Hartford's Birds

- Park Habitat Revitalization and Conservation



Municipal Conservation Reference

City of Hartford

Department of Public Works with Park Watershed and Trinity College

Urban Conservation Treaty for Migratory Birds US Fish & Wildlife Service project 50154 - G012



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Regional and National Resources

Cornell Lab of Ornithology International Migratory Bird Day Connecticut Department of Energy & Environmental Protection Silvio O. Conte National Wildlife Refuge – Watershed on Wheels (WoW)



Municipal Conservation Reference

Recommendations Drawn From

Hartford's Birds - Park Habitat Revitalization and Conservation

Urban Conservation Treaty for Migratory Birds

Contents

pag	es:	
		Preface
	5	Project Description
	7	Summary Recommendations
	9	Municipal Resolution – First Recommendation
	11	Expand Conservation Learning – Second Recommendation
		Share Information Generously
		Utilize Available Programs for Hartford Schools
		Establish a Nature Center
	13-16	Plant Palette
	17	Strengthen Environmental Health – Third Recommendation
		Conservation Management and Maintenance Practices
12		Measureable Conservation Planning Goals
		Innovative Conservation Policies and Funding Strategies
	20	Night Light Pollution
	21	Minimize Hazardous Conditions - Fourth Recommendation
		Cats
		Collisions
		Rodenticides (poison)
	22	Recommended Reading
	23	Organizational Resources
	24-26	Seasonal Advisories for Migratory Birds and Wildlife
	27	Annual Events



Preface

City of Hartford parks are extraordinary places where there is public access to picturesque and wild landscapes within a short walk from high-density urban homes and businesses. Historic 19th century city parks also include well-established meadows and mature forests that provide essential habitat to migratory and resident birds. Intriguing to watch, birds are important indicators of healthy local and regional ecosystems that benefit city residents. The integral functionality of birds to environmental health is increasingly significant to municipal and regional planners who must address the unprecedented challenges of climate change. Essential links in the food web, birds pollinate plants, disperse seeds and control insect pest populations. Thus, the comprehensive characteristics of successful bird habitat are a useful conservation guide.

Because of the internet and the proliferation of smart phones, learning about birds is increasingly easy. This *Municipal Conservation Reference* outlines information drawn from field projects and research conducted through the Urban Conservation Treaty for Migratory Birds. This program of the United States Fish and Wildlife Agency, which began in 1999, expanded during the Obama administration. Support for urban environmental initiatives was based on interests expressed in extensive public listening sessions conducted for the purpose of developing a 21st century conservation and recreational agenda. Significant advances in urban environmental stewardship have since been achieved in cities across America with support from federal programs.

As we prepare for printing, 2016 exceeded 2015 as hottest year in recorded history; carbon in the atmosphere passed 400 parts per million; and Arctic sea ice is melting at unprecedented rates. These ominous indications of rapidly accelerating climate change overshadow the mass extinction crisis underway, which is primarily due to habitat loss caused by human activities. Sprawling development, invasive species, and climate change disruptions are eliminating essential wildlife and bird habitat throughout all ecosystems, which cannot be easily replicated.

The 19th bequests of private estate properties to the City of Hartford for public parks, which coincided with legislation to protect migratory birds, eventually spawned significant municipal, state, national and international park systems. Citizen initiative continues to be instrumental in the evolution of environmental public policies, such as land conservation and banning certain toxic chemicals, which saved the Bald Eagle and numerous migratory songbirds from extinction. Because parkland use and management policies are locally determined, city residents, staff, elected officials and area non-profits now have a critical opportunity to address 21st century challenges. As in the past, we can successfully address current environmental problems by adjusting individual, neighborhood and government planning strategies, management policies and maintenance practices. Ideally this *Municipal Conservation Reference* will help Hartford strengthen 21st century urban design strategies that further habitat conservation and revitalize natural resources essential to healthy quality of life for current and future citizens. For that to happen, the contents ought to be reviewed, debated, corrected, implemented, updated and shared generously.



https://www.fws.gov/birds/management/flyways.php

The four major North American flyways, including the Atlantic flyway, extend into South America. Millions of birds that migrate seasonally to breed and nest are seeking specific ecosystem habitat characteristics, such as mature forests, grasslands or coastal areas. The flyways, which stretch south from the Canadian boreal forests, is a pathway for birds that seasonally migrate north during the spring to breed and nest, and in autumn fly to south to winter in warmer climates.

The Connecticut River, which flows from Canada to the Long Island Sound, is a distinct migratory path within the Atlantic Flyway. Hundreds of thousands of birds that fly thousands of miles during spring and fall migration depend upon available habitat, which includes food, shelter and clean water, to ensure safe passage to annual nesting and wintering areas. The perils of migration include: exhaustion, hunger, disorientation caused by artificial lighting, fireworks or severe storms, being eaten by a cat or predators, and slamming into a window of building, car or airplane. Bird habitat within our city parks, open spaces and backyard gardens can be enhanced through conservation, cultivation and maintenance of diverse ecosystems, which will enrich quality of life for city residents.

Hartford's Birds - Park Habitat Revitalization and Conservation

Original Project Description

The City of Hartford, Connecticut, situated along the Lower Connecticut River at the confluence of the Park River watershed, includes historic parklands that serve as important urban bird havens. Heritage trees and forests of the largest city parks: Riverside, Keney, Pope, Goodwin, Colt and Elizabeth, have been conserved for over a century. Hartford parks offer residents and visitors unique glimpses of migration and nesting because migratory birds return to established habitat, especially mature forests within the city's heritage parks as well as flood plains along the North and South Branches of the Park River and the Lower Connecticut River

In June 2011, US Fish & Wildlife Service awarded City of Hartford funding through the Urban Conservation Treaty for Migratory Birds program, which supports civic partnerships that conserve migratory birds. This program, known as the Urban Bird Treaty, has advanced public education, hazard reductions, citizen science, conservation actions, and habitat improvements. Working in collaboration with Trinity College Biologist, Dr. Joan Morrison and Mary Rickel Pelletier, Park Watershed, Founding Director, the project: 'Hartford's Birds – Park Habitat Revitalization and Conservation' had three key goals:

- Enhance migratory bird habitat in City of Hartford parks
- Cultivate public awareness and citizen science
- Reduce urban migratory bird hazards

Habitat enhancement projects were implemented around two city park ponds with community groups, Friends of Keney Park and Friends of Pope Park. Bird species were counted during migration to study neotropical bird populations. To educate the community about vegetation that provides good habitat for migratory birds traveling through Hartford, a 'Plant Palette' brochure (*included pp 13-16*) and poster was developed and distributed to libraries, schools, garden clubs and parks. Urban building conditions hazardous to birds, such as strikes against clear or reflective windows, were studied. Recommendations regarding hazards such as night light pollution, predation by domestic cats, and poisoning by rodenticides were outlined along with identification of favorable habitat conditions to further strengthen existing bird habitat.

Successful 21st century redevelopment of high-density urban-suburban communities depends upon innovative revitalization of accessible natural resources. If habitat loss is recognized as an urgent crisis, planners focused on transit-oriented development projects might also strive for imaginative on-site green infrastructure landscape features. When citizens, community leaders, elected officials municipal personnel, and government regulators neglect environmental problems, we overlook opportunities to trace the source of pollution, which would inform cost effective management and design solutions. Degradation of nature is easy to overlook because in the past, parking lots seemed more important to the economy than meadow ecosystems. This *Municipal Conservation Reference* outlines **Summary Recommendations** towards 21st century best practices that can strengthen ecosystem integrity while cultivating healthy urban neighborhoods for all Hartford residents.



