

This manual has been prepared for Dublin residents and volunteers who will monitor nest boxes in their yard and /or a public park or green space. Volunteers who monitor nest boxes on public property become part of the City of Dublin's Green Team, a learn and serve group. All volunteers must be registered with the City of Dublin's Volunteer Service Office and wear a volunteer badge when monitoring boxes on City property.

A Brief, Local History

In the state of Ohio , a group of concerned citizens collaborated in the 1980's and formed the Ohio Bluebird Society to support a network of Ohio's residents and communities interested in increasing Bluebird populations that had diminished by 90%. There was a growing concern across North America regarding all bluebird species and the North American Bluebird Society formed for similar reasons.

Dublin's municipal program was started in the 1990's by Darlene Sillick, a volunteer who coordinated efforts with City administration to install many boxes in Dublin parks. In more recent years, city staff and many volunteers including scouting groups have revitalized the program. Bethany Gray is the current, Lead Volunteer for the City's program. Her efforts, along with the many volunteers that support this program and green initiatives throughout Dublin paved the way for the City of Dublin to become first in Ohio and forty-third in the nation to achieve a community certification with the National Wildlife Federation. This certification recognizes and celebrates community-wide green, sustainable initiatives. The Bluebird conservation program contributed to and continues to contribute to this distinctive certification.

Nest Boxes

Boxes are utilized with the goal of increasing populations of Bluebirds, thus also welcoming other native, secondary cavity nesting birds. (More information on why these boxes are needed and why some bird populations need human assistance to thrive is further described in this manual. Though some nest boxes are decorative and sold with no instructions whatsoever, bluebird boxes were not intended to simply be installed and left unchecked. They require a commitment from their human caretakers. Bluebird caretakers who have studied the issues facing these beloved birds often advise others that "it is better not to put up a nest box at all than to put one up and not monitor it".

As citizen scientists and conservationists, it is important to understand the what's, whys and how's before installing a nest box or agreeing to monitor a box in a program. Your work will not only bring personal enjoyment, but I will enhance our local community, and your data will actually contribute to scientific research that impacts human beings and the planet at large. Bird populations and behaviors are actually good indicators of larger environmental issues.



Guidelines have been set to:

Ensure appropriate attention to living creatures, nest box trails, property and generally speaking the environment within the Bluebird conservation management program

Ensure that nest box monitors can be identified as City volunteers and thus authorized to manage nest boxes on public property

Ensure the potential for successful outcomes in the Bluebird conservation management program

Guidelines:

- **Volunteers are expected to monitor their boxes at least once a week from April 1st through July 31st and on an as-needed basis throughout August.** *Although April through June is an intensely competitive time for birds, they often continue to nest into summer months.*
- **Volunteers should report any vandalism of City of Dublin property to City of Dublin staff or Lead Volunteer.**
- **Volunteers must wear a volunteer badge when working on city property.** *Many volunteers keep badges in their cars as a reminder.*
- **Volunteers must contact the Lead Volunteer or City of Dublin staff if they are unable to monitor boxes due to a life event, vacation or any other reason.** *If boxes are not monitored for more than three weeks and communication remains unsuccessful, the volunteer will forfeit their boxes.*
- **Volunteers are expected to clean old nests out of boxes after fledging of last bird from box.** *Dispose and secure nesting materials in a small plastic bag and dispose of in a nearby trash can. Do not throw nests on ground or in park trash cans without bag. The scent from nests sometimes attracts unwanted critters. Cleaning out old nests also helps reduce insects from invading nest boxes as the weather becomes warmer.*
- **Volunteers are expected to approach invasive species, namely House Sparrow, management strategies humanely and with sensitivity regarding views of the general public as outlined by the Lead Volunteer.** *Volunteers should ask for assistance from the Lead Volunteer when necessary. The goal of invasive species management is to prohibit them from negatively impacting native cavity nesting bird populations.*
- **Volunteers are asked to record data from nest boxes and submit data through the city's website, email or by paper.** *This information is utilized by the City of Dublin to obtain support for this volunteer program. Fledgling numbers are also submitted to the Ohio Bluebird Society and the Ohio Division of Wildlife. <http://maps.dublin.oh.us/birdboxes/index.html>*
- **Volunteers are asked to record their volunteer hours through:** <http://dublinohiousa.gov/volunteerism-and-citizen-involvement/>
- **All Volunteers will be provided with necessary supplies and access to the Brand Road barn when further supplies are needed.** *Contact Míme Migliore if you have further questions regarding the Brand Road Barn or are in need of specific supplies.*
- **Bluebird box locations must be preapproved through the City of Dublin Parks and Open Space supervisor or director prior to installation.** *Please contact Míme Migliore prior to installing or moving any boxes. There are a limited number of boxes and trails available on public property. There is a possibility of sharing box monitoring within a larger trail of boxes with other monitors.*



Contact Information:

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Nature Education Coordinator

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Bethan Gray

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I have read and agree to adhere to the Bluebird volunteer guidelines to the best of my abilities.

Name: _____

Date: _____

“Bill Moose and the Blue Birds”

ca. 1920s

Editor’s Note: Bill Moose was the last descendant of the Wyandots in the Ohio region. Born in 1837 in Wyandot County, much of his childhood took place in Dublin and the surrounding areas, primarily along the rivers and tributaries. In an interview with the Worthington News on his 90th birthday, he attributed his long life to living close with nature and observing the custom of his tribe by sleeping outdoors in the summer months. He died in 1937 just short of his 100th birthday.

“A delegation from Upper Sandusky, arranging a big celebration there, and in which Bill was to be one of the chief features, called on him at his Morse Road shack to make arrangements for his presence there.

He refused to go, and the delegation returned home. They were sent back, the committee deciding the celebration would not be a success without the old Indian.

Again, Bill refused to go, and after the committee had repeatedly asked for the reason, the secret finally came out.

Pointing to a large post near the shack, Bill said, ‘You see, there’s a mother blue bird inside that opening there, and she has little ones. I’ve got to stay here and watch out for those birds until they can take care of themselves.’

Of such was the simple and kindly heart of Bill Moose, last of the Wyandots, who loved Nature and all her handiworks.”

Sources:

1. Linworth Historical Society / Linworth United Methodist Church
2. Dublin Historical Society



“Eastern Bluebird: America’s Most Beloved Thrush”

By Jim McCormac, Ohio Division of Wildlife
From the Ohio Bluebird Society’s *Monitor* (Winter 2014)

Two of Ohio’s best known and most beloved birds are thrushes. One of them, the American Robin, is a ubiquitous fixture in suburbia and nearly every other habitat. Robins are often the first bird one encounters upon stepping outside in the morning.

