexico
2. Anchorage, Alaska
3. Atlanta, Georgia
4. Baltimore, Maryland
5. Chicago, Illinois
6. Denver, Colorado
7. Detroit, Michigan
8. Hartford, Connecticut
9. Houston, Texas
10. Indianapolis, Indiana
11. Kennedale, Texas
12. Lansing, Michigan

North America
Pacific Ocean
Atlantic Ocean

The Urban Bird Treaty Story Map provides a wealth of information about UBT city partners and their conservation programs and activities for urban birds and their habitats. Roxanne Bogart

IV. UBT Program Goal Descriptions

The following sections provide more detailed information, guidance, and resources to assist interested and existing UBT city partners in developing UBT city implementation plans that address the three UBT city goals. Submission of an implementation plan is required as part of the UBT designation program application process (see page 9). Section V provides links to additional on-line information and resources.

1. Protect, Restore, and Enhance Urban Habitats for Birds

a. The Importance of Urban Habitats for Birds. The widespread loss and degradation of habitat is the biggest driver of bird population declines. Human development of the natural landscape has resulted in the destruction and degradation of habitat for many species of birds and the trends in urban sprawl continue. Over 80% of the U.S. population is urbanized and over half of the land area in the U.S. is occupied by humans. For this reason, conserving, restoring, and managing urban habitats for birds is a major goal of the Urban Bird Treaty program.

b. Habitats Urban Birds Need. Birds use a wide variety of habitats for feeding, nesting, roosting, resting, and protection from predators. Habitats in urban areas are important for birds that nest and overwinter in cities and especially for birds that move through urban areas during their fall and spring migrations. Large concentrations of birds migrate along four major North American flyways or routes (i.e., Atlantic, Mississippi, Central and Pacific flyways) on which many large urban centers are located. Important migratory bird habitat is often found in and around these metropolitan areas. Stopover habitats are particularly important for birds to rest and refuel during their long migratory journeys.

Birds will use small patches of urban habitat—and even street trees—for shelter, foraging, and sometimes nesting. Therefore, efforts to restore vacant lots to pocket parks and incorporate green roofs on buildings can benefit many species of birds. Likewise, restoring, enhancing, and managing habitat in local parks, schoolyards, places of worship, corporate building lots, backyards, rights-of-way, sidewalks, road islands, and other “leftover areas” can add up to significant urban habitat for birds. Providing artificial and natural nesting and roosting sites is important for chimney swifts, purple martins, wood ducks, wrens, nuthatches, and other cavity nesting species. Riparian areas along rivers and lake fronts are particularly important for migrating birds that follow and cross these water systems and when restored and managed can serve as buffer areas helping improve water quality for local communities in addition to benefiting many other wildlife species. Acquiring or protecting natural areas, or other unprotected open space, through easements often may be the first step.

The most important facet of restoring urban bird habitat is ensuring that native plants, including trees, shrubs, grasses, and perennial flowers, are planted as part of the restoration effort. Native plants are of value not only for the shelter and direct resources they provide but for the higher insect populations that these plant species support compared to non-native plants. Food-rich vegetation—even on small lots—can make a difference for birds. All kinds of habitats are important for birds, including forests, woodlands, wetlands, grasslands, meadows, prairies, and riparian areas.

Green roofs—roofs covered in soil and a variety of native plants—are a great solution to creating bird habitat in cities where ground space is limited. Studies have shown that a variety of birds use



Students planting native shrubs at their schoolyard habitat in New Haven, CT. Audubon CT

green roofs for feeding, breeding, nesting, and resting. Green roofs also reduce stormwater run-off, decrease heating and cooling costs, reduce flooding, can be used as amenity spaces, and their costs are often mitigated by their benefits.

Considerations of habitat conservation in the short and long-term and at both the site and larger landscape scales are all important. Enlarging the extent of an existing park or other natural areas to increase connections among habitats is vital for allowing birds and other wildlife to move more safely among sites and promotes urban biodiversity. Likewise, working collaboratively to establish greenways, corridors, and other large-scale green spaces, and to offer broad-scale habitat certification programs are effective strategies to foster connectivity among city natural areas.

Working collaboratively toward system changes that promote bird habitat conservation, through government actions and participation by large segments of the community, can make a big difference in providing habitat over larger areas and for the long-term. This requires targeting education and outreach to engage communities and governments in promoting sustainable behaviors and actions that benefit birds and their habitats. Green infrastructure planning, design and management, native plant requirements, and designation of no mow zones are examples.

Undertaking pre- and post-restoration site monitoring of plant, bird, insect, and other wildlife species to establish baseline data and determine responses to actions is important to adaptively improve conservation efforts over time. These assessment activities also provide opportunities for community education and engagement. (Removal and control of invasive species prior to restoration is covered in the Goal 2: Reduce Urban Hazards section.)

c. Considering Effects on People. Both the positive and adverse effects of habitat conservation projects on communities need to be considered. Working to ensure that low income, underserved communities have equal access to green space while preventing “green gentrification” should be a critical component of projects. Engagement of residents and local organizations as co-creators, designers, managers and users of greenspace—not as passive

HABITAT CONSERVATION HIGHLIGHT

Many migratory birds arrive to find city habitat destroyed by development, overrun by exotic species, or polluted and depleted by human use. Led by Atlanta Audubon, Atlanta’s Urban Bird Treaty projects engage communities in creating and enhancing bird-friendly habitat by eradicating invasive, exotic plants and installing native plants in urban green spaces to provide quality bird foraging, nesting, and stopover habitat. This work has occurred at places such as Emma Wetlands at Blue Heron Nature Preserve and The Confluence of Peachtree Creek— Atlanta Audubon’s initial bird-friendly habitat restoration projects which now serve as models for future projects. Project sites—which engage the local community in restoration and monitoring and involve multiple partners around Atlanta—have attracted nearly 125 species of birds, indicating the importance of Atlanta’s urban habitats to birds and other wildlife.



Atlanta Youth Corps crew working on a habitat restoration project at Emma Wetlands. Adam Betuel, Atlanta Audubon

consumers—is key to helping prevent gentrification. When creating greenspaces, concomitant efforts are often needed to ensure low income housing and job opportunities are retained or developed to promote both economic and environmental equity.

d. Urban Birds to Target for Habitat Conservation.