Design drawings of the Pope Park entrance planting plan (below) and Keney Park pond (above) by the Olmsted firm are from the archival collections held at the Frederick Law Olmsted National Historic Site in Brookline, Massachusetts. New drawings are needed to clarify locations of valuable habitat, areas of invasive species, detail opportunities to reduce mowing and revitalize ecosystem integrity of degraded landscapes.



Strengthen Natural Resources Summary Recommendations

- 1) Adopt a Municipal Resolution to formally recognize the environmental and cultural significance of migratory birds. In collaboration with stakeholders from city neighborhoods, area non-profits, as well as state and federal government agencies, refine draft resolution language with respect to City of Hartford conservation opportunities, interests and long term goals.
- 2) **Expand Conservation Learning Opportunities** for all ages through public programs that highlight citizen science and stewardship activities, as well as the benefits of healthy local natural resources to neighborhood quality of life and community resiliency.
 - Share Information Generously through Hartford Public Library and park friends groups.
 - Utilize Available Natural Resource Learning Programs for Hartford Schools.
 - Establish an Urban Nature Center.
- 3) Strengthen Environmental Health to benefit all current and future city residents.

a) Further Develop Conservation Maintenance and Management Practices

- Increase low-mow park management to reduce energy consumption and air pollution and to increase meadow habitat diversity for the benefit of birds, butterflies and other pollinators.
- Replace invasive species with diverse native vegetation.
- Protect and enhance stream buffers using the City's existing authority to regulate development activities in and adjacent to wetlands and watercourses.
- Continue training City personnel in conservation best practices, such as managing habitats, composting, minimizing litter and ending illegal dumping, so as to benefit our natural resources.

b) Develop Measurable Conservation Planning Goals

- Prepare a conservation plan to protect park landscapes and stream corridors from development.
- Plan a greenway system that distinguishes wildlife habitat from recreational activity areas.
- Prepare a regional plan to revitalize ecosystem integrity, especially along stream corridors.
- Prepare site specific planting plans with low maintenance native diversity for busy park places.

c) Further Develop Innovative Conservation Policies and Funding Strategies

- Facilitate collaboration among municipal commissions, state government agencies and non-profits in order to strengthen 21st century integrative environmental planning.
- Adopt metrics for habitat conservation, such as sustainability rating system.
- Find funding incentives that support habitat conservation and maintenance.
- Reduce night light pollution.
- 4) Minimize Hazardous Conditions that negatively impact migratory birds, butterflies and wildlife. Through research and innovative design, environmental health hazards can be reduced and even eliminated in order to render high-density urban areas safe for birds and people. Healthy urban environments increase quality of life and prosperity.

DRAFT* Resolution

The Parties Recognize

- WHEREAS, City of Hartford is within the Atlantic Flyway Lower Connecticut River area through which hundreds of thousands of birds migrate, and all birds passing through the Atlantic Flyway are protected by the United States Migratory Bird Treaty Act of 1916, which passed as federal law in 1918;
- WHEREAS, City of Hartford municipal territory is within the Atlantic Flyway and includes parts of the Connecticut River, as well as the North and South Branches of the Park River regional watershed.
- WHEREAS, for over a century, City of Hartford forests, meadows, wetlands, and floodplain landscapes have provided essential habitat (food, shelter, and clean water) for migratory birds and wildlife that enrich our quality of life and experiences;
- WHEREAS, birds are excellent indicators of healthy local ecosystems and irreplaceable natural regional environments of the Earth that benefit citizens of Hartford;
- WHEREAS, birds contribute aesthetically, culturally, scientifically, and educationally to City of Hartford values;
- WHEREAS, birds represent, for the vast majority of people, the sole everyday contact with wildlife. Birds connect all of us to the environment;
- WHEREAS, citizens established a Hartford Bird Study Club in 1909 (now the Hartford Audubon Society, to participate in migratory bird research and conservation initiatives;
- WHEREAS, migratory birds, like people, cross ecosystems and government boundaries, thus protecting them must be a cooperative effort among international cities, states, citizens, educational institutions, environmental organizations, businesses and federal agencies;
- WHEREAS, migratory birds face serious challenges. Many species are in decline from a variety of causes, especially habitat loss and degradation, the introduction of invasive plants and animals (including outdoor and feral cats), pollutants, such as pesticides, and collisions with buildings, cars, and energy infrastructure (transmission lines, stacks, and wind mills).

Now therefore be it **RESOLVED** that City of Hartford, its Mayor and Court of Common Council acknowledge the importance of local and regional partnerships in working to enhance habitat and migratory bird conservation in the City and throughout the greater Hartford metropolitan region for the benefit of Hartford's and the region's residents, businesses and economy so as to adopt the attached *Recommendations to Strengthen Hartford Habitat & Natural Resources*, and directs its various City agencies to begin, in 2017, implementation of management practices that reduce energy consumption, such as excessive mowing and night lighting, and the continued training of City personnel in 21st century maintenance techniques that renew and revitalize the City's valuable natural resources.

* Draft Resolution language was adapted from versions prepared by City of Portland, OR and New Haven, CT.

First Recommendation Municipal Resolution

Urban Bird Treaty Cities have adopted municipal resolutions that recognize the value of local migratory bird conservation measures and comprehensive ecosystem health across political boundaries. Resolution language from Portland, Oregon and New Haven has been modified with respect to Hartford's conditions and goals. An area non-profit or City resident can coordinate development of the example draft resolution (*attached*) in conversation with City staff and Court of Common Council members. The coordinator should also request input from the City Parks & Recreation Advisory Commission, and A Commission on The Environment (ACOTE); and submit the draft resolution to Mayor and Corporation Council for review. Representatives of the United States Fish and Wildlife Agency, the Silvio O. Conte National Fish & Wildlife Refuge and the Superintendent of the Coltsville National Historic Park should be notified of this process.

Once the language is refined, circulate the resolution to a broad and diverse list of likely signatory partners, such as Urban Bird Treaty partners: Park Watershed and the Environmental Science Program at Trinity College, Audubon Connecticut; Keney Park Sustainability Project; Friends of Keney Park; Community Solutions; Friends of Pope Park; and Pope Hartford Designated Fund.

Invite all Parks *friends* groups as signatory partners, Neighborhood Redevelopment Zone (NRZ) and other interested non-profit organizations, such as Riverfront Recapture; Elizabeth Park Conservancy; Bushnell Park Foundation; Friends of Goodwin Park; Friends of Colt Park; Handson-Hartford; Knox, and The Garden Club of Hartford.

Also, invite educational institutions especially schools that participated in Urban Bird Treaty volunteer planting and bird banding: UConn School of Plant Science and Landscape Architecture; Mary Hooker Environmental Magnet School; CREC Montessori Magnet School; Two Rivers Magnet Middle School; UConn Natural Resources Academy; and the College of Agriculture, Health and Natural Resources Department of Plant Science and Landscape Architecture.

In addition, invite regional environmental organizations, such as Friends of Silvio O. Conte National Fish & Wildlife Refuge; Connecticut Dept. of Energy & Environmental Protection; The Hartford Audubon Society; The Audubon Society, Connecticut Forest & Park Association; Connecticut River Watershed Council; the Northeast Regional Chapter of the International Dark-Sky Association, and the Connecticut Chapter of the American Society of Landscape Architects.