The other thrush may be the recipient of more human assistance than any other bird species in the Buckeye State. It is the Eastern Bluebird, which looks and acts so unthrushlike that some bluebird enthusiasts may not recognize its family ties. The other six species of thrushes that occur regularly in Ohio are habitual ground feeders. Bluebirds, on the other hand, typically hunt prey from posts, small trees and other elevated perches. Bluebirds have keen vision, and can spot grasshoppers, caterpillars, and other small prey from distances up to 130 feet. When a victim is spotted, the bluebird quickly flies to the spot and pounces.

A male Eastern Bluebird is an avian work of art. Avid bluebirders insist that the gorgeous shade of blue that paints a bluebird’s topside is the prettiest color found in nature. They may be right. The rich blue is encountered by deep cinnamon-brown below, and the contrast is striking. Female bluebirds resemble a muted version of the male. Juvenile bluebirds are heavily speckled below, a trait that reveals their thrush family lineage: most thrushes are spotted below, at least when immature.

Eastern Bluebirds are unique among Ohio thrushes in that they nest in cavities. It is this habit that has forged the strong bond between bluebirds and people. For cavity-nesting birds, the availability of suitable nest sites is always a pinch point. Way back in the 1930s, one of America’s premier ornithologists, Frank Chapman, predicted that bluebirds would suffer due to increased competition with nonnative cavity-nesting European Starlings. How right he was. Starlings along with the introduced House Sparrow, began to greatly diminish bluebird populations by usurping bluebird nest sites.

About the time of Chapman’s gloomy prediction, Thomas Musselman of Illinois had discovered bluebirds would readily take to artificial nest boxes, and before long, Musselman had strung a trail of over 1,000 boxes. He met with great success, and the bluebird trail was born. Today, there are tens of thousands of bluebird nest boxes in the eastern U.S. and Canada, and collectively they spawn a blizzard of bluebirds.

Few animals light up a meadow like a bluebird. The stunning males illuminate the summits of fence posts like Christmas ornaments, and their rich throaty warbles add music to the pasture. Thanks to the dedication of scores of bluebirders who build and maintain nest box trails, Ohioans can enjoy more bluebirds than ever. Partners in Flight estimate Ohio’s population to be about 470,000 birds - that’s about 32,000 pounds of bluebirds! For an interesting and delightful read, check out the book, *The Bluebird Effect: Uncommon Bonds with Common Birds*, penned by Ohio author Julie Zickefoose.

Why Do Bluebirds and Cavity-Nesting Birds Need Our Help?

A Bluebird is a **“secondary” cavity-nesting bird**, meaning that it nests in holes inside trees or in covered spaces, not in open spaces like tree branches. It nests in holes that have already been created by “primary” cavity-nesters like woodpeckers. A reduction in the population of woodpeckers can thus also translate to a reduction in natural tree cavities for nesting.

In the early 1900’s the Eastern Bluebird (EABL) was one of rural Ohio’s most common songbirds. Then, because of a series of imprudent activities on the part of humans, and several severe winters, bluebird population declined by as much as 90%. However, some of these problems are being addressed, and now the bluebird is making a comeback due largely to grassroots conservation efforts. However, the continuing loss of natural nest sites to House Sparrows and European Starlings in North America means that this beloved and charismatic bird needs humanity’s help to survive.

Ongoing urban/suburban development and sprawl alters appropriate habitat, or sometimes habitat is just permanently lost. The removal of trees, either dead or alive, where natural nesting cavities are often found, as well as a desire for more pristine landscapes, are also contributing factors.

Because there is intense competition among cavity-nesting birds for a limited number of breeding sites, many of these species have declined in population. Most people, when they think of forests, imagine tall, healthy trees. But forests also have decaying and dead trees, or “snags.” Although seemingly unimportant, snags are valuable to many bird species that depend on them for breeding sites. These dead and decaying trees contain natural cavities in which birds can raise young. As forests are cleared to make way for development, habitats essential to the survival of many birds are being destroyed. Not only is there a reduction of live trees, but dead and decaying trees are being lost as well. (*The City of Dublin does not automatically remove all of their dead trees in areas where they won’t hurt humans, so you may see more of them around for this reason.*)

Non-native, or “exotic” cavity-nesting birds such as the House Sparrow and European Starling compete heavily with native species for cavities in which to nest. These two species were introduced to North America in the 1800s and have adapted to so many habitats that they will out-compete native species for nesting cavities. And all cavity-nesters must compete with other animals that also rely on cavities for their existence, including mice, bees, wasps and some squirrels. House Sparrows and European Starlings often out-compete because the males will kill and maim bluebirds and their babies, mostly inside their own boxes. Bluebirds and Swallows often lose this battle because their beaks have not adapted enough in the last 150 years to provide them more of a fair fight, so to speak. The unfortunate issue here is they are not killing bluebirds for food, and they can also nest just as easily in other spaces such as crevices in barns and under the branches of thick pine trees. The Ohio Wildlife Center has received calls from people who will see a bluebird’s nest starting in a cavity-

like crevice near their porch or deep in a hanging planter, for example. They are excited to start discovering blue eggs, only to soon find the nest disrupted and House Sparrow eggs sitting in its place. The callers then quickly learn about this unfortunate situation involving the consequences of introducing these birds to North America.

In addition, the populations of House Sparrows and Starlings increase as they adapt much more easily to urban development and people. In the annual "Great Backyard Bird Count" of 2012, the participants who submitted data across the state of Ohio (over a 4-day period in February) reported sightings of over 20,000 House Sparrows and over 26,000 European Starlings compared to 1,031 Eastern Bluebirds.

Why Commit to Helping Birds at all?

Native birds are crucial to the balance of our environment, our eco-system. In the Spring and Summer, Bluebird diets consist of 2/3 insects. The remainder of their diet is made up of wild fruits. Favored insect foods include grasshoppers, crickets, katydids, and beetles. Other food items include earthworms, spiders, millipedes, centipedes, sow bugs, and snails. (<http://www.npwrc.usgs.gov/resource/birds/eastblue/ebreq.htm>) Tree Swallows consume many mosquitoes as well. These birds provide natural and free insect control to humans. In spite of pesticides and chemicals, without birds, humans would be overrun with insects.

"Birds are indicators of the environment. If they are in trouble, we know we'll soon be in trouble." (Roger Tory Peterson, American Ornithologist, Naturalist, Artist & Educator, 1908-1996) Birds have been used as environmental health barometers at a local level ever since canaries were used to indicate the safety of air in coal mines; only in recent years, however, have we used monitoring data and analytical tools to use wild bird populations as environmental health barometers on a large spatial level. In 2009, over 2/3 of the bird species in the United States were reported to be in some kind of threatening trouble.