Many bird species live in and migrate through urban areas, especially many common species (see <https://celebrateurbanbirds.org/learn/birds/fs/us/>). Some common birds are in decline such as Eastern Meadowlark, Chimney Swift, Field Sparrow, Common Grackle, and American Tree Sparrow and may occur in cities during all or some part of the year (see <http://www.partnersinflight.org/wp-content/uploads/2016/08/pif-continental-plan-final-spread-single.pdf>).

Be sure to consider the benefits of urban areas to Birds of Conservation Concern and Watchlist species that may overwinter or journey through the city during fall and spring migrations. Lists of these species can be found at <https://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php> and <http://www.stateofthebirds.org/2016/resources/species-assessments/>. Species that are of priority in your state and Migratory Bird Joint Venture region can be found by visiting <https://www.fishwildlife.org/afwa-informs/state-wildlife-action-plans> and <http://mbjv.org>.



Eastern Meadowlark is a Partners in Flight Common Bird in Steep Decline that is a frequent visitor of backyard bird feeders. Kelly Cogan-Azar

Evaluation and adaptive management are key to success: visit Prism’s toolkit at <https://conservationevaluation.org/> and the U.S. Department of Interior’s Adaptive Management Technical Guide at https://www.fwspubs.org/doi/suppl/10.3996/082012-JFWM-069/suppl_file/10.3996_082012-jfwm-069_s9.pdf.

Please see Page 24 in Section V for a comprehensive list of resources for conserving urban habitats for birds.

2. Reduce Urban Hazards to Birds

a. Hazards to Birds in Urban Areas. While cities can provide important bird habitats, which give people places to deepen their connection with nature, human development and activity in urban areas pose many threats to birds. As a result, cities will never be totally safe environments for birds and other wildlife. These threats include direct bird mortality from free-roaming cats, building glass and lights, communication towers, hazardous trash, invasive plants and animals, and pesticides. The last two threats also contribute to indirect mortality through reduced habitat quality and prey populations. The degree of bird mortality caused by human-made structures in airspace habitat (e.g., building glass, lights, towers, wind turbines, and power lines) and by human-introduced objects and animals (e.g., contaminants, invasive plants, plastics, fish netting, and free-roaming cats) have had a devastating cumulative impact on bird populations, especially migratory birds. Migration exposes birds to these and many other dangers and is considered to be the most hazardous life stage so ensuring safe migration airspace and ground habitat is critical to conserving migratory birds. For this reason, reducing urban hazards to birds is a primary goal of the UBT program.

b. Reducing Urban Hazards to Birds. The good news is there are many ways city partners can reduce urban hazards and make their cities safer for all birds, both migratory and resident. There are many ways to adapt lifestyles and behaviors to make city environments safer, friendlier places for birds to live in and pass through by reducing the risks of bird injury and mortality.

Actions by individuals to reduce these threats can make a big difference to bird populations especially when entire neighborhoods are engaged. Individual actions that are beneficial to birds include making windows safer by retrofitting them to reduce transparency and reflectivity, keeping cats indoors, reducing lawns and planting native species, and avoiding pesticides and single-use plastics. Other actions that people in urban areas can take to promote bird conservation include drinking coffee that is shade-grown and good for birds and sharing birdwatching skills and data through community recreation, science, and monitoring programs. Working with partners and communities to create widespread awareness of urban hazards to birds and then strategically reduce their threat and occurrence are critical steps to achieve success.

System changes to reduce these threats through government actions and widespread community participation can make a big difference by addressing these threats over larger areas and for the long-term. This requires targeted education and outreach to shift how communities envision their roles and impacts in relation to birds and their habitats. Efforts to promote increased social responsibility can “move the needle” toward sustainable behaviors and policies that benefit birds, other wildlife, and the environment of which we are all a part. For example, by working collaboratively with city, county, and state governments, partners can create lasting change through bird safe building and lighting standards, recycling programs, and limits on pesticide use.

c. Influencing Human Behavior. The general approach to address the human-induced hazards listed above involves reducing threats as much as possible in the short-term with the goal of removing them totally from the environment in the long-term.

In general, strategies should take a three-pronged approach that includes: (1) promoting knowledge, awareness, and motivation through communications, education, and outreach with effective social marketing messaging, tools, and vehicles designed for specific target audiences; (2) facilitating individual and community action by reducing barriers and creating opportunities for engagement, and (3) planning for and working toward long-term system change by working collaboratively with city leadership and other organizations through on-going communications and concrete demonstrations of urban bird conservation solutions and success. These strategies form a positive feedback loop of human dimension-related activities that can lead to long-term system changes. When barriers to actions are high and stakes are high, strategies that address the human dimensions of conservation are imperative and form the foundation of a social marketing approach. See the following article for information on stakeholder-specific messaging for urban bird conservation:

<https://link.springer.com/article/10.1007/s11252-015-0442-z>

By using the steps of social marketing it is possible to move individuals, communities, cities and states—even the entire country—to a new system of norms where consideration of urban bird safety and sustainability is ingrained in all levels of behavior, and policies and regulations promote and reinforce these new standards. Visit the sites below to learn more about the human dimensions of conservation and social marketing for environmental sustainability. These strategies can be used to address all the bird hazards described in the following sections.



Creating green spaces--such as green roofs--in urban environments is good for birds and people. Stacy Jean

Learning for Sustainability: <https://learningforsustainability.net/social-marketing/>

Community-based Social Marketing: <https://www.cbsm.com/>

Social Marketing : Influencing Behaviors for Good—Quick Reference Guide: https://www.socialmarketingservice.com/site/assets/files/1010/socmkt_primer.pdf

Human Dimensions of Natural Resource Management: <https://my.usgs.gov/hd/team/usfws>

d. Urban Bird Hazards to Focus On. Since there are many hazards to birds in the urban environment and partner capacity is limited, the UBT program encourages partners in cities to focus on the following five main urban birds hazards:

- Building glass—responsible for an estimated annual bird death of up to one billion individuals in the U.S.
- Lighted structures —contributes to the above estimate by drawing in, confusing, and exhausting birds.
- Free-roaming cats—responsible for an estimated annual bird death of 2.4 billion birds in the U.S.
- Pesticides— harm birds directly through poisoning and indirectly by reducing their food supply; one study estimated 2.7 million bird deaths in Canada alone.
- Hazardous trash—such as plastics and fishing line can result in significant bird deaths as a result of ingestion and entanglement.
- Invasive species— non-native, invasive plant species can adversely impact birds by outcompeting native species resulting in the loss of food and habitat provided by natives.