Once the list of signatory partners is confirmed, work with Court of Common Council to arrange passage. Note that passage of the resolution can be celebrated through public engagement activities during spring migration, and highlight the Migratory Bird Treaty Act centennial.

Municipal Conservation Reference – for Urban Migratory Birds



Learning from a Century of Bird Conservation –

Most of the Urban Bird Treaty research and field project work focused on site specific habitat conditions in city parks, especially around Keney and Pope Park ponds. However, Hartford residents have observed and studied birds for over a century. There are numerous opportunities for birds to satisfy the interests of historians, archivists, lawyers, visual artists, composers, and writers. Hartford Audubon Society records, which date to the 1909 establishment of the Hartford Bird Study Club, are with the organization's ornithology books at the <u>Wood Memorial Library</u> in South Windsor. Once a week, the <u>Watkinson Library at Trinity College</u>, which also contains an impressive collection of ornithology books and journals, turns a page to display one of the world's rarest books: *The Birds of America*, by John James Audubon. Donated to the library in 1900, the book has 435 water colored engravings bound in four large (2' x 4') volumes that were published between 1836-1839. Describing the American Crow (*plate 156*) Audubon emphasized the threat of excessive sport hunting. Indiscriminate killing of game birds was not curtailed until the Migratory Bird Treaty Act of 1916. In 1917, when writing, <u>Thirteen Ways of Looking at a Blackbird</u> could Hartford poet Wallace Stevens have been looking at crows as he walked along Asylum Avenue?

The <u>centennial of the Migratory Bird Treaty Act</u>, is an opportunity to extend inter-disciplinary research and project initiatives. This treaty was one of the first environmental laws between two nations. The Act, signed as an agreement with Great Britain (for Canada) on Aug. 16, 1916, was approved as U.S. federal law in 1918. Subsequent international agreements that protect migratory birds followed with Mexico (1936), Japan (1972) and Russia (1976). The centennial of the 1916 Migratory Bird Treaty is the beginning of series of significant advances in environmental protection.

Now is the time to look forward and establish quality of life goals for the next 100 years. What conservation measures are needed to protect migratory bird populations for another century through to 2116? Given climate change, irregular temperatures storms and drought are projected to intensify. How can Hartford parks and riparian corridors be managed to sustain abundant habitat and regenerative natural resources for future generations?

Second Summary Recommendation Expand Conservation Learning Opportunities

Expand Conservation Learning Opportunities for all ages through public programs that highlight citizen science and stewardship activities, as well as the benefits of healthy natural resources to neighborhood quality of life and community resiliency.

Information about birds now available online is extensive and impressive. Environmental organizations are welcoming participation from citizens who can collect and share site specific data about bird observations using smart phones. Simultaneously, federal and state government programs as well as national environmental non-profits recognize the significance of urban ecosystems within the web of regional and global conservation. Educational events held in Keney and Pope Parks for the City of Hartford Urban Bird Treaty project revealed considerable interest in urban birds from families and individuals of all ages. Because of online technology birding is a rapidly growing activity for teens and adults. Inclusive local citizen science educational programs can be advanced as follows:

Share Information Generously through Hartford Public Library and park friends groups. City of Hartford can distribute print and digital version of this *Municipal Conservation Reference* to Hartford Public Library, park friends groups, NRZs, the Dept. of Families, Children, Youth, and Recreation, and city commissions, to be shared with their networks. Ideally, educational reference lists and the Seasonal Advisories for Birds and Wildlife (pp 24-26) will be copied, edited as needed, and distributed annually. Hartford Public Library could add a conservation web page as an online reference. The Library could also partner with City environmental commissions and Hartford Audubon Society to host environmental education programs that focus on local natural resources.

Utilize Available Programs for Hartford Schools. Curriculum and other materials developed for K-12 students are widely available from organizations such as the Cornell Laboratory of Ornithology. Schools can use these materials to teach not only about birds but about ecological concepts in general. Through programs such as 'Project Feeder Watch', 'Celebrate Urban Birds,' and 'YardMap,' students learn methods and value of scientific data collection and observation and that their individual contributions are meaningful. U.S. Fish & Wildlife Service offers a Schoolyard Habitat Program that supports environmental education at K-12 schools. Working with partners, New Haven Public Schools have established ten schoolyard habitats since 2013. A designated coordinator capable of organizing environmental field activities and schoolyard habitat projects for the Hartford Public School system could provide support for busy classroom teachers.

Establish a Nature Center. A gathering place can support field learning activities that advance citizen awareness. Hundreds of visitors utilize the <u>Audubon Center in Greenwich</u>, which opened in 1943, to access surrounding nature sanctuaries. The Keney Park Pond House has a room with outdoor equipment, conservation books, posters and miscellaneous displays. Albeit small, this unstaffed collection is useful, especially for field activities such as volunteer projects and adult job training. Admittedly, budget problems thwart the support needed to establish a robust urban nature center as an affordable, and accessible community resource for city residents. Nevertheless, with planning, designated staff, funding and in-kind support, a Hartford Nature Center could become a long-term asset for Keney Park, Coltsville, or a location along the North Branch.

Municipal Conservation Reference - for Urban Migratory Birds

Educational References:

General Learning and On-Line Credit Courses:

<u>Audubon</u> – The National Audubon Society website offers a spectrum of information, that includes a detailed Bird Guide, conservation news, information about specific species and habitats, travel updates, and photography awards. Look for a digital introduction to the 19th text and watercolors of John J. Audubon's *Bird's of America*.

<u>All About Birds</u> – the Cornell Lab of Ornithology website is another extensive online reference that includes a detailed Bird Guide, birding tips and fact sheets, as well as numerous free K-12 lesson kits, <u>www.birds.cornell.edu</u> and interactive online maps, data, and videos. Citizen Science activities, such as <u>Project FeederWatch</u> offers tips on appropriate types and placement of feeders, food and common bird feeding preferences, as well as access to real-time data. Outstanding academic online courses are available online through the <u>Bird Academy</u>.

International Migratory Bird Day (IMBD) – Updated annually, the IMBD website offers a variety of posters, flyers, banners, games, fact sheets and learning activities, as well as template educational presentations, most of which are free, see <u>http://resources.migratorybirdday.org/</u>

Sharon Audubon Center – Offers natural science structured to address Connecticut Science Standards for grades K-6. Programs can either be held at the 1,200-acre sanctuary, conducted in a classroom or other location as needed. See <u>http://sharon.audubon.org/school-programs</u>

U.S. Fish & Wildlife Service – <u>Schoolyard Habitat Program</u> includes a 132 page <u>Project Guide</u> that provides guidance with planning and implementation of schoolyard habitat and outdoor classrooms.

Online Tools and **Mobile Apps:**

Merlin Bird ID – This free smart phone application offers quick, easy bird identification based on four simple multiple choice questions. Bird identification includes pictures of male, female, and juvenile birds as well as species habitat range maps and audio recordings of bird songs. Download this free app from the Cornell Laboratory of Ornithology for iPhones or Androids: http://merlin.allaboutbirds.org/

eBird – This free global tool is a fast method to record bird sightings and manage bird lists. You may choose to share your observations with the eBird community, and in so doing contribute critical data to scientists. Monthly challenges offer prizes to birders, see <u>http://ebird.org</u>

Audubon – Offers a free mobile field bird guide, see <u>http://www.audubon.org/apps</u>

For 2015 review other online tools, including apps that train you to learn bird calls and songs, see http://www.audubon.org/news/the-best-birding-apps-and-field-guides

for more information see www.parkwatershed.org



The illustration depicts urban-adaptive migratory birds in context with seasonal food sources and birds that live in the Hartford metropolitan area throughout the year.