Successful conservation begins with information about the species' status through well-designed monitoring programs. The first comprehensive "State of the Birds Report" compiled for the United States in 2009 presented a new synthesis of major bird-monitoring databases, including data from thousands of citizen scientists and professional biologists.

Cavity-nesting birds are model species for studies in population ecology, conservation biology, behavioral ecology and population genetics. Birds in nest boxes can be observed closely without harm to the birds or the humans. Therefore, it is relatively easy to collect large amounts of data on a wide range of important topics.

Nest Boxes provide an opportunity for people to learn about the natural world. Monitoring enables people to learn about the labors of parenting birds, from the time

they painstakingly build their nest, up to the time they coax their nestlings out of the box to take their first flight. Lessons of patience and persistence are easily observed.

By providing nest boxes, people can take personal satisfaction in doing something good both for their fellow creatures and for the environment. For some people, putting up nest boxes starts as a minor hobby and soon turns into a weekend occupation. The reason? People can see the fruits of their endeavors firsthand.

If you catch the “nest box fever,” you may begin to graduate from having one or two boxes to having dozens of boxes covering several square miles. Not only will you survive this fever, you will be personally responsible for contributing to the survival of cavity-nesting birds in North America!

Ideal Bluebird Habitat

Ideal Eastern Bluebird habitat consists of scattered hardwoods and grasslands in a rural setting. Frequently used grassy areas include meadows, pastures, yards, roadsides, power line rights-of-way, and farmlands. Mowed areas such as golf courses, large lawns, and grazed areas provide suitable habitat as well. Open grassy areas provide foraging habitat, and nearby trees serve as perching or possible nesting sites. Although eastern bluebird populations are recently on the rise, the largest threat to their future is the continued loss of nesting habitat. By protecting snags (dead or dying standing trees) and properly managing open grassy areas, landowners can assist in the continued success of eastern bluebirds and other species that rely on similar habitat. Nest boxes are often placed in pairs (about 20 feet apart) so that competing species in a territory may claim one box while providing a bluebird or other native bird an opportunity in the other box.

In suburbs like Dublin, there are many green spaces suitable for bluebird habitat because of the City’s commitment to parks and green spaces. Bluebirds do not thrive with pesticides because they rely so heavily on insects as part of their diet.

Because Dublin is an ever-changing and growing suburb, habitat also changes. There are also requirements of their placement, for the safety of volunteers and protection of the boxes. Sometimes boxes are placed in areas that are closer to woods or border wooded areas, thus attracting more tree swallows, chickadees or house wrens than bluebirds. It is difficult to always predict the outcomes from year to year. However, if bluebirds take up residency in an area and boxes are properly monitored for their security, they are likely to come back to the same area the next year.

If your yard has some kind of open space and you limit pesticide use, your yard might be ideal for attracting bluebirds. Bluebirds like other birds can be territorial and sometimes private, thus, if you have a nest box too close to a bird feeder, for example, you may not attract bluebirds in that box. If you have a confined back yard that does not have much open space or is all heavily wooded, you may not attract bluebirds in your

box. You may still attract chickadees and house wrens. Some people ask why Dublin has not set up nest boxes in what appears to be ideal open-area habitat. One reason is because there are human activities that we know will interfere with nesting at some point in the nesting season, such as multiple soccer fields that will be utilized in the Spring or the Dublin Irish Festival that will be set up and torn down in the Summer and host 100,000 people! A second reason is because we do not want to set up more boxes than we have volunteers to monitor, in the event they become overrun with invasive species.

“NABS-Approved” Nest Boxes with Poles & Baffles

The North American Bluebird Society (NABS) recommends a few styles of boxes for optimal and humane results. The boxes used in Dublin’s program were designed by local volunteers but have been NABS-approved! Examples of approved box styles and predator guards can be found at <http://www.nabluebirdsociety.org/nestboxes/nestboxplans.htm>

All bluebird boxes should be built so that they can be opened either from the side, front or top. They require certain ventilation and space. A wood often used for nest boxes is cedar because of its ability to sustain temperature extremes a little better (although not guaranteed). When mounted on a pole, they should always have baffles to deter raccoons, snakes, cats, etc. Bluebirds will use boxes with round holes that are 1 1/2 inches to 1 9/16 inches (or other oval or horizontal entrances depending on the style of boxes) Boxes with holes smaller than this will only attract chickadees and house wrens. Fortunately, these sizes of holes are confirmed to keep European Starlings out of the boxes, which is a tremendous help to the birds, but they do not keep House Sparrows out completely which is one reason they require regular monitoring. If a box is painted or stained, a light color should be used to reflect light and reduce overheating. Ventilation holes are often added at the bottom for drainage and air circulation.

Perches should never be used on bluebird boxes because they are not needed by bluebirds and will only facilitate harassment by House Sparrows. Often smooth grooves called “kerfs” are cut into the interior front wall to provide a rougher surface, allowing young chicks to climb up to the entry hole.

While some boxes can be placed near trees, it is best not to place boxes on poles directly under trees with large branches. Otherwise, mammals and snakes have been known to jump from these branches right on to the boxes and reach inside the box for a meal. It is not recommended to place any nest box directly on a tree or fence for the same reason. Roaming cats also can climb trees or reach right into boxes close to the ground.

For people wishing to buy a full system that includes a pole, baffle and NABS-approved box, they can usually be purchased at bird specialty stores (like Wild Birds Unlimited) for approximately \$50.

Why the Emphasis on Monitoring?

A box that is not monitored may be more harmful than helpful to bluebirds. See the following information below written by Ohioan Julie Zickefoose in *Bird Watcher's Digest*:

“Many people who have a number of bluebird boxes to monitor consider predation a natural part of the scene, which, of course, it is. But a distinction should be made between bluebirds that nest in natural cavities and those attracted to artificial sites. How many times have you walked right past a woodpecker hole high in a tree and never noticed it? Can you say the same of a nest box mounted on a tree, fence post, or pole?”

In attracting bluebirds away from cryptic natural cavities to conspicuous nest boxes, we are in a sense setting them up for predation. The incubating female, potential mother to dozens of offspring, might slip unnoticed into a tree hole, but less secretly to a box out in an open field. She is at special risk, and her death impacts the breeding potential of a local population.

Should we put up nest boxes at all? Yes, but only if we accept the responsibility that goes with them, to monitor and help protect them from predators.”