See the sections below for more information on each hazard.

Building Glass and Lighted Structures. A large proportion of migrating birds affected by human-built structures are songbirds, apparently because of their propensity to migrate at night, their low flight altitudes, and their tendency to be attracted to, trapped, and disoriented by artificial light, making them vulnerable to collisions. These collisions result in the mortality of up to a billion birds each

HAZARD REDUCTION HIGHLIGHT

Led by Michigan Audubon, partners in Lansing, MI are hosting Lights Out events to teach local communities about the hazards migratory birds face from light and untreated glass surfaces on businesses and homes to reduce bird injury and death due to collisions. Educational brochures, window tape samples, and collision tape demonstrations at events are reaching businesses and homeowners across the Greater Lansing area. In addition, volunteer collision monitors are gathering data through scientifically sound survey protocols to understand where the greatest threats to migratory birds are and to generate a map of collision risk across the Greater Lansing area. The map will help identify high risk structures and target buildings for highly publicized “bird-friendly renovations” that will be used as demonstration sites to inspire existing building owners and influence new construction projects.



Bird-window collision monitoring is an important activity that community volunteers can engage in to contribute to conservation. Michigan Audubon.

year in North America, including many that are not songbirds.

Collisions with glass result from issues of reflectivity and transparency—birds see the sky or other natural features reflected in the window or do not see them at all and may only see plants that may be located on the other side of the window due to its invisibility. Even windows in low-rise and single-story buildings can kill birds. Solutions entail retrofitting existing buildings with exterior applications that enable birds to see windows and to design and construct new bird-safe buildings and additions that are bird-friendly. Making sure replacement windows are bird-friendly is also important. Working with homeowners, building owners and associations, architect and design firms, local governments and planners, and academic organizations is key to success in both the short and long-term. Engaging a diverse network of audiences is key to success.

Lights Out programs encourage home and building owners and managers to turn off or dim interior and decorative lights to reduce the total light emitted from 11pm until sunrise during fall and spring migratory seasons. In addition to saving birds, building and home owners realize direct benefits, including decreased energy and maintenance costs. Extinguishing or dimming exterior or decorative lighting on homes and buildings and ensuring lighting is oriented downward, including spotlights, logos, lighted clock faces, greenhouses, antennae lighting, are important strategies to reduce adverse lighting conditions. Eliminating the brighter, bluer LED lights also will help reduce negative bird and other wildlife impacts.

For more information on other collision hazards, including communication towers, vehicles, utility lines, and wind turbines, and best practices and guidelines to address them, visit the Service’s Migratory Bird Program web site at <https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds/collisions.php>.

Free-roaming Cats. Cats, including both house and feral cats, are non-native predators of birds and can cause excessive mortality in local bird populations. Scientists estimate that cats kill 2.4 million wild birds and 12 billion small mammals each year in the U.S. Wildlife in the Western Hemisphere did not evolve in the presence of a small, abundant predator like the domestic cat, and thus did not develop defenses against them. Cats were introduced to North America by European immigrants only a few hundred years ago. Once caught by a cat, few birds survive, even if they appear to have escaped. Infection from the cat’s teeth or claws or the stress of capture usually result in death. Cats also have safer, healthier lives by staying indoors. In addition, cats transmit many serious diseases to humans. Solutions exist for keeping cats happy indoors, from building “catios” to walking cats on leads and harnesses to working with municipalities on effective solutions to free-roaming cats.

Hazardous Trash. Fishing line left around ponds, creeks and rivers in urban areas can entangle birds and result in mortality. In addition, lead fishing tackle and lead shot for hunting, plastic objects (e.g., straws, cups, lighters, bags, other disposable items, six-pack rings from beverage cans) and other debris pose debilitating hazards to birds. This is especially true for marine birds that live in waters



UBT partners in Portland, OR run a Lights Out program to save birds and promote energy savings and the enjoyment of dark skies./ Portland Audubon



Each year, over 1,500 volunteers join the River Rangers to clean, beautify, and restore the Woonasquatucket River Greenway in Providence, RI. Woonasquatucket River Watershed Council

where plastics and other trash are dumped or find their way there after careless disposal. Birds can swallow these objects or become entangled in the plastic rings.

Partners can work to encourage recreationists and organizations to place trash in proper receptacles and enlist local volunteers to conduct regular trash clean-ups of beaches, parks, and other popular areas for both birds and humans. Most importantly, partners can strategically encourage people and organizations to buy reusable items and reduce waste and, thereby, the hazardous trash that results. Removing the driver of the hazard—and not just the symptom—is key to success and long-term change.

Pesticides. Birds can be exposed to pesticides directly through ingestion of seeds or other items that have been treated with pesticides, or indirectly through consumption of prey that have ingested the pesticides themselves, leading to secondary poisonings of birds through biomagnification. Birds can also be indirectly affected through declines in insect prey populations caused by poisonings. When insect populations are reduced, this natural food source for birds is also reduced which negatively impacts bird populations.

Pesticides have been shown to cause rapid death and debilitating effects to birds in urban areas. A 1992 study conservatively estimated that 65 million birds die per year from pesticide poisoning or effects. Annual mortality is probably in the hundreds of millions, but deaths are very difficult to document. Most of the active ingredients known to be toxic to birds belong to one of three classes of chemicals: organochlorines, organophosphates, and carbamates. Methods such as integrated pest management can be effective in significantly reducing and eventually completely eliminating pesticide use depending on the context and requirements. Working collaboratively with city governments and other organizations to reduce pesticide use is critical to success.

Non-Native, Invasive Plant Species. As the U.S. population has grown, native plant and animal communities have been adversely impacted by the purposeful and accidental introduction of non-native plant species. Non-native species are those plant species that were not present at the time of European settlement. Because of very aggressive growth habits many non-native species become invasive and out-compete native plants. Not only are native plants at risk, but also the native wildlife species that depend on them, especially insect populations that birds depend on for foraging. This can be manifested as direct loss of plant food or loss of native habitat as non-native species out-compete native plants. Native plants support greater and more diverse insect populations so restoring native habitat is vital for restoring a healthy ecological community for birds.