Migratory Birds: 1) Carolina Wren; 2) Palm Warbler; 3) Eastern Phoebe; 4) American Redstart; 5) Baltimore Oriole; 6) Red-winged Blackbird; 7) Tree Swallow; 8) Common Yellowthroat; 9) Eastern Bluebird; 10) Red-eyed Vireo;

Year-round Residents: 11) White-breasted Nuthatch; 12) Song Sparrow; 13) Black-capped Chickadee; 14) Red-tailed Hawk; 15) Northern Cardinal; 16) Downy Woodpecker; 17) Tufted Titmouse; 18) American Goldfinch Seasonal Food Sources: 19) Clean Water; 20) Caterpillars 21) Larvae; 22) Catkins; 23) Mayfly; 24) Grasshoppers; 25) Nectar; 26) Spiders; 27) Mosquitoes; 28) Dragonflies; 29) Wildflower Seeds; 30) Sumac; 31) Winterberry; 32) Insect Eggs and Larvae

Aster, native varieties, Symphyotrichum novae-angliae Bee Balm, Monarda didyma and M. fistulosa Black-eyed Susan, Rudbeckia hirta and R. laciniata Cardinal Flower, Lobelia cardinalis Cattail, Typha angustifolia Coneflower, Echinacea pallida Joe-pye, Eupatorium Indian Grass, Sorghastrum nutans Little Bluestem, Schizachyrium scoparium Lupine, Lupinus perennis Milkweed, Asclepias exaltata and A. tuberosa Sunflower, Helianthus divaricatus and H. helianthoides Switch Grass, Panicum virgatum

> Graphic Designer: Tanner Burgdorf Illustrator: Christopher Vest Project Director: Mary Rickel Pelletier Biologist: Dr. Joan Morrison USFWS Project # 50154-1-G012

GREATER HARTFORD PLANT PALETTE to cultivate urban habitat for MIGRATORY BIRDS



City of Hartford parks and open spaces are urban bird havens along the Atlantic flyway. The flyway, which follows the Connecticut River watershed into Canada, is an important migratory pathway for birds that breed in the Northeast and winter in the tropics. The hundreds of thousands of birds that fly thousands of miles during spring and fall migration depend upon available food, shelter, and clean water to ensure safe passage to annual nesting areas. Bird habitat within city parks, open spaces and backyard gardens can be enhanced through cultivation and maintenance of diverse plant ecosystems.

City of Hartford, Trinity College and Park Watershed, developed this Plant Palette with support from the 'Urban Conservation Treaty for Migratory Birds' which is a program of the United States Fish & Wildlife Service.







NATIVE PLANT LAYERS

FOREST CANOPY and SHADE TREES

heights of 20 - 60+ feet

nourishment. Migratory birds, such as Baltimore Oriole, American Redstart, Red Eyed Vireo and various warblers build spring nests in the high canopy of urban forests. Seasonal seasonal migration and nesting synchronizes with insect and plant life cycles. Clusters of native tree catkins are habitat to moths, caterpillars, katydids, and other insects that provide dietary protein during bird nesting. Cavities within large P old trees offer nesting sites for numerous birds, including wrens, woodpeckers, bluebirds, owls, chickadees a flickers. Forests in city parks and streams corridors provide numerous human health benefits, are also wrens, woodpeckers, bluebirds, owls, chickadees and flickers. Forests in city parks and streams corridors, which Deprovide numerous huma essential habitat for mig Hartford metropolitan ar Duble UNDERSTORY TRI heights of 10 - 20 feet Buds of understory to spring serve as a for essential habitat for migratory birds seen throughout the Hartford metropolitan area.

UNDERSTORY TREES

Buds of understory trees that bloom early in the spring serve as a food source to insects and early P migratory birds, such as the Palm Warbler. Migratory flycatchers, such as the Eastern Phoebe, nest and shelter feed within the understory.

SHRUBS.

ter heights of 4 - 10 feet

Shrubs provide berries for birds from early June through late winter. Although insects are a primary food source during nesting, berries offer energy during migration. Bitter berries, such as the winter berries and juniper berries, provide critical nourishment during periods of ≥ freezing temperatures for migratory birds that travel from northern areas to winter within the lower Connecticut River watershed. avail

MEADOW WILDFLOWERS and GRASSES

heights of 1 - 5 feet

depend upon

birds

Nectar from flowers attracts insects and hummingbirds. Wildflower and grassland meadows offer seeds and grains in late summer and during autumn migration for birds such as the American Goldfinch. Birds that nest in meadows, such as the Eastern Meadowlark are endangered due to mowing pratices that cut apart nesting sites and reduce the availability of seeds and insects. Seeds remain a critical food source for birds during winter months when insects are dormant and the ground is covered in snow.

resident **GROUNDCOVERS, FERNS and VINES** and

heights of 1 - 3 feet

Insects, worms and grubs in the leaf litter are food for migrant and resident birds, especia ephemeral forest floor groundcove bleaves grow into a dense canopy. migrant and resident birds, especially in the spring when ephemeral forest floor groundcover blooms before tree

American Beech, Fagus grandifolia American Elm, Ulmus americana 'Valley Forge' American Sycamore, Platanus occidentalis Birch, Betula, 16 natives, esp. river birch, Betula nigra Black Cherry, Prunus serotina, Pin Cherry, P. pensylvanica Eastern redcedar, Juniperus virginiana Hickory, Carya, 9 natives, esp. Shagbark, C. ovata Maple, Acer, natives, esp. sugar

and red maple, A. saccharum and A. rubrum Oak, Quercus, 29 natives, esp. White Oak, Q. alba and Swamp White Oak, Q. bicolor Pine, Pinus, esp. White Pine, Pinus strobus Sassafras, Sassafras albidum Willow, Salix, esp. black willow, S. nigra, S. amygdaloides

Chokecherry, Prunus virginiana Eastern Redbud, Cercis canadensis Flowering Dogwood, Cornus florida Serviceberry, Amelanchier canadensis Willow, esp. Pussy Willow, Salix discolor

American Holly, Ilex opaca Bayberry, Myrica pensylvanica (dry soils) M. gale (wet) Button Bush, Cephalanthus occidentalis Chokeberry, black and red. Aronia melanocarpa and A. arbutifolia

Dogwood, esp. Gray and Silky, Cornus racemosa/paniculata, and C. amomum Elderberry, Sambucus canadensis Highbush Blueberry, Vaccinium corymbosum Inkberry, llex glabra Juniper, Juniperus communis Spicebush, Lindera benzoin Summersweet Clethra, Clethra alnifolia Viburnum, esp. Arrowwood and Cranberrybush Viburnum dentatum and V. trilobum Winterberry, Ilex verticillata

Bloodroot, Sanguinaria canadensis Dutchman's Pipe, Aristolochia durior Marginal Wood Fern, Dryopteris marginalis Mayapple, Podophyllum peltatum Royal Fern, Osmunda regalis

Third Summary Recommendation Strengthen Environmental Health

a) Further Develop Conservation Management and Maintenance Practices:

- Increase low-mow park management to reduce energy consumption and air pollution and to increase meadow habitat diversity for the benefit of birds, butterflies and other pollinators.
- Replace invasive species with diverse native vegetation.
- Protect and enhance stream buffers using the City's existing authority to regulate development activities in and adjacent to wetlands and watercourses.
- Continue training City personnel in conservation best practices, such as managing habitats, composting, minimizing litter and ending illegal dumping, so as to benefit our natural resources.