THE MONITORING PROCEDURE

- **Boxes must be checked ONCE A WEEK from late March through August.** With improved regularity of monitoring over a 3-year period, it has been reported that eggs laid to hatch increase from 49% to 70%. If you cannot check your boxes, ask someone to serve as a substitute. (Contact the Lead Volunteer to request a substitute if you are in Dublin's public program)
- Collect and gather your supplies before monitoring to make sure you have everything you need. (See Suggested Supply List)
- Check the boxes BEFORE DARK so the scent does not entice a predator that is out roaming after dark to the box. Females usually lay their eggs in the morning and are absent from the nests in the afternoon.
- As you approach the box, you may see the adults perched on or near the box. You can use binoculars to see if there are adult birds in the area. Bluebirds will sometimes be perched on tree branches or power lines high in the sky near their boxes, since that is how they scope the area for food. Bluebirds tend to watch from a close distance while monitors check their boxes. If there are tree swallows nesting in your box, they will definitely make attempts at dive-bombing you to protect their territory and will come close to your head & face. Sometimes a hat and sunglasses come in handy when checking boxes with tree swallows!

- Knock on one side of the box before opening it, keeping your head to the side as you open it, as an adult bird may be trying to hide and fly out from the side when you open it.
 - Open the boxes very carefully. Look in over the nest. Usually the adult bird will fly out, but sometimes the female will stay on the nest, especially if she is incubating eggs. If an adult is still in the nest, you can gently grasp it and move it.
 - **Be respectful of the amount of time the box is open and do not prolong your interaction...**while we are not harming the birds and they will not be negatively affected by our “brief” human touch (that is a myth), the birds will still be stressed by what they perceive us to be - a giant predator! And of course parents will be concerned about their babies. You can take a photo with your camera, but again, be respectful to the birds of the amount of time you spend doing it.
 - If a bluebird’s nest has been built too tall where the chicks are closer to the entry hole, remove some of the bottom layers of the nest to lower the nest inside the box. This will help deter flying predators like owls and hawks that might sense or see chicks higher in the box and closer to the entry hole.
 - You can examine the chicks themselves by picking them up and looking for any markings, or if there are any blowflies underneath them. Sometimes you may observe a blowfly larvae attached to a chick. You can remove these with your hand. If you must handle a chick outside of the box, place them in something that will protect them from the sun or wind and also prevent an escape.
 - **Collect data for each box you monitor.** Record the box number if applicable, the date, the type of nesting material or species of bird, the number of eggs, number of nestlings, and number of fledglings. (See the Field Worksheet) You can record your data with a worksheet, in a small notebook or digitally on your phone. *(In Dublin, submit this data as regularly as possible by paper, Email or Website. If you cannot submit the data regularly throughout the season, continue to collect it on your own and submit the remaining data as soon as possible, preferably by October)*
 - **Do not check the box on colder or wet, rainy days,** especially if there are eggs or babies in a box. This could increase the chances of hypothermia.
 - If there are problems or undesirable conditions and it is not clear what happened, try to figure it out using the FAQ Information in this manual.
- a. **If there is a house sparrow’s nest or a house wren’s “dummy” nest in the box,** remove it and throw away. Leave any other native bird nests, even if the native birds have out-competed one another and started building on top of another’s nest. If there is a house sparrow’s nest and another native bird is nesting nearby in another box, leave the nest and you can progress to active management...contact the Lead Volunteer if you need assistance. Otherwise if you remove the nest but don’t remove the bird, the male

may think the nearby bird was in their territory and kill the nearby birds in a revenge-like behavior.

b. **If there are blowflies**, put the baby birds in a bandana/towel while you remove the blowflies - without letting them just fall to the ground below. Straighten the remaining nest and place the baby birds back into the nest. If there are white blowfly eggs in the nest, remove as many as possible.

c. **If there are ants**, use petroleum jelly to gel the box near the openings and the exposed pole between the baffle and box. Remove part of the nest that is infested and replace with some grass/pine needles. Keep as much as the original nest as you can. You can avoid ants by gelling your box and pole in May when the temperatures start getting warmer. Gelling your box near the top ventilation area will also deter wasps and bees from trying to enter and nest.

- Do not open or check the box after the 13th day of hatching since this may cause some of the chicks to fledge prematurely. Wait until all the chicks have fledged and then clean out the nest from the box.
- If nesting is complete and all birds are fledged, REMOVE the old nest and scrape out the box. Keep head to the side while removing some dirtier nests to avoid direct inhaling of dusts & residue. Do not take any nests home with you - it is illegal unless you have a permit. Place the nest in a small plastic bag and tie/secure before throwing into the trash (similar to dog waste). This will help deter mammal predators from being attracted to the scent, either near the box or near the trash can. Record any number of eggs that did not hatch with your data, and then discard with the nest.
- Only if it's possible, try to walk a different way to the box at different times.
- It is not recommended that you open the boxes on the day when Franklin County does general mosquito spraying in your area of Dublin
- Do not feed anything to the birds except in the event of an emergency (see FAQs). *Bird feeders only supplement a bird's diet, thus not being a primary food source creating human dependency. However, it is still beneficial in the summer months to lessen the amount of food provided in feeders since 1. other food sources are plentiful in the summer; and 2. it may attract more critters in these months closer to your house that you did not intend, including skunks. You can also help our ducks and other wildlife by not feeding them, particularly bread, chips, snacks, etc. Bread is actually not good for ducks, and it can create yeast & bacteria in ponds that can lead to botulism and death of the pond's ducks and aquatic life.*
- If there is any litter within 20 feet of your boxes, especially cans, plastic, or fishing lines, please consider collecting and disposing. Birds and wildlife are often attracted to litter because of their shiny color or scent, and can be potentially harmed by it. Old fishing lines are particularly deadly when birds get entangled in them.

A SEASONAL TIMELINE

WINTER: Some birds, including woodpeckers, will use nest boxes in the winter to roost overnight and to provide some extra shelter/warmth during days and nights with frigid temperatures. Unfortunately, sometimes House Sparrows hang out in and near these boxes and can be the earliest nesters in the season requiring management in March.

MICE can sometimes take shelter in boxes during the winter, and they tend to nest in boxes that have been left unmonitored. These boxes need to be cleaned out early in the Spring, or else the birds will not use these boxes. Exercise caution when handling old mice nests. Wear gloves. Wood shavings might be found inside a box in late winter/early spring from mice or woodpeckers.

MARCH: Begin checking boxes in mid-March. Begin controlling any House Sparrows so that other birds will have an opportunity to use these boxes when they are ready to nest in late March and early April. Report any damaged or vandalized boxes to the Lead Volunteer. Chickadees and Bluebirds can start to nest in March.