Volunteers work to restore forest habitat in Gwynn Falls Leakin Park in Baltimore by removing invasive species and planting native trees and shrubs. Greater Baltimore Wilderness Coalition

Controlling invasive species is an important component of maintaining the ecological integrity of natural areas and is very often a restoration priority for land managers and conservationists. However, invasive species control is labor and resource intensive and requires long term effort. Addressing invasive species needs to be done in a focused way and is generally more successful in smaller, more manageable, areas where volunteers can help manage and monitor these species.

Evaluation and adaptive management are key to success: visit Prism's toolkit at <https://conservationevaluation.org/> and the U.S. Department of Interior's Adaptive Management Technical Guide at https://www.fwspubs.org/doi/suppl/10.3996/082012-JFWM-069/suppl_file/10.3996_082012-jfwm-069.s9.pdf.

Please see Page 27 in Section V for a comprehensive list of resources for reducing urban hazards to birds.

3. Educate and Engage Urban Communities in Caring About and Conserving Urban Birds and Their Habitats

a. Why Engage Local Communities. Promoting public enjoyment, awareness, knowledge, and concern are crucial to achieving urban bird conservation in the short-term and for long-term sustainability. Communities that are enthusiastic about and appreciate birds, informed about their benefits and threats, and empowered to become involved in conservation, can make a significant contribution to maintaining healthy bird populations. Likewise, local individuals, families, and communities benefit tremendously by spending time in nature and watching birds near their homes and in their cities. Thus, creating opportunities for local communities to engage in bird-related education, recreation, science, monitoring, and conservation activities is a major goal of the UBT program. Collaborative programs and activities that are community-directed and led can achieve the greatest results for both birds and people.

Community education and engagement can support the achievement of the first two UBT program goals—conserving urban habitat for birds and reducing urban hazards to birds— by giving people the chance to learn, become motivated, and get involved in these activities. It also can affect the daily choices individuals and families make in support of bird conservation from buying bird-friendly coffee to turning off lights and retrofitting windows to keeping pet cats indoors. Engagement in bird education, recreation, and community science and stewardship opportunities also help deepen people’s connection to nature in their neighborhoods, which not only benefits birds but also improves the health and well-being of people, families, and entire communities. These activities also promote natural resource and wildlife conservation career awareness and job skill development for young people by giving them opportunities to participate in and even lead bird-related education, science, and stewardship programs.

It is critical to ensure that all people, especially ethnically diverse, underserved, and underrepresented communities, have access to

COMMUNITY ENGAGEMENT & EDUCATION HIGHLIGHT

Chicago’s Bird the Preserves is an initiative designed to connect diverse communities to the preserves, expand birding programs and activities, and establish the Forest Preserves of Cook County (FPCC) as a premiere birding destination in the Chicago Wilderness region. The FPCC’s nearly 70,000 acres provide abundant opportunities to see 365 types of resident and migrant birds, both common and unusual, that depend on forest preserve habitat. Committed to ensuring that all people feel welcome at the preserves, the FPCC works with Chicago Audubon Society and other partners to reach out to diverse communities to introduce them to all that the forest preserves have to offer. Birding can serve as a gateway activity to a greater connection to the natural world by providing a positive and fun experience in nature.



Chicago’s Bird the Preserves Initiative. FPCC

safe places to relax and recreate in natural settings. These efforts foster environmental justice and equity as well as a community conservation ethic. All the efforts described above have the long-term and critical benefit of fostering conservation constituencies that support healthy urban environments and sustaining wildlife conservation into the future. Please refer to the Service’s Urban Wildlife Conservation Program’s Standards of Excellence for guidance in developing community education and engagement programs and activities: <https://www.fws.gov/urban/soe.php>.

b. Types of Community Activities. Partners develop and carry out three main groups of community programs, activities, and other opportunities as described below. Priority audiences include youth, ethnically diverse, underrepresented, and underserved communities, especially those with limited access to green space and neighborhoods where priority bird conservation efforts are targeted. The beauty of the UBT program is the achievement of all three program goals simultaneously through coordinated planning and priority-setting to achieve both biological goals for birds and human dimension goals for communities, especially those in need of clean air and water and places to safely spend time in nature.

Bird-related educational and recreational programs, festivals, celebrations, and birding trails help foster a deeper understanding, appreciation, and enjoyment of birds and their conservation needs. Partners can develop and use a wide variety of creative communications, education, and outreach tools to promote and support these activities, including articles, videos, websites, brochures, curricula, and many other products—even geocaches! Partnering strategically with organizations with venues that draw large numbers of people—such as nature centers, national wildlife refuges, museums, and zoos and aquaria—is an efficient and effective approach to reach many people with messaging, education, and program engagement.

Community science and monitoring programs can support the goals of the UBT program by improving our understanding of the status of urban bird populations, their habitat and threats, and their responses to conservation efforts. Community science programs typically involve partnerships between the public and professional scientists who cooperate to conduct large-scale monitoring and research. Community scientists make up the world’s largest research teams, gathering data to better understand and conserve biological diversity. Community science and stewardship can go hand-in-hand by involving local people and community organizations, for example, in bird collision monitoring, annual bird counts, or pre- and post-habitat restoration monitoring of birds, plants, and other indicators of conservation success. These effects can be vital to adaptively learn from and improve conservation effects over time.

Community stewardship programs that engage people in hands-on conservation efforts include invasive species removal and control, trash removal, restoration and planting efforts, and other conservation actions, including student job training and work experiences. Community stewardship programs are an important part of the UBT program. Partners can engage entire communities in enjoying and protecting birds and other wildlife where they live, work, learn, play, and worship by creating opportunities to remove invasive species, restore habitat with native plants, and create healthy spaces that benefit resident and migratory species—whether it’s small window boxes or vast habitat corridors that connect city green spaces.

Evaluation and adaptive management are key to success: visit Prism’s toolkit at <https://conservationevaluation.org/> and the U.S. Department of Interior’s Adaptive Management Technical Guide at https://www.fwspubs.org/doi/suppl/10.3996/082012-JFWM-069/suppl_file/10.3996_082012-jfwm-069_s9.pdf.

Please see Page 30 in Section V for a comprehensive list of resources for community education and engagement.