Further development of the City's conservation management and maintenance practices will save money and improve ecosystem vitality that attracts people into park landscapes. Minimizing mowing in select forest edge and meadow landscapes is a cost effective management strategy that reduces energy consumption and air pollution while also increasing meadow habitat diversity. Simply allowing native wildflowers and grasses to regenerate naturally will support birds, butterflies and other pollinators, which are threatened by habitat loss. Habitat loss includes landscapes eliminated for development as well as landscapes degraded by mowing, erosion, pollution and invasive species.

Invasive plants in city parks are an insidious and growing problem. Native vegetation, especially wildflowers, shrubs and understory trees are surprisingly scarce. While original Olmsted park plans proposed elaborate planting schemes at park entrances, acres of overgrazed 19th century farmland naturalized into the park landscapes we see today. Mowing, which suppresses native plant diversity, has been the primary park maintenance policy for decades. Ecosystem diversity can be augmented by removing invasive plants, cultivating indigenous vegetation and planting additional natives. This work can be scheduled as small or large projects with volunteers or skilled staff.

Migratory bird habitat can serve as a useful landscape design criteria. During migration and nesting seasons, birds feed on insects, which live on particular native plants that thrive in areas with the appropriate water and soil conditions. Symbiotic relationships have evolved between native plants that host specific types of insects, which are available to birds at the appropriate times of the year, whether it be for migration, reproduction or overwintering. While these relationships may seem tangential to city park management, habitat ecosystems provide science-based landscaping goals that have exponential environmental health benefits, such as improved water quality, quality, reduced heat loading, soil stabilization and fertility, wind and noise abatement, increased stormwater infiltration, improved aesthetics, and reduced atmospheric carbon loading.

Ecosystem revitalization is a distinct departure from 20th century maintenance routines. Municipalities making this transition are learning through field work. Completed park improvement projects, such as Prospect Park in Brooklyn, and Philadelphia parks offer good examples. City of Hartford personnel should be included in the transition to 21st century landscaping practices. Continued city staff training is needed. Training should also be extended to park friends groups and non-profits that engage in landscaping projects. To learn from other cities and to see how conservation best practices have been implemented, field trips would be especially instructive.

Municipal Conservation Reference – for Urban Migratory Birds

Strengthen Environmental Health _ continued

b) Develop Measurable Conservation Planning Goals

- Prepare a conservation plan to protect park landscapes and stream corridors from development.
- Plan a greenway system that distinguishes wildlife habitat from recreational activity areas.
- Prepare a regional plan to revitalize ecosystem integrity, especially along stream corridors.
- Prepare site specific planting plans with low maintenance native diversity for busy park areas.

The city should begin to secure funding and gather information for a conservation plan, which will be needed in 2020 for the ten year Municipal Plan of Conservation and Development. US Fish & Wildlife Service staff as well as area biologists ought to be included to identify critical habitat areas with respect to regional migration resting and nesting patterns. Area college and university students could assist with field research and mapping. Developing a detailed, site specific conservation plan will inform best practices and long term goals that can begin to address climate change challenges.

Conversion of Hartford park landscapes to recreational fields is a problem that threatens Hartford's picturesque park meadows and forests. During the past decade, tens of millions of dollars have been spent on athletic fields upgrades inclined costly installation of synthetic "turf" and field lighting. Meanwhile few, if any, city funds were allocated for comprehensive ecosystem restoration projects.

Clearly, athletic fields and recreational facilities of all types are needed throughout the city. City residents want well-managed athletic fields. The 2014 Capital City Parks Guide, which included extensive citizen input, focused recommendations on improving existing recreational facilities. However, there are also reasons to develop adult athletic facilities off parkland. Privately owned facilities can include indoor winter play areas, such as the Farmington Sports Arena, which rents fields to teams. A century ago, when parks were originally designed, sporting was leisurely play in open meadows. Today, sports leagues are businesses worth trillions of dollars worldwide.

Sporting facilities integrated into Hartford neighborhoods can grow the local economy. Sports draw crowds that need refreshments, bathrooms, equipment, parking and field lighting. Planning all sports facilities on parkland minimizes opportunities for profitable adjacencies, such as a bar overlooking an athletic field. Vacant land in commercial zones can be developed as supplemental sports facilities, and relieve excess usage of park playing fields. New neighborhood sports centers can be planned within a network of greenway features such as farmers markets, compost exchanges, bike-share stations, playscapes, sporting goods, and community gardens. New green business districts can provide recreational pathways through the city to public park landscapes and stream corridors.

A municipal greenway plan is needed to distinguish relationships between recreational paths in densely developed city fabric and protected ecosystems that provide bird and wildlife habitat within city limits. Integrative planning goals that respect the value and science of healthy natural environments is needed to detail sustainable, beneficial design relationships between recreational activities and nature in the city. Connectivity is more than bicycle lanes painted on busy streets. Ecosystem connectivity is fundamental to bird, fish, and wildlife migration, especially along stream corridors. Weaving a spectacular experience of nature into the city fabric provides a refreshing contrast to buildings and streetscapes, which can also increase real estate values.

Strengthen Environmental Health _ continued

The City can develop measureable conservation goals, as well as increase resiliency to 21st century climate change. This work can be accomplished in expansive landscapes and compact parks. The HighLine in New York City shows how imaginative preservation of an abandoned railroad can draw millions of international tourists, captivated by an abundance of wildflowers along a narrow pathway elevated above street traffic. Hartford's heritage park landscapes are unique natural resources, 19th century gems that need to be conserved, revitalized, and supplemented with new 21st greenways and recreational fields that expand the range of outdoor experiences through public-private partnerships.

Strengthen Environmental Health:

c) Further Develop Innovative Conservation Policies and Funding Strategies

- Facilitate collaboration among municipal commissions, state government agencies and non-profits in order to strengthen 21st century integrative environmental planning.
- Adopt metrics for habitat conservation, such as sustainability rating system.
- Find funding incentives that support habitat conservation and maintenance.
- Reduce night light pollution.

Further development of innovative conservation policies depends upon collaboration to successfully transition between costly, dated procedures. City commissions and non-profits can help by working together on a integrative conservation plan. Innovation often emerges from collaboration. At this time the City Tree Commission has developed a strong policy that includes tree replacement requirements. Yet there are not clear plans to enable regeneration of existing indigenous tree groves, diversification of the understory, protection of migratory bird habitat, or steps to mitigate the impacts of climate change, such as comprehensive green infrastructure goals. The City needs an integrative conservation plan that synthesizes a variety of different local environmental interests.

Currently there is no unified coordinating authority for regional environmental planning strategies, such as a green infrastructure plan or migratory bird forest and meadow grassland conservation plan, which is needed to strengthen ecosystem connectivity between neighborhood areas and the Lower Connecticut River watershed region. A regional transportation planning agency for 38 member municipalities, Capital Region Council of Governments (CRCOG) has a program on sustainability, and manages a Regional Planning Commission, which sometimes considers sustainability issues, but with no discernible focus on site-specific habitat conservation. The Connecticut State University in Willimantic are currently developing a municipal sustainability rating system. Ideally this new system will incorporate metrics for habitat conservation as an achievable climate change mitigation strategy.