APRIL-MAY: Gel the pole and box opening areas with petroleum jelly to deter ants and wasps. Control House Sparrows. Follow monitoring procedures. Tree Swallows and Bluebirds can start to nest in April. House Wrens start returning from migration between April and May. Chickadees continue to nest but usually don't nest after May. *If a Chickadee starts to nest in your box, a Wren Guard or may be utilized to deter Wrens. A special plate can be used to decrease the size of the hole prohibiting other birds. House Wrens may also destroy eggs, however, they are native and protected by law.*

JUNE-AUGUST: Continue monitoring regularly. Tree Swallows will typically not nest after July. Bluebirds and House Wrens may continue nesting through August.

SEPTEMBER: Do a final check and box clean. Submit any data you have not submitted already. If you are an individual member of the Ohio Bluebird Society, they will send you a form where you can submit your fledgling count of various birds for the season.

FALL: If you desire, you can "winterize" boxes with Mortite that is used as weatherstripping for windows by placing some over the horizontal ventilation opening on the side of the box. This gives the boxes some extra protection over the winter when they roost in them for warmth.

OVER-WINTERING BLUEBIRDS: Bluebirds who stay for the winter will often travel in small groups looking for food sources. In the winter they enjoy berries, mealworms and suet. You can attract bluebirds to your yard, especially on very cold days, by providing mealworms and suet. They are also highly attracted to a heated birdbath in the winter, as are other species. (Birdbath water heaters can be purchased at bird specialty stores or online) Planting native, berry-producing plants and trees helps provide a natural source of food during the Fall and Winter months for bluebirds (and their thrush relatives - Robins). Evergreens and brush piles also provide shelter.

Bethany's Checklist of Nest Box Monitoring Supplies

Always Bring in a bag or satchel/backpack:

- Your Dublin Volunteer Badge for monitoring on City property
- Cell phone
- Data entry notebook or worksheet & pen/pencil (or digitally enter on your smart phone)
- Screwdriver & Scraper
- Gloves - either disposable latex (Available at Brand Road Barn) or your own gloves. If you use your own gloves, make sure to wash on sanitizing cycle in your washer occasionally to sanitize
- Small Plastic Bag for nest and trash disposal (Available at Barn, or old shopping bags)
- Vaseline / Petroleum Jelly if anything needs gelled or re-gelled
- House Sparrow management supplies
 - a Van Ert in-box trap, a mesh drawstring laundry bag, ziploc bag, a clamp for humane euthanasia if necessary (see House Sparrow Control)
- Bottle of water (you will need it more than you think, even in the Spring)

Optional but helpful, according to your location and your personal needs:

Wear longer pants to avoid poison ivy or thorny shrubs

Wear boots or slogger shoes when it has been wet or muddy

Hat

Sunscreen / Sunglasses

Bug Spray

BUT, if you do not use a natural or DEET-Free spray, make sure to wash off any chemicals from your hands before opening boxes.

Small foot stool to see inside the boxes if you require it (Bethany is 5'6" and uses one)

Binoculars if you own them

Kleenex

Hand Sanitizer

Small snack if your blood sugar requires it

Volunteer manual & notes to reference information, especially for new monitors

At the Brand Road Barn (for monitors of City property)

A First Aid Kit, sunscreen, hand sanitizer, petroleum jelly, disposable gloves

Extra house sparrow control supplies

Container of dried mealworms for emergency feeding of birds or nestlings in distress

Instructions for box assembly with proper screws

Various sized screws used on boxes if any require replacement

Shoebboxes & small boxes and hand towels, in case you need to transport a bird to the Wildlife Hospital of the Ohio Wildlife Center (limiting the vision and providing warmth reduces stress of the animal)

Zip ties that hold baffles and boxes in place on the poles

Pole Puller and Pole Banger (only relevant to volunteers removing & placing poles)

PROBLEM-SOLVING FAQs

DO THE ADULT BIRDS APPEAR SICK OR INJURED?

DO THE INFANTS APPEAR SICK OR INJURED?

If there is obvious injury to an adult or young chick and it is still alive (blood or bruising), please wrap carefully in towel/cloth or nest materials and/or place in small container/box and take directly to the Ohio Wildlife Center hospital. Mark this information in your data.

If you know the FEMALE mother bird appears sick / weak or definitely injured and can be captured, throw a towel or cloth over it and scoop it into a box. Take to the Ohio Wildlife Center hospital along with the nest of young. The young can survive without the male but they cannot survive without the female mother because she provides the warmth they need in addition to food. If the female is sick or injured and there are babies in the nest, take the nest with the babies along with the mother to the Ohio Wildlife Center's hospital. If the babies are in distress, they may need to be fed some moistened mealworms. (I keep a small stock of dried mealworms on hand; there are also some available at the Brand Road Barn) Mark this information in your data.

DO THE BABIES APPEAR ORPHANED?

Wait and see if the parents visit the nest box. If more than 10 minutes passes with no activity, and the adult birds are nowhere to be found, the nestlings could be orphaned if they look pale and are not progressing in their normal stages of development. Take the nest with the babies, preferably sheltered in a small box, to the Ohio Wildlife Center's hospital. If the babies are in distress, they may need to be fed some moistened mealworms. Mark this information in your data.

DID THE ENTIRE CLUTCH OF EGGS NOT HATCH AT ALL?

If the entire clutch of eggs has not hatched well beyond 15 days since the first laying, this may be due to an extreme drop in cold temperatures or an extreme high of hot temperatures that negatively impact the hatching. This has happened to the Lead Volunteer in both instances---once in April when the temperatures dropped below freezing, and once in July when the temperatures reached 100 degrees. The eggs didn't thrive and none of them hatched. The mother "might" still be near the nest trying to incubate them. In this case, you may ask first if you are uncertain, however, you can discard the entire nest with eggs to encourage the female to move on. (Sometimes both the male and female have already left the nest.) This is why keeping data is important so you can look back at your notes to see approximately when the first eggs were laid.

ARE THE BABIES DEAD IN THE NEST?

If there has been a temperature drop and the bodies look intact, the mother may not have been able to keep the babies warm enough to survive the danger of hypothermia. This may also be caused if a nest becomes too damp or wet. Dispose of nest and birds but do not leave on ground near boxes as it will attract predators to the boxes. If the babies are extremely thin or emaciated, both of their parents could have been killed and they were unable to feed them properly. Mark this information in your data notebook.

If the babies and/or a parent are dead but look like they have been attacked, it could have been a house sparrow or other predator attempt. Dispose of nest and birds but do not leave on ground near nest boxes so it will attract predators to the boxes. Mark this information in your data notebook. Keep an eye out to see if there is a house sparrow trying to nest in the area. If it has claimed territory by this act, it needs to be dispatched.

ARE THE ADULT BIRDS DEAD?

If the male of bluebirds and tree swallows is found dead, the babies still have a chance with the mother who can both feed and keep them warm. Keep an eye on this situation.