V. UBT Program Information Resources

1. Resources for Conserving Urban Habitats for Birds

Native Plants for Birds and Habitat Certification and Restoration Programs:

Follow these link for more information on using native plants in bird and wildlife habitat restorations and what plants to use in your area:

Audubon's Plants for Birds: <https://www.audubon.org/plantsforbirds>

Audubon Native Plants Database: <https://www.audubon.org/native-plants>

National Wildlife Federation's (NWF) Garden for Wildlife: <https://www.nwf.org/garden-for-wildlife>

NWF's Native Plant Challenge to Cities: <https://blog.nwf.org/2019/09/native-plant-challenge-calling-all-cities-to-plant-native/>

Audubon Rockies Habitat Hero Program: <https://rockies.audubon.org/habitat-hero>

Houston Audubon's Bird-Friendly Community Program: www.birdfriendlyhouston.org/

Portland Audubon's Backyard Habitat Certification Program: www.backyardhabitats.org/

St. Louis Audubon Society's Urban Habitat Restoration Program: www.stlouisaudubon.org/conservation/BCH/index.php

NWF's Tree Equity Efforts: <https://blog.nwf.org/2019/08/tree-equity-in-broward-county/>

U.S. Fish and Wildlife Service (USFWS) Pacific Southwest Region's Schoolyard Habitat Program (CA, NV and Klamath Basin): <https://www.fws.gov/cno/conservation/Schoolyard.html>

USFWS Schoolyard Habitat Guide: <https://www.fws.gov/cno/pdf/habitatguidecolor.pdf>

Audubon Connecticut's Schoolyard Habitat Knowledge Network: <https://ct.audubon.org/schoolyard-habitat>

Plant Conservation Alliance: <https://www.blm.gov/programs/natural-resources/native-plant-communities/national-seed-strategy/pca>

Audubon Connecticut's Urban Oases site selection tool for the New Haven Harbor Watershed that integrates bird habitat conservation and environmental equity: <https://www.arcgis.com/apps/webappviewer/index.html?id=b7b53a9ad6b848e49f18df7a853e19e0>

Habitat Conservation and Restoration:

Follow these links to learn more about conserving and restoring specific habitat types to benefit birds and other wildlife.

Bird Habitat Information:

Cornell Lab of Ornithology and The Nature Conservancy's Habitat Network: Articles on how to cultivate habitat for birds and other wildlife.



Illustration from the Greater Hartford Plant Palette poster that depicts migratory and resident birds and the native plants and seasonal food sources they need to survive. Park Watershed http://www.parkwatershed.org/wp-content/uploads/2013/05/BackGraphic_5_1_14.pdf

<http://content.yardmap.org/learn/category/birds/>

Conserving Habitat on Private Lands:

Land Trust Alliance: <https://www.landtrustalliance.org/find-land-trust>

USFWS Partners for Fish and Wildlife Program: <https://www.fws.gov/partners/siteMap.html>

Forest Restoration:

U.S. Forest Service's (USFS) Urban and Community Forestry: <https://www.fs.fed.us/managing-land/urban-forests/ucf>

USFS's Urban Tree Canopy Assessments: <https://www.nrs.fs.fed.us/urban/utc/>

American Forest Foundation's My Land Plan: <https://mylandplan.org/content/create-healthy-bird-habitat>

NYC Parks and Recreation's Guidelines for Urban Forest Restoration: <https://www.nycgovparks.org/pagefiles/84/guidelines-to-urban-forest-restoration.pdf>

Prairie Restoration:

University of MN Extension Service: <https://extension.umn.edu/planting-and-growing-guides/planting-and-maintaining-prairie-garden>

Katy Prairie Conservancy: <http://www.katyprairie.org/buildpocketprairies>

Practical articles on Midwest urban prairie restoration: <http://melissagaskill.blogspot.com/2010/07/restoring-urban-prairie.html> and https://e360.yale.edu/features/in_us_midwest_restoring_native_prairie_ecosystems_kessler

Urban Habitats article on seed source selection for prairie habitat restoration: http://www.urbanhabitats.org/v05n01/seedsource_full.html

Wetlands Restoration:

Environmental Protection Agency (EPA) site with basic information on wetland restoration: <https://www.epa.gov/wetlands/basic-information-about-wetland-restoration-and-protection>

Association of State Wetlands Managers: <https://www.aswm.org/wetland-science/wetland-restoration>

Coastal Habitat Restoration:

USFWS Coastal Program: <https://www.fws.gov/coastal/about.html>

National Oceanic and Atmospheric Administration's (NOAA) Community-based Strategic Habitat Restoration program: <https://www.fisheries.noaa.gov/national/habitat-conservation/strategic-habitat-restoration>

Habitat Management Practices:

Follow these links to learn more about specific management practices that benefit birds and other wildlife:

No Mow Zones:

Yardmap, *Must We Mow? How to Increase Wildlife Value of Working Landscapes*: <http://content.yardmap.org/learn/must-we-mow/>

Creating Habitat Connectivity:

American Society of Landscape Architect (ASLA), *Green Infrastructure: Wildlife Habitat and Corridors*: <https://www.asla.org/ContentDetail.aspx?id=43534>



Student Conservation Association interns planting trees to restore habitat in Charles H. Milby park in southeast Houston. Valeria Casas, SCA

NWF's Wildlife Corridors: <https://www.nwf.org/Our-Work/Habitats/Wildlife-Corridors>

Yardmap, Habitat Connectivity in the Yard: <http://content.yardmap.org/learn/habitat-connectivity-2/>

Article on Best Management Practices (BMPs) for Corridor Design—Section III Practices for urban development in corridors: http://corridordesign.org/dl/docs/corridordesign.org_BMPs_for_Corridors.pdf

Retaining Deadwood:

Yardmap, Snags: <http://content.yardmap.org/learn/habitat-feature-snags/>
and <http://content.yardmap.org/learn/snags/>

Yardmap, Logs: <http://content.yardmap.org/learn/logs/>

Providing Food and Water:

Yardmap, Food: <http://content.yardmap.org/learn/category/food/>

Audubon, Bird Feeders: <https://www.audubon.org/news/bird-feeding-tips>

Yardmap, Water: <http://content.yardmap.org/learn/category/water/>

Nest Boxes and Roosting Sites:

Audubon: <https://www.audubon.org/news/build-nest-box-welcome-spring-birds>

USFWS: <https://www.fws.gov/birds/bird-enthusiasts/backyard/homes-for-birds.php>

Cornell Lab of Ornithology: <https://www.allaboutbirds.org/attract-birds-with-roost-boxes/>

Cornell Lab of Ornithology: <https://www.allaboutbirds.org/will-birds-use-nest-boxes-to-roost-in-for-warmth-during-the-winter/>

Texas Parks and Wildlife Department, Chimney Swift Towers.: https://tpwd.texas.gov/publications/nonpwpdpubs/media/dwa_chimney_swift_information_2005.pdf

Green Roofs:

Green Roof Information and Resources: <https://greenroofs.org/>

Green Roof Ideas: <https://content.yardmap.org/learn/green-roof/>

Green Roof Research Alliance, NYC: <https://www.greenroofsny.com/about-us>

Article on how urban green roofs provide habitat for migrating and breeding birds and their arthropod prey: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0202298>

Article on bird response to green roofs in urban landscapes in the Midwestern USA: <https://wildlife.onlinelibrary.wiley.com/doi/full/10.1002/wsb.566>

Audubon article on bird friendly green roofs designs:

<http://www.audubon.org/news/roofing-revolution-how-gorgeous-green-roofs-benefit-birds>

Green Roof Resources: <https://www.greenroofs.com/projects/>

EPA document on how to apply green roofs to the local level: <https://www.epa.gov/sites/production/>



Chimney Swift tower construction at Hartrick Park in Lansing MI. Michigan Audubon

[files/2014-07/documents/implementing_green_roof_projects_at_the_local_level-neelampatel.pdf](#)

Incentives: My Plant Connection <http://myplantconnection.com/green-roofs-legislation.php>

ASLA classroom curriculum: The Roof is Growing: American Society of Landscape Architects <https://www.asla.org/greenroofeducation/teacher-resources.html>

Environmental Sustainability and Human Health

Follow these links to learn more about why bird and habitat conservation is important for overall environmental sustainability and human health and well-being and for more information on positive actions.

U.S. Forest Service's report *Urban Nature for Human Health and Well-being*:
https://www.fs.fed.us/sites/default/files/fs_media/fs_document/urbannatureforhumanhealthandwellbeing_508_01_30_18.pdf

USFWS and Land Trust Alliance's *Investing in Nature*:
<https://www.fws.gov/cno/conservation/pdfFiles/Investing-In-Nature.pdf>

North American Bird Conservation Initiative brochure on benefits of bird conservation to people: <http://nabci-us.org/wp-content/uploads/2018/08/NABCI-linking-bird-conservation-to-human-benefits-1.pdf>

Article, *Watching birds is good for you*:
<https://www.sciencedaily.com/releases/2017/02/170225102113.htm>

7 Actions to Make a Bird-Friendly Planet: <https://www.3billionbirds.org/>

National Audubon Society's Bird Friendly Communities program:
<https://www.audubon.org/conservation/bird-friendly-communities>

National Wildlife Federation's Wildlife Management Plan Challenge to Cities: <https://blog.nwf.org/2019/06/cities-need-urban-wildlife-plans-to-combat-the-extinction-crisis/>

The Nature Conservancy's *Outside Our Doors*: https://www.nature.org/content/dam/tnc/nature/en/documents/Outside_Our_Doors_report.pdf

University of Washington's *7 Benefits of Nature to Cities*:
<https://www.conservationmagazine.org/2014/02/7-benefits-bringing-nature-back-cities/>

Biophilic Cities: Connecting Cities and Nature: <https://www.biophiliccities.org>

Articles on preventing gentrification from park and green space creation:
<https://www.citylab.com/life/2019/10/urban-parks-gentrification-city-green-space-displacement/599722/>
and <https://www.greenbiz.com/article/can-we-green-cities-without-causing-gentrification>

2. Resources for Reducing Urban Hazards to Birds

Why Birds Collide With Glass And Mortality Rates:

American Bird Conservancy:
<https://abcbirds.org/program/glass-collisions/why-birds-hit-glass/>

Cornell Lab of Ornithology:
<https://www.allaboutbirds.org/why-birds-hit-windows-and-how-you-can-help-prevent-it/>

Article on bird–building collisions in the United States and estimates of annual mortality and species vulnerability: http://www.audubon.org/sites/default/files/documents/loss_et_al_bird-building_collisions_condor_2014.pdf

Article on factors influencing bird-building collisions in the downtown area of Minneapolis: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0224164>

Bird Safe Building Guidelines, Standards, And Solutions:

U.S. Fish and Wildlife Service's *Reducing Bird Collisions with Buildings and Building Glass Best Practices*: <https://www.fws.gov/migratorybirds/pdf/management/reducingbirdcollisionswithbuildings.pdf>

American Bird Conservancy (ABC), *Bird-friendly Building Design*: <https://abcbirds.org/program/glass-collisions/bird-friendly-design/> and

Solutions at Home:

<https://abcbirds.org/program/glass-collisions/bird-friendly-window-solutions/>

ABC list of products shown to reduce bird collisions on glass, options for: www.birdsmartglass.org

Minnesota Audubon: http://mn.audubon.org/sites/default/files/05-05-10_bird-safe-building-guidelines.pdf

Portland Audubon: <https://audubonportland.org/our-work/protect/habitat-and-wildlife/urban/reducing-wildlife-hazards/bird-safe-building/>

New York City Audubon: <http://www.nycaudubon.org/pdf/BirdSafeBuildingGuidelines.pdf>

Bird Friendly Chicago: <https://birdfriendlychicago.org/mission-2>

Lights Out Programs And Dark Skies Initiatives:

Fatal Lights Awareness Program: <https://flap.org/> (Canada)

National Audubon Society's Light Out program: <https://www.audubon.org/conservation/project/lights-out#> and Existing City Lights Out Programs: <https://www.audubon.org/conservation/existing-lights-out-programs>

Portland Audubon's Lights Out Program: <https://audubonportland.org/our-work/protect/habitat-and-wildlife/urban/reducing-wildlife-hazards/bird-safe-building/lights-out/>

Lights Out Chicago: https://www.chicago.gov/city/en/progs/env/lights_out_chicago.html