Although people express concern about climate change, few recognize the urgent need to conserve landscapes and revitalize the web of life that can sustain aquatic and avian migratory species. City residents and planners often see landscapes and stream corridors as available land for new plastic playscapes, athletic fields, school buildings and recreational trails. Equitable investment in innovative conservation revitalization projects and educational programs would genuinely support resiliency.

Strengthen Environmental Health _ continued

A distinct regional conservation organization or commission could facilitate regional environmental planning as well as identify site specific project options based on scientific research, conservation best practices, and integrative design strategies. A regional conservation organization could assist adjacent municipalities with feasible upstream and downstream projects. For example, community concerns surrounding the recent (2015) South Branch Park River Flood Control System Maintenance Project exposed costly channel management practices along Trout Brook, Piper Brook and the South Branch Park River, which ought to be re-evaluated with respect to maintenance costs, municipal greenway planning goals, and property owner interests. Efforts to improve water quality, revitalize native vegetation and establish appropriate public access along the North Branch have been constrained by funding limitations and differences in planning priorities. Park Watershed, a 501c3 for the 78 square mile Park River regional watershed could facilitate municipal conservation efforts, including development of new sources of funding for local conservation maintenance and enhancement projects. However at this time, the organization has neither the capacity nor authority nor effective support from area municipal planners. Conservation planning that addresses climate change challenges, whether conducted by the city or a regional conservation non-profit, will also need to identify new sources of funding, as well as ways to leverage change within existing budgets.

Municipal personnel make choices that can alter local, regional and global environments. Daily product decisions, especially with respect to food, shape personal health and community quality of life. Large municipal purchases can render environmental products affordable. Offering organic and locally sourced products at public parks and schools can have far reaching public health and environmental benefits. Area students and interns can help research and select a product, such as bird-friendly coffee from family farms in South America that may benefit neotropical migrants flying through Hartford on their annual journey to nesting sites in Canada. Information on bird-friendly coffee is available from the <u>Smithsonian Migratory Bird Center</u>.

Night light pollution is another opportunity to advance municipal policy and environmental health, plus save tax dollars. Glare, light trespass and sky glow are conditions caused by excessive impacts of dated electric light infrastructure. Light pollution negatively disrupts natural circadian rhythms that regulate the sleep cycles of humans, and other organisms, including plants. Night light reduces sleep, which increases stress and compromises immune systems. Excess night light also interferes with hunting and migration of avian and aquatic species as well as nocturnal mammals and reptiles.

Exponential increases in high wattage night lighting has been based on safety concerns. However, research now reveals that glare reduces visible distances and can increase the vulnerability of persons within bright light hot spots. Increasingly cities are updating street light infrastructure to maximize energy conservation and minimize excess glare with wattage controls and light coloring. While the most significant cost benefits will come from the replacement of dated street lighting, city park lighting is a useful testing ground for new lighting equipment and design strategies. Pressure to light city parks, especially recreation center parking lots and athletic fields, need to be addressed with accurate information about the cost of negative impacts to neighborhood quality of life, the city budget, and the global climate. Fortunately, a dawn to dusk policy preserves night sky in most parks.

<u>Fourth Summary Recommendation</u> Minimize Hazardous Conditions

Minimize Urban Environmental Hazards that negatively impact migratory birds, bats, butterflies and wildlife also hurt people. Environmental health hazards can be reduced and even eliminated by advancing planning standards and maintenance strategies. Healthy urban-suburban environments that are safe for birds also increase quality of life and prosperity.

Cats – Research indicates that cats kill between 1.3 and 3.7 billion birds across the continental United States every year. The massive bird mortality caused by domestic cats and feral cat colonies has become a global crisis. Nesting birds sitting on eggs, hatchlings and juveniles learning to fly are especially vulnerable. The City must not tolerate feral cat colonies.

Bird Strikes – Collisions with clear and reflective windows kill billions of birds annually, especially migrants. Products that reduce or eliminate reflections can deter birds flying towards windows. For large windows, a material called Collidescape, <u>http://www.collidescape.org/</u> is a densely-perforated window film coating engineered to prevent bird strikes while providing both privacy and LEED certified energy credits and cost savings. A picture can be printed on the film to be seen from outside, as is commonly seen on city buses, but inside people can see out clearly. Various products that utilize reflective ultraviolet light can also warn birds flying towards windows. Birds have increased sensitivity to ultraviolet sunlight, which is not seen by humans. The ultraviolet light alters reflections that cause collisions. <u>A variety of decals shapes are available online</u>. Reducing night light pollution can also reduce bird collisions. Birds that migrate at night can be come disoriented by municipal night lighting, which may compromise navigational abilities. Simple steps, such as shielding lights, reducing wattage, and turning off lighting insides buildings at night, can conserve energy, save money, reduce carbon in the atmosphere, which is causing climate disruptions, preserve the wonder of night skies and benefit millions of migratory species.

Rodenticides are poisons that kill rodents such as rats, yet they also kill chipmunks, squirrels, beavers, and birds. Red-tailed Hawk pairs seeking new territories, establish nests in woodland areas such as along the North Branch Park River upstream of Farmington Avenue, east of Woodland Street. Over the years 5 different radio-tagged hawks died in this area, with visceral characteristics pointing to poisoning from having eaten mammals that had consumed rodenticide.

Birds of prey, like hawks, reduce rodent populations. After eating rodenticides, impaired rodents become obvious prey. Rodenticides can also be hazardous to pets, especially cats, small dogs, and children. Messy, uncontained food waste in garbage bins that serve large buildings and restaurants attract rodents. Elimination of uncontained food and garbage is the most effective rodent deterrent. Containing stinky garbage and reducing litter is an easy way to improve quality of life for all residents of Hartford. If you see a problem, report it to the city, <u>http://en.seeclickfix.com/hartford</u>.

Bird feeders increase opportunities to observe a variety of birds, yet feeders can also attract squirrels, mice and rats. Hang feeders that have a tray to minimize spillage. Remove and clean feeders seasonally, when native plants provide forage for birds and butterflies.

Municipal Conservation Reference – for Urban Migratory Birds

Recommended Reading:

Blair, Robert B., (May 1996) Land Use and Avian Species Diversity Along an Urban Gradient, Ecological Society of America, Ecological Applications, Vol. 6, No. 2: 506-519.

Lebbin, D. J., Parr, M. J., Fenwick, G. H., (2010) The American Bird Conservancy's Guide to Bird Conservation, Chicago, The University of Chicago Press.

Loss, S.R., Will T., and Marra, Peter P. (Jan 2013) The Impact of Free-Ranging Domestic Cats on Wildlife of the United States, Nature Communications, <u>www.nature.com/articles/ncomms2380</u>

Morrison, J.L., and Chapman W. C., (2005) Can Urban Parks Provide Habitat for Woodpeckers?, Northeast Naturalist 12(3):253-256

Snep, Robbert P. H., Kooijmans, Jip L., Kwak, R. G. M., Foppen, Ruud P.B., Parsons, H., Awasthy, M., Sierdsema, Henk L. K., Marzluff, J.M., Fernandez-Juricic, E., de Laet, J., van Heezik, Y. M., (2016) Urban Bird Conservation: Presenting Stakeholder-specific Arguments for the Development of Bird-friendly Cities. Urban Ecosystems 19: 1535-1550

Tallamy, Douglas W. (2009) Bringing Nature Home: How You Can Sustain Wildlife with Native Plants. Portland: Timber Press, Inc.