If the female bird of bluebirds and tree swallows is found dead, the babies cannot survive without the mother. Take the nest with the babies, preferably sheltered in a small box, to the Ohio Wildlife Center's hospital. If the babies are in distress, they may need to be fed some moistened mealworms.

If any bird is found dead outside a box, you can dispose either by placing bird in a farther corner of the area away from bird boxes, among trees/woods, so not to attract predators to the boxes, OR you can place in a bag and then throw in the trash. If it is found near the box, dispose by using the same method(s) described above.

If an adult bird is found dead in a nest box with its eyes pecked or other bloody, pecking marks on it, it is a House Sparrow and it needs to be dispatched.

ARE THERE MISSING EGGS IN THE NEST?

If there are missing eggs in the nest but the parents are still active in visiting and attending to the nest box, leave it alone and let the parents continue with the eggs that are in there as they may still hatch. Do look for any broken eggs that might be outside near the box and pick those up so not to provide a scent for predators. (In one case involving a Chickadee's nest in Dublin, there were 7 eggs originally, 3 eggs disappeared, and 4 remained. After continuing to let the mother sit on those 4 eggs, only 3 hatched and fledged successfully.) All of this should be recorded in your data notebook. If eggs suddenly disappear and the nest is partially pulled out of the hole, it is likely a raccoon or cat. (Sometimes a House Wren will pull out nesting material

started by another bird when it is competing for a box.) Because of our box placement and pole system with baffle, we have deterred raccoons and cats, but sometimes they still find a way. In addition to deterring ants and wasps, a gelled pole on the rear of the box will also help deter any raccoons trying to jump up on top of the box.

ARE THERE BROKEN EGGS IN THE NEST?

If there are broken eggs in the nest and the parents are nowhere to be found in the vicinity for longer than 10 minutes, they have likely abandoned the nest. Remove nest and dispose in plastic trash bag in the trash. Look for any residuals on the ground and pick up. If eggs are shattered on the ground or in the nest, it could be a red squirrel, a chipmunk, a house wren or a house sparrow. If the eggs are in the nest but there are tiny holes pecked in them, damaging them, it is likely a House Wren.

ONE DIFFERENT EGG SUDDENLY APPEARS AMONG OTHER EGGS?

The **Brown-headed Cowbird** is a brood parasite, meaning that it lays its eggs in nests of other species. Cowbird eggs are white to grayish-white with brown or gray spots or streaks. Many species' eggs resemble cowbird eggs, so you may not be able to tell if the nest is parasitized until after the eggs hatch. Fledgling cowbirds are a dull grayish-brown color, and will be nearly their adult size (about the size of a starling), which often means parents will be feeding a youngster larger than themselves. A female cowbird quietly searches for female birds of other species that are actively laying eggs. Once she has found a suitable host, the cowbird will sneak onto the resident bird's nest when it is away, usually damage or remove one (or more) egg, and replace that egg with one (or more) of her own. The foster parents then unknowingly raise the young cowbirds, usually at the expense of their own offspring. Cowbird eggs require a shorter incubation period than most other songbirds and thus usually hatch first. Cowbird nestlings also grow large very quickly. These advantages allow them to command the most food from their foster parents, usually resulting in reduced nesting success of the host species.

Because cowbirds are native to the U.S., they are protected under the Migratory Bird Treaty Act and in most instances it is unlawful to use lethal control without a permit, including the removal of their eggs from a nest. Unpermitted control of cowbirds is occasionally permissible under special circumstances outlined in the Migratory Bird Treaty Act. Additionally, in some states, such as Michigan and Texas, permits can be obtained to trap cowbirds to protect endangered species like Kirtland's Warbler, Golden-cheeked Warbler, and Black-capped Vireo.

Source: <http://nestwatch.org/learn/general-bird-nest-info/brown-headed-cowbirds/>

VANDALIZED BOXES or OTHER KIND OF DAMAGE?

Native nests AND nest boxes are protected by both state and federal laws, particularly the Migratory Songbird Act. While difficult to catch a culprit of purposeful vandalism, few realize that fines for purposely tampering with a nest or nest box can potentially be as high as \$10,000. Report any vandalism to Mime Migliore and Bethany Gray. Mime will

report the information to the Dublin Police, and Bethany can help replace the box or re-assess location. Vandalism might include smashed boxes that hang facing downward off the pole; pellet gun marks; paintball gun marks; or general evidence of any pellet gun activity in the park. You can also report other concerns in any park to Mime, such as any vandalized park property; a damaged tree limb hanging over a bike/walking path, etc. In some cases, if there are landscape changes that have been made to a park and boxes become in the path of a lawn mower, poles may have been hit by a mower and bent. Please report this as well.

FOUND A LARGER, INJURED ANIMAL in DUBLIN?

If you come across a larger mammal or raptor that is injured but still alive, such as a raccoon, hawk, owl, goose, large turtle species, etc., call the Dublin Police at 889-1112 and report the situation and exact location. The City has contracted with SCRAM! Wildlife Control, a division of the Ohio Wildlife Center, to come on site, attempt to capture it and transport it to the Ohio Wildlife Center's hospital in a humane manner.

WHAT IF I COME ACROSS A COYOTE?

The best local information on this topic is available at these two Websites:

City of Dublin: <http://dublinohiousa.gov/nature/plants-animals/>

Ohio Wildlife Center: <http://www.ohiowildlifecenter.org/dnn/Whatwedo/WildlifeFAQ.aspx>

WHAT IF SOMEONE COMPLAINS TO ME IN A PARK?

Because volunteers wear badges and work on City property, it is possible someone may ask you questions or complain about something involving the parks or another issue involving the City that is not on the topic of bluebird trail monitoring. While we encourage dialogue about the bluebird program and the City's Green Team corps of volunteers as you are comfortable, complaints and issues outside of these topics are not your responsibility while you are monitoring boxes, and you do not have to worry about trying to respond. Tell them they need to contact the Dublin Service Center or Mime directly. If there is any dialogue that you feel uncomfortable in engaging, tell them to contact Mime.



Photo to Left: A Cowbird's Egg in a Bluebird Nest

LIFE SPAN

How long any bird lives depends on many factors. Genetics, food supply, access to clean water and shelter can affect their health. They may die before reaching their maximum life span as a result of inclement weather (such as the severe weather of 1977-1978), accident, disease or predation. Therefore, some bluebirds may only survive 1 to 2 years. However, it is possible that a bluebird might live 6 to 10 years.

Young birds that have recently left the nest are particularly vulnerable, as their survival skills are less developed than experienced adults. The survival rate of fledgling bluebirds is probably roughly 50% per year. That is, at the end of the first year, 50% of the birds would survive; after two years, 25% would still exist, and, extrapolated to the fifth year, only about 3% of the original group would still be alive.