International Dark Skies Initiative: <https://www.darksky.org/> and information on certified light fixtures: <https://www.darksky.org/our-work/lighting/>



Keeping cats indoors is one of the best ways to help cats and birds. Petsafe

Keeping Cats Indoors For The Safety Of Cats, Birds, And Other Wildlife:

American Bird Conservancy's Cats Indoors program: <https://abcbirds.org/program/cats-indoors/> and <https://abcbirds.org/program/cats-indoors/cats-and-diseases/>

Green Stewards' 20 Reasons to Keep Cats Indoors: <http://www.globalstewards.org/cats-indoors.htm>

The Humane Society's 10 Tips to Keep Your Cat Happy Indoors: <https://www.humanesociety.org/>

[resources/10-tips-keep-your-cat-happy-indoors](#)

Village of Oak Harbor's Bird Safe/Bird Friendly Cat Roaming Program and Ordinance: <http://www.biggestweekinamericanbirding.com/michael-hutchins-memorial-conservation-fund.html>

Reducing Hazardous Trash And Its Impacts On Birds:

Birdwatching Daily article on how to reduce the hazards of plastic trash: <https://www.birdwatchingdaily.com/beginners/helping-birds/help-birds-cleaning-up-trash-plastic/>

The Spruce's article *How Litter Hurts Birds*: <https://www.thespruce.com/how-litter-hurts-birds-386484>

Audubon article on threats of plastics to shorebirds: <https://www.audubon.org/news/plastic-threatens-even-our-common-shorebirds-study-warns>

American Bird Conservancy on the threat of plastics to birds: <https://abcbirds.org/plastics-pose-an-enduring-threat-to-seabirds/>

Article, *Threat of plastic pollution to seabirds is global, pervasive, and increasing*: <https://www.pnas.org/content/112/38/11899>

Article on reducing plastic trash: <https://jaymiheimbuch.com/articles/conservation-photography/90-percent-of-sea-birds-have-eaten-plastic-here-are-9-ways-you-can-reduce-plastic-use-today/>

World Migratory Bird Day 2019 theme, Protect Birds: Be the Solution to Plastic Pollution: <https://www.migratorybirdday.org/#>

Reducing Pesticide Use And Its Impacts On Birds:

Beyond Pesticides: Protecting Health and the Environment with Science, Policy and Action: *How pesticides impact birds and what communities can do to reduce pesticide use*: <https://www.beyondpesticides.org/programs/wildlife/birds>

EPA's Tips for Reducing Pesticide Impacts on Wildlife: <https://www.epa.gov/safepestcontrol/tips-reducing-pesticide-impacts-wildlife>

EPA's Pesticide Program: Protecting pollinators through regulatory, voluntary, and research programs: <https://www.epa.gov/pollinator-protection/what-you-can-do-protect-honey-bees-and-other-pollinators>

Removing And Controlling Invasive Plants:

FWS information on invasive species, including contacts, frequently asked questions, activities, partnerships and grants, and injurious wildlife information: <http://www.fws.gov/invasives/>

Center for Invasive Species and Ecosystem Health: state species lists, how to control invasive species, and facts on invasive species. <http://www.invasive.org/species.cfm>

USDA Invasive Species Information for: grants, identification, curriculum, invasive species events and information on invasive species: <https://www.invasivespeciesinfo.gov/index.shtml>

The Nature Conservancy on how to prevent and control the spread of invasive species in all 50 states that focuses on prevention and early detection: <http://www.nature.org/initiatives/invasivespecies/>

Pennsylvania Land Trust Alliance's guide to assist landowners and land managers in developing and implementing a management program for controlling invasive species:

<https://conservationtools.org/guides/31-invasive-species-management-program>

3. Resources for Community Education and Engagement

Education and Recreation Programs and Activities:

Nature of American Study: an initiative to understand and connect Americans to nature: <https://natureofamericans.org/>

Cornell Lab of Ornithology's educational resources for all ages: <https://www.birds.cornell.edu/home/education/>

Flying WILD, a program of the Council for Environmental Education: <http://www.flyingwild.org/involved.htm>

USFWS Junior Duck Stamp - Annual Junior Duck Contest information, rules, entry forms (English/Spanish), frequently asked questions and art tour information: <http://www.fws.gov/juniorduck/>

USFWS list of other resources to connect people with birds: <https://www.fws.gov/birds/education.php>

Urban Bird Sounds Project by and for students that teaches students to recognize bird sounds in the city: http://urbanbirdsounds.org/UBSP_website/Urban_Bird_Sounds_Project.html

The Schoolyard Birding Challenge, a monthly birdwatching contest open to students in all public, private, and home schools; participants work together to observe, identify, and record bird species found on their school grounds: <https://www.poweredbybirds.com/the-national-schoolyard-birding-challenge/>

National Audubon Society's Audubon Adventures, environmental education curriculum for grades 3 - 5 with science content about birds, wildlife, and their habitats: <http://www.audubonadventures.org/>

Journey North, a global study of wildlife migration and seasonal change, and includes lesson plans and background materials for classes to enter their own data, track and learn about migratory species: <http://www.learner.org/jnorth>

Earth Force, a program engages young people as active citizens to improve the environment and their communities through civic experiences in solving tough environmental problems. <https://earthforce.org/about/>

The Children & Nature Network, encourages and supports people and organizations working nationally and internationally to reconnect children with nature, and provides a critical link between researchers and individuals, educators and organizations dedicated to children's health and well-being: <http://www.childrenandnature.org/>

The Fledging Birders Institute, a non-profit environmental education organization that brings the joy and benefits of birding to others to promote healthy development and bird conservation, and home of the Schoolyard Birding Challenge: <http://fledgingbirders.org/>

Smithsonian Migratory Bird Center education programs: <https://nationalzoo.si.edu/migratory-birds/school-programs>



*Pride Week Bird Walk sponsored by NYC Audubon.
NYC Audubon*

Shorebird Sister Schools Program, a science-based environmental education program that engages participants in learning about and conserving shorebirds and their habitats and connecting people along flyways: <http://www.fws.gov/sssp/>

Watchable Wildlife Inc., an organization that provides strategies for positive wildlife viewing experiences and helps local communities realize the economic potential of wildlife and nature-related recreation and conserving: <http://www.watchablewildlife.org/about/default.htm>