Also:

Accessories for Your Murderous Pet, Gearin, Conor, The Atlantic, Dec 9, 2015.

How Small Forests Can Help Save the Planet, Erica Goode, The New York Times, Sep 26, 2016.

Dark Skies, Jennifer Larue Huget, Connecticut Magazine, January 2014.

Connecticut State of the Birds Report – Connecticut Audubon Society prepares an annual summary of current bird research, bird population counts, and conservation challenges as well as strategies to address concerns. See <u>www.ctaudubon.org/state-of-the-birds/</u>

Portland, Oregon's Bird Agenda – A document that re-affirms Portland's commitment to its 2003 Urban Bird Treaty, and outlines new conservation goals with detailed recommendations for specific bird habitat.

US Fish & Wildlife Service Urban Bird Treaty - online summary of program goals and accomplishments.

Organizational References:

Connecticut Department of Energy and Environmental Protection: CT DEEP Switchboard: 860-424-3000 CT DEEP Wildlife – This website includes detailed information about area birds and wildlife. TIP - Turn In Poachers (to report a wildlife violation) toll free 800-842-HELP

Area Audubon Organizations:

Audubon Connecticut (National Audubon Society Connecticut Chapter) <u>http://ct.audubon.org</u> Hartford Audubon Society (established 1909 as Hartford Bird Study Club) <u>www.hartfordaudubon.org/</u> The Connecticut Audubon Society (established 1898) <u>www.ctaudubon.org</u>

Native Plant Supply and Research References:

North Central Conservation District – Spring Native Plant and Seedling Sale

order online in February and March

New England Wetland Plants, Inc. – wholesale native plant nursery, <u>http://newp.com</u> New England Wildflower Society, <u>www.newfs.org</u>

New England retail sale of native plants available at Nasami Farm in Whately, MA (seasonal hours)

Environmental Design Research and Resources:

Fatal Light Awareness Program (FLAP) – Extensive information for citizens and professionals is available online from this non-profit. Based in Toronto, Canada, FLAP is increasing awareness about bird deaths as well as numerous opportunities to mitigate mortality through new design.

Fredrick Law Olmsted National Historic Site *and* <u>Archives and Museum Collections</u> For more information, see <u>www.nps.gov/frla/olmstedarchives.htm</u>

International Dark Sky Association – Extensive technical resources on design standards to reduce night light pollution and increase safety and well-being.

<u>New England Wildflower Society</u> – information about area native plants, as well as an online native plant identification tool: https://gobotany.newenglandwild.org/

<u>**Park Watershed**</u> – Citizen stewardship for conservation and revitalization of natural resources within the 78 square mile Park River regional watershed, which stretches east of the Metacomet Ridge across West Hartford, Bloomfield as well as parts of Farmington, New Britain, and Newington through Hartford to the Connecticut River. Park River tributaries, such as Trout Brook, provide critical bird and wildlife habitat within the context of urban-suburban development.

Winter

December – February Seasonal Advisory for Migratory Birds and Wildlife

Migratory birds that spend summer months in Canada, like the Dark-eyed-Junco, over-winter in Hartford. Incoming winter migrants and resident birds often travel in mixed flocks searching for food, water and warmth in woodland yards, city parks and along riparian corridors, such as the North and South Branches of the Park River.

During winter, thousands of American Crows <u>roost in Hartford</u> where temperatures are often slightly warmer than in rural areas. Classified by the U.S. Fish and Wildlife Service as a migratory game bird subject to federal hunting guidelines, crows live in Connecticut year round, moving roost locations seasonally. In March, large winter flocks begin to disperse widely across the city and into rural area through the breeding season. Crow populations suffered due to excessive game hunting prior to the Migratory Bird Treaty Act of 1916 and sharply declined again in the early 2000s due to a virus. But because of the crow's adaptive and omnivorous characteristics, flocks are rebounding,

Occasionally rare winter migrants appear due to severe weather patterns that can disrupt regional availability of food. In <u>2013-2014</u>, Snowy Owls, which normally reside in the Arctic, migrated into the northeast, perhaps in search of food, such as rodents. Rare sightings of Snowy Owls in Hartford were noted along the Connecticut River.

Protected by the Migratory Bird Treaty Act of 1918, and the Bald and Golden Eagle Protection Act of 1940, Bald Eagles increasingly winter and nest along the Connecticut River. Federal regulations that ban certain toxic chemicals, most notably DDT, saved birds of prey, such as eagles, which had disappeared from Connecticut by 1950. Today, more than a hundred Bald Eagles winter in the state, including over a dozen nesting pairs. Several nests have been seen within Hartford city limits.

Urban and suburban environments can be modified to support winter birds in the following ways:

- **Bird Feeders** A feeder will increase opportunities to observe winter migrants and resident birds. Numerous online resources offer tips on appropriate types and placement of feeders, and on common bird feeding preferences. Project FeederWatch of the Cornell Laboratory of Ornithology, offers monthly data on birds counted in Connecticut, along with the average size of observed groups. See http://feederwatch.org/
- Winter Bird Habitat Birds will seek cover from freezing temperatures in evergreen tree boughs, shrub thickets, woodpiles, and tree cavities. Birds also eat bugs that feed on wood decay, insect larvae in tree bark, acorns, juniper and winter berries, as well as seeds on dried stalks of wildflower and grasses.
- Keep cats indoors. Even during winter months, domestic cats instinctually prey on birds. Cat allowed to prowl around outside will prey upon resident birds and winter migrants, such as Dark-eyed Juncos, that forage though ground cover vegetation and leaf litter.

Spring Migration, Breeding and Nesting Seasons migration March – May and breeding June -August Seasonal Advisory for Migratory Birds and Wildlife

The sights and sounds of migratory birds increase in the spring. Urban adaptive migratory birds seek food and nesting sites in city parks, backyards, and along stream corridors. City parks, school grounds and backyards can be modified to support urban birds in the following ways:

- Keep cats inside or within an enclosed cat patio. Domestic cats instinctually prey on birds. Research indicates that cats kill between 1.3 and 3.7 billion birds across the continental United States every year. The massive bird mortality caused by domestic cats and feral cat colonies has become a global crisis. Products such as broad shiny collars might warn birds to fly away, but nesting birds sitting on eggs and hatchlings will not escape. Please keep cats inside or within an enclosed cat patio. Outdoor cats risk contracting diseases, being hit by cars, engaged in fights, or being predated, thus there are multiple reasons to keep cats inside.
- Stay away from nests, chicks and fragile juvenile birds. If you find a nest with eggs, or baby birds leave the birds and nest alone, keep cats, dogs and curious children away. If juvenile birds are left alone, parent birds following nearby, will return to nurture their young.
- No pesticides or poisons. Native plants host native insects, eggs and larvae that mature during bird migration. Birds feed on insects, and so reduce yard and garden bugs without pesticides. Lawn pesticides also negatively impact the health of dogs and children.
- Native plant diversity provides the appropriate seasonal food resources for native birds. Mature forests and wetland meadows found in parks and along stream corridors are critical resting and nesting sites for migrants, like the Baltimore Orioles that nest in Keney Park.
- Clean Water A regularly cleaned fountain or shallow bird bath, especially during drought.