This underscores the importance of work done by bluebird landlords. If the core population of bluebirds is extremely low, it can take decades or longer to rebuild population levels. (www.sialis.org)

DISEASES from UNCLEANED BIRD FEEDERS & BIRD BATHS

Conjunctivitis is the inflammation of the eye that can be transferred between birds from bird feeders and bird baths that are not cleaned. With the concern over this and other diseases, including Salmonellosis, Aspergillosis, and Avian Pox, which are easily transmitted at bird feeders and birdbaths, the Audubon Society recommends paying diligent attention to cleanliness in pursuit of responsible and rewarding bird feeding practices. Birds with disease are more likely to die from starvation, dehydration, predation, and severe weather, so protect them by following these tips from the National Audubon Society:

- **Disinfect your feeder and birdbath:** To keep pathogens at bay, immerse your seed feeder or birdbath in a nine to one water-bleach solution, rinsing it thoroughly, once a month. In the presence of outbreaks, disinfect twice as often.
- **Empty water from your birdbath regularly:** Brush or wipe it clean and rinse, then refill the birdbath with fresh water. (This practice also deters mosquitoes breeding in the water during the summer)
- **Discard old seed and hulls:** When you clean your feeder, get rid of the old seed. Rake or sweep up any uneaten hulls on the ground. The disease-causing Trichomonad protozoan, for example, can live for up to five days in food and several hours in water.
- **Avoid overcrowding:** If possible, provide more than one feeder and spread them out. Crowding only expedites the spread of disease, so give the birds variety and plenty of room.

If you spot a bird with noticeable conjunctivitis (swollen eye) and you are able to capture it, you can take these birds to the Ohio Wildlife Center's hospital where they will treat it with antibiotics.

HOUSE SPARROW (HOSP) CONTROL



House Sparrows are actually not a sparrow, rather, a type of finch. Male house sparrows can and are able to build a nest anywhere there is a crevice---in a barn, in a pine tree, around houses. However, house sparrows will take over the nest boxes since they are available. While they appear gentle in a fast food parking lot eating up the crumbs, they can be devastating to other birds in North America. North America's farms have been especially appealing to them. They were originally brought here from Europe to help eat insects to benefit the crops; instead they ate up the crops and farm animal feed, especially grains. They were also brought to eat the seeds from horse droppings and consume canker worms in the trees outside one man's office building, as is reported in several articles. It became a prestige bird at first, however it quickly started displacing native songbirds and becoming highly populated in building gutters, pipes and store fronts. Their nests were bulky and their droppings required frequent clean-up. (Source: Mel Bolt, Ohio Bluebird Society)

Sometimes people react to the topic of house sparrow control, stating that it should be left alone to do its own thing among other reasons. This is understandable on the surface. They are unaware about the history of this bird and how much havoc it has wreaked, causing an imbalance of nature in North America. Unfortunately these birds would take over most cavities and nest boxes if they were completely left alone. Many bluebird monitors try to be sensitive to these feelings and often encourage other monitors to generally practice discretion, sensitivity and humaneness when approaching house sparrow control and management. This is often the area where newer monitors require the most assistance from experienced monitors.

There are two forms of House Sparrow management, namely, passive and active. Many nest boxes that are left unmanaged even one year tend to produce an abundance of house sparrows by summer's end. Conversely, boxes that are managed regularly tend to increase their populations of native birds each year, and the bluebirds in particular will choose to stay around these areas in the winter. When house sparrows must be actively controlled by humane euthanasia, many monitors will "recycle" these birds for good use - by giving them to their local wildlife hospitals/rehab centers. They

are then fed to injured hawks in the hospital. Hawks eat birds in the wild, and they are not as fond of the mice that are more often fed to them at the centers. (Our local hospital is the Ohio Wildlife Center, off of Sawmill Road, located at 2661 Billingsley Road - see their Website for hours)

HOW DO I KNOW IT'S A HOUSE SPARROW?

1. Easiest way is to look and see house sparrow entering or leaving the box.
2. The next way to tell is that House Sparrows will sometimes hang out in a box before starting to build a nest. If you open the box and find little whitish/brownish poops all over the bottom of the box, a House Sparrow has claimed this box. (Clean out with your scraper and proceed with management techniques)
3. The next way is to look at the nest. If the nest starts swooping upwards and looks like a wave or curl, it's a house sparrow. If there is any kind of litter like plastic or string in the nest, it's probably a House Sparrow. If another bird has nested but there are long grasses placed in and over their nest, a House Sparrow has taken over the box and should be removed.

WHEN IT'S SAFE TO TRY **PASSIVE** MANAGEMENT...and, WHEN NOT TO USE IT, ...and WHY IT DOESN'T ALWAYS WORK

1. **Nesting material** - Removal from the nest box
2. **Eggs** - Removal from the nest after the entire clutch is laid. Pierce a pin hole in each egg and return to the nest (will not hatch). Place fake eggs in the nest. Each of these will cause the female to incubate for a period of time and eventually she will abandon the nest.
3. **Entrance Hole.** Plug the hole temporarily until the House Sparrows leave

These three procedures limit the reproduction of House sparrows but frequently chase the birds to your neighbor, making him deal with the problem. In addition, the house sparrows often keep returning and are tenacious about rebuilding their nests. Hormones make a house sparrow more attached to the nest box than to its mate.

On occasion, if a House Sparrow nest is already made with eggs, sometimes a female can be trapped and then released from the box in the same location, and it may "spook" her so she doesn't return. This does not always work as easily with the male while he is building the nest.

If both or all the boxes at your site have house sparrows, you may try the passive techniques. However, if any other native bird is nesting nearby, do not use a passive technique as the house sparrow will often "think" it is the nearby bird that removed its nest/eggs, and it will retaliate (so to speak) by attacking the nearby birds. The male House Sparrow sits in the entrance hole, blocking the exit, thus making the birds captive

inside the box. It first pecks the eyes, blinding the resident bird. Next it pecks the head of the bird, exposing the skull, causing the eventual death of the bird. Once the adult or chicks are dead, it builds its own nest on top of the old nest and decaying bodies. Since they have little or no sense of smell, this isn't a problem for them. The beaks of native birds have not adapted sufficiently in the last 150 years, since the introduction of these species to North America, to give them a chance at a fair fight, so to speak.

ACTIVE MANAGEMENT

Active management involves trapping the house sparrow in the box and humanely euthanizing it. A "Van Ert" in-box trap must be set it when you know a house sparrow is trying to nest there. When the bird has entered the box, the trap will shut and you will see a red dot in the hole of the box. Do not leave the trap for over an hour during the daytime.