Environment for the America's World Migratory Bird Day, organization that provides resources for and coordinates a global theme-based bird conservation education campaign: <https://www.migratorybirdday.org/about-wmbd/>

eBird Young Birder Clubs: <https://ebird.org/about/resources/for-young-birders/young-birder-clubs>

Birding Trails by State: <https://www.trailink.com/activity/birding-trails/>

National Park Service Community Assistance Programs: <https://www.nps.gov/getinvolved/communities.htm>

Community Science and Monitoring Programs:

Cornell Lab of Ornithology coordinates multiple projects for community scientists of all ages, including Celebrate Urban Birds, eBird, NestWatch, Project FeederWatch, and Great Backyard Bird Count: <https://www.birds.cornell.edu/citizenscience/>

Partners In Flight, a coalition of public and private agencies that focuses resources on improving monitoring and inventory, research, management, and education programs involving birds and their habitats: <https://www.partnersinflight.org/what-we-do/build-public-support/>

North American Breeding Bird Survey, an annual survey run by the U.S. Geological Survey that engages volunteer birder participation: https://www.usgs.gov/centers/pwrc/science/north-american-breeding-bird-survey?qt-science_center_objects=0#qt-science_center_objects

National Audubon Society's Christmas Bird Count, a community monitoring program that engages volunteers to survey for birds in December/January each year: <https://www.audubon.org/conservation/join-christmas-bird-count>

NAS's Climate Watch: <https://www.audubon.org/conservation/climate-watch>

NAS's Great Backyard Bird Count: <https://www.audubon.org/conservation/about-great-backyard-bird-count> and Hummingbirds at Home: <http://www.hummingbirdsathome.org/>

Bird Banding Lab of the North American Bird Banding Program, jointly administered by the U.S. Department of the Interior and the Canadian Wildlife Service with banding offices have that use the same bands, reporting forms, and data formats. www.pwrc.usgs.gov/BBL/

Smithsonian Migratory Bird Center's Neighborhood Nestwatch, program that provides opportunities for people to learn about birds in their own backyards and help scientists solve critical questions regarding the survival of backyard bird populations: <https://nationalzoo.si.edu/migratory-birds/about-neighborhood-nestwatch>

Audubon's Chimney Swift Sit and Hummingbirds at Home, community monitoring programs that engage people in watching and surveying these species: <https://www.zumbrovalleyaudubon.org/chimney-swifts.html> and [hummingbirdsathome.org/](http://www.hummingbirdsathome.org/)

Chicago Bird Collision Monitors, program that engages volunteers during fall and spring migration in monitoring bird collisions, bird rescue, bird transport, public outreach, or fundraising: <https://www.birdmonitors.net/Volunteer.php> National Geographic Society's BioBlitz, a community science program where scientists, families, students, teachers, and other community members work together to get a snapshot of an

area's biodiversity using the iNaturalist app: <https://www.nationalgeographic.org/projects/bioblitz/>

Stewardship Program Opportunities:

National Audubon Society's Bird Friendly Communities, program that helps people make their communities more sustainable by restoring wildy habitat and reconnecting with nature: www.audubon.org/conservation/bird-friendly-communities

National Wildlife Federation's (NWF) Garden for Wildlife, program that educates and empowers people to turn their own small pieces of Earth into thriving habitat for birds and other wildlife while deepening their connections to the natural world: <https://www.nwf.org/Garden-for-Wildlife>

NWF's Mayor's Monarch Pledge, program that engages mayors and other local and tribal government chief executives in U.S. cities to commit to creating habitat for the Monarch butterfly and other pollinators and to educating communities: <https://www.nwf.org/MayorsMonarchPledge>

FWS Pacific Southwest Region Schoolyard Habitat program: <https://www.fws.gov/cno/conservation/Schoolyard.html> and planning guide <https://www.fws.gov/cno/pdf/habitatguidecolor.pdf>

Connecticut Audubon Schoolyard Habitat Network: <https://ct.audubon.org/schoolyard-habitat>

National Park Service Community Assistance Programs: <https://www.nps.gov/getinvolved/communities.htm>

Student Job Training and Work Experiences: Connect with these organizations to hire students or find volunteers to work for conservation projects in your community:

Student Conservation Association (SCA): <https://www.thesca.org/about>

Youth Conservation Corps: <https://www.nps.gov/subjects/youthprograms/index.htm>

Groundwork USA: <https://groundworkusa.org/>

Green Job Corps: <https://greencorps.org/index.html>

4-H Clubs: <https://4-h.org/>

Hispanic Access Foundation: <https://www.hispanicaccess.org/get-involved>

Greening Youth Foundation: <https://gyfoundation.org/Urban-Youth-Corps>

American Conservation Experience: <http://www.usaconservation.org/hire-a-crew/>



Flyer promoting opportunities for community members to engage in prairie and pollinator science and conservation in Houston.

VI. UWCP Program Standards of Excellence

The Standards of Excellence is the framework for the Urban Wildlife Conservation Program. The Standards give guidelines and objectives for urban refuges and urban partnerships, including Urban Bird Treaty cities, to plan for the future, to measure success, and to take advantage of extraordinary opportunities to build a conservation constituency with their immediate neighbors.

The future success of conservation lies ultimately in our ability to inspire Americans to connect with the outdoors and nature, and to become stewards of the environment. With over 80% of Americans living in urban areas, spending less time outdoors, and becoming more ethnically and racially diverse, our challenge is to become relevant in their daily lives. Without public awareness and support, our conservation mission will not succeed.

Below is a link to find more details and objectives for the Standards of Excellence:

<https://www.fws.gov/urban/soe.php>

STANDARD 1: Know and Relate to the Community

STANDARD 2: Connect Urban People with Nature via Stepping Stones of Engagement

STANDARD 3: Build Partnerships

STANDARD 4: Be a Community Asset

STANDARD 5: Ensure Adequate Long-Term Resources

STANDARD 6: Provide Equitable Access

STANDARD 7: Ensure Visitors Feel Safe and Welcome

STANDARD 8: Model Sustainability



Students learning the basics of birding -- a great way to help people deepen their connection to nature. USFWS

*“If a child is to keep alive his/her
inborn sense of wonder, s/he needs
the companionship of at least one
adult who can share it, rediscovering
with him/her the joy, excitement,
and mystery of the world we live in.”*

--Rachel Carson