Other spring wildlife migration and nesting activities – Throughout the spring other wildlife, including amphibians and reptiles, emerge from hibernation to nest. In May, female turtles inch across landscapes fragmented by roads and buildings to return to native nesting sites. Turtles, especially snapping turtles, can be dangerous. To prevent collisions and traffic problems approach turtles from behind, lift the turtle by gripping the back of the shell. Do not lift by the tail, and do not overturn turtles. Move turtles across roadways **in the direction that the turtles was headed towards**. Most turtles in the Northeast Region are legally protected species of conservation concern and include some species with state or federal designations as endangered or threatened species. Turtles are **not** to be removed from their natural habitat, which could be a park. When in doubt, call Connecticut Dept. of Energy and Environmental Protection (860) 424-3000.

Bald Eagles and Great Blue Heron eat fish, amphibians, small reptiles and mammals as well as insects. Clean water, an essential characteristic of healthy ecosystems, supports aquatic invertebrates and fish, which in turn sustain fly-catching bird species, like swallows, and piscivorous birds such as herons and kingfishers. Increasing connectivity of native plant diversity between wetland pools and along streams will strengthen habitat for wildlife and birds that enliven parks.

Municipal Conservation Reference - for Urban Migratory Birds

Fall Migration

September - November Seasonal Advisory for Migratory Birds and Wildlife

Migratory bird populations also increase during autumn migration. Chimney Swifts, a declining migrant, travel more than 3,000 miles from South American to the eastern United States to nest and nurture their young. Unable to perch, swifts hang from rough walls of caves, cliffs and old chimneys. Often unused chimneys on school buildings provide seasonal habitat. Chimney repair or removal can disrupt roosting habitat. <u>CT DEEP tracks sightings</u>. During recent fall migrations, hundreds of Chimney Swifts have been seen diving into a chimney on Woodland Street. Could sculptural structures in city parks provide roosts for Chimney Swifts, Purple Martins, or Barns Swallows? City parks, school grounds and backyards can be modified to support birds in the following ways:

- Leave juvenile birds alone. Immature birds are learning how to forage and fly. Often parents are in the near vicinity, which is why fragile juvenile birds must not be moved. Young birds can also eat too much, and miscalculate flying distances thus are more susceptible to collisions with cars and reflective surfaces. Prevent collisions with translucent decals that reflect ultraviolet sunlight, warning birds flying towards windows.
- Keep cats inside or within an enclosed cat patio. Domestic cats instinctually prey on birds. Research indicates that cats kill between 1.3 and 3.7 billion birds across the continental United States every year. The massive bird mortality caused by domestic cats and invasive feral cat colonies has become a global crisis. Juvenile and recently fledged young birds are particularly vulnerable. Please keep cats inside.
- No pesticides Native plants host native insects and birds feed on insect eggs and larvae that mature during bird migration. Birds feed on insects, reducing bugs without pesticides. Lawn pesticides also negatively impact beneficial pollinators, aquatic life, dogs, and children.
- **Do Not Feed Geese or Ducks** Bread is not natural to any bird diet, and contributes to malnutrition, obesity and disease. Artificial feeding inhibits development of survival skills.
- Increase Native Plant Diversity Native ground covers, shrubs and understory trees can draw birds into residential yards and small city gardens. In large park landscapes, forest diversity can include aging, storm damaged trees. Birds like the Pileated woodpeckers in Elizabeth Park live in old tree cavities and feed on insects that live inside dead trees, snags. Grassland and wildflower meadows serve as habitat for other species. Allowing select landscapes to appear less manicured supports birds that enliven city parks.

Other autumn wildlife migration activities – Through autumn, juvenile birds and other wildlife roam to develop survival skills and establish new territory, especially within mature forest and along riparian corridors, such as the North and South Branches of the Park River, as well as tributaries such as Meadowbrook, Gully and Cemetery Brooks. Floodplain restoration projects would greatly increase habitat connectivity and native plant diversity. Floodplain restoration projects are also needed to re-evaluate and update critical flood control infrastructure, such as the Park River conduit.

Annual Events:

- Great Backyard Bird Count (GBBC) Anyone can participate from anywhere. Simply observe birds for 15 minutes, during the four-day event held annually in February and report sightings online at birdcount.org. This event welcomes beginner and experienced birders. Over 150,000 birders report sightings from over 130 countries around the globe. To learn more about the GBBC, see http://gbbc.birdcount.org/2016-gbbc-summary/
- Eagle Wildlife Cruises aboard the <u>RiverQuest</u> begin in February to observe Bald Eagles wintering along the lower Connecticut River. Bald Eagles mate in January. Eggs hatch between mid-March to April. Cruises to observe other migrants continue through October.
- International Migratory Bird Day (IMBD) is a public engagement initiative that involves field walks, conservation art and learning activities. The annual official IMBD date is scheduled on the second Saturday in May, in the United States and Canada, and on the second Saturday of October in the Caribbean, Central and South America and Mexico. However, events, (posted on <u>www.migratorybirdday.org/events.html</u>) are hosted throughout spring migration. see <u>www.migratorybirdday.org/about.html</u>
- Bird Day celebrations are held on various dates. The first, was held on May 4, 1894, in Oil City, Pennsylvania, by school Superintendent Charles Almanzo Babcock. In addition to the annual May 4th celebration, January 5th is designated as National Bird Day, which can be tweeted, #NationalBirdDay. To learn about Bird Days, including the United Nations World Migratory Bird Day see https://en.wikipedia.org/wiki/Bird_Day
- Seasonal field walks and educational programs Hartford Audubon Society field trips, Spring Census, Summer Bird Count, and Christmas Bird Count are open to the general
 public for participation. See <u>www.hartfordaudubon.org</u>
- **Connecticut Trails Weekend** this program, hosted by Connecticut Forest & Park Association, occurs annually in early June. Field walks and outdoor activities are held across the state, and often in Hartford Parks <u>www.ctwoodlands.org/ct-trails-weekend</u>
- Christmas Bird Count 2017 will be the 118th year of the Audubon Christmas Bird Count. Over 76,000 birders participate in this annual activity, which occurs between December 14th and January 5th every year. The Hartford Audubon Society conducts the Hartford area Christmas Bird Counts. Data gathered contributes to knowledge of bird populations as well as conservation of bird habitats. To learn more, see: <u>http://www.audubon.org/conservation/science/christmas-bird-count.</u>

Event Resources -

Sharon Audubon Center – offers mobile educational programs, including live birds of prey http://sharon.audubon.org/school-programs

The **"Watershed on Wheels" (WoW)** is a mobile educational program available is annually from May through October. WoW event dates must be scheduled in advance. Coordinate with US Fish & Wildlife Service Silvio O. Conte National Fish and Wildlife Refuge staff, call (413) 658-5403. This Municipal Reference is dedicated to City of Hartford residents past and present and future who breathe that spark of fresh air in autumn colors and so strive to conserve the exquisite picturesque and wild landscapes that enrich and diversify city life.

Special Thanks:

Community Partners

Friends of Keney Park – Henry Hester and Bayyinah Lyons Community Solutions – John Thomas Keney Park Sustainability Project – Herb Virgo Ebony Horsewomen – Patricia Kelly Knox – Ron Pitz and Nic Willard Friends of Pope Park – David Morin Pope Hartford Designated Fund – Jean King Leo Smith – International Dark-Sky Association, Northeast Regional Director

Volunteer Planting Projects

Trinity College Do-it-Day UConn Landscape Architecture Hands-On Hartford

Bird Banding

Mary Hooker School, Hartford Illing Middle School, Manchester Two Rivers Magnet Middle School, East Hartford CREC Montessori Magnet School, Hartford





City of Hartford

Department of Public Works with Park Watershed and Trinity College