Sometimes during the most competitive months, traps have been set and the house sparrows will fly into the boxes within minutes. Sometimes, it takes longer and one has to come back and check it. On occasion a bluebird or swallow will enter a trapped box. In this case the bird is released. Sometimes a trap can be left at dusk and it is okay to leave it overnight since the birds come back to roost in the box overnight. However, if this is done, it **MUST** be managed first thing in the morning.

Wrap a white drawstring mesh laundry bag over the box and pull the string so the bag is securely over the box. Open the box with the bag still over it. The bird will fly out into the bag and you can capture it. At this point, you can euthanize the bird through the bag to be more discreet. Otherwise, you can also hold the bird with one hand while removing the bag and take it to a discreet location to euthanize.

The quickest, most humane method of euthanizing a small bird without drugs is the breaking of the neck. Some methods that have been utilized in the field in the past, such as thoracic compression, are no longer recommended as humane by many organizations such as the Purple Martin Conservation Association and the Ohio Wildlife Rehabilitators Association. On some occasions this is practiced by scientists/biologists in the field or in veterinary/wildlife clinics when it becomes necessary or there are no other resources, however, the American Veterinary Association advises practicing discretion for the sensitivity of others. With small birds, a medical clamp (a cheaper version that is used to remove stitches) can be used at the base of the neck without the direct use of hands if that is preferred. The euthanized birds are then placed in a container and placed in a refrigerator/freezer until they can be delivered to the nearest wildlife hospital. If this is too inconvenient, the house sparrow can be discreetly placed in a remoter area among trees/woods and recycled back into the environment as food for another animal.

Why can't I trap and release the bird in another location several miles away?

Laws forbid the trapping and transport of any kind of live wildlife from one location to another. While people sometimes do this with mammals on their properties, it actually places the animal in a foreign environment and causes stress on the animal because they are no longer familiar with their surroundings in order to best survive. It can upset the territorial balances already occurring among animals of that region. Additionally, **these laws are in place to prevent the possible spread of disease for the safety of both animals and humans.**

One way to help educate others about attracting less House Sparrows to backyard feeders is to tell people not to buy the cheapest seed that contains mostly millet, a type of grain that they especially like to eat.



Photo: Monitoring a Bluebird Box in the middle of wildflowers at Brandon Park.
Monitoring supplies are in a satchel on the ground.

BOOKS & RESOURCES

ABOUT BLUEBIRDS:

(Booklet) *Enjoying Bluebirds More: A Special Publication from Bird Watcher's Digest*
By Julie Zickefoose (1993)

(Book) *The Bluebird Effect: Uncommon Bonds with Common Birds*
By Julie Zickefoose (2012)

(Book) *The Bluebird Monitor's Guide to Bluebirds and Other Small Cavity Nesters*
By Jack Griggs, Cynthia Berger and Keith Kridler (2001)

(Book) *Bluebirds: Their Daily Lives and How to Attract and Raise Bluebirds*
By Tina Dew (1986)

(Book) *The Bluebird Book: The Complete Guide to Attracting Bluebirds*
By Donald and Lillian Stokes (1991)

(Book) *Bring the Bluebirds Back Even on Your Hand*
By Andrew Troyer (1994)

(Book) *Bluebirds Forever*
By Connie Toops (1997)

Build a Bluebird Trail: Storey's Country Wisdom Bulletin A-213
By Dale Evva Gelfand (1999)

(Book) *Bluebird Trails: A Guide to Success*
By Dorene Scriven and Jo Ellen Vetter Warolin (1993)

(Journal) *Bluebird*
A publication for members of the North American Bluebird Society
www.nabluebirdsociety.org

(Newsletter) *The Bluebird Monitor*
A quarterly newsletter for members of the Ohio Bluebird Society
www.ohiobluebirdsociety.org

(Website) www.Sialis.org
A MEGA Website about everything you ever wanted to learn about bluebird monitoring

(Website) www.BluebirdNut.com
Dedicated to Bluebird Conservation, Education and Awareness

(Brochure) *Hit the Trail for Bluebirds: How to Make and Enjoy Your Own Bluebird Trail*
By Richard Tuttle; Published by ODNR Division of Wildlife
<http://www.dnr.state.oh.us/Portals/9/pdf/pub339.pdf>

Van Ert In-Box House Sparrow Traps
<http://www.vanerttraps.com>

Where to Buy Dried Mealworms

1. "Happy Hen Treats" Mealworm Frenzy - Available on Amazon.com
2. The Nature's Way (Ross, Ohio) - <http://www.thenaturesway.com>
3. Bird Specialty Stores such as Wild Birds Unlimited

BIRDS & CONSERVATION:

STATE & LOCAL RESOURCES:

FREE MONTHLY WEBINAR: "Lunch with the Birds"

Third Wednesdays from 12-1 p.m. (Pre-registration required)

The Ohio Bird Conservation Initiative is proud to present this webinar series on a variety of bird and conservation-related topics.

<http://obcinet.org/lunchwiththebirds>

Ohio Birds and Biodiversity - A Blog by Jim McCormac

<http://jimccormac.blogspot.com>

Ohio Lights Out

Reducing the number of bird collisions by turning off the lights

<http://www.ohiolightsout.org>

Ohio Wildlife Center (Located in Northwest Columbus & Shawnee Hills)

Wildlife Hospital, Rehab Facility & Nature Education Center

www.ohiowildlifecenter.org

Columbus Audubon and Grange Insurance Audubon Center

Columbus Audubon hosts free, monthly speakers/programs from September through April that features a variety of national and local experts on birds and conservation.

They also host a variety of field trips and service projects for birders in Central Ohio.

Membership is encouraged but not required to attend the programs.

<http://www.columbusaudubon.org> and <http://grange.audubon.org>

Black Swamp Observatory (northwest Ohio)

"The Biggest Week in American Birding"

<http://www.bsbo.org>

For Teenagers - Ohio Young Birders' Club (OYBC)
www.OhioYoungBirders.org

State of Ohio Division of Wildlife (“Birding in Ohio”)
<http://www.dnr.state.oh.us>

State of Ohio Natural Areas & Preserves
<http://www.dnr.state.oh.us/dnap>

Central Ohio Metro Parks
<http://www.metroparks.net>

City of Dublin Parks & Open Space
<http://dublinohiousa.gov/parks-open-space>

The Ohio State University Museum of Biological Diversity
<http://mbd.osu.edu>

Columbus Zoo and The Wilds (Cumberland)
www.colszoo.org and www.thewilds.org

Stratford Ecological Center & Nature Preserve (Delaware)
<http://www.stratfordecologicalcenter.org>

The Dawes Arboretum (Newark)
<http://dawesarb.org>

Ohio Nature Education (Johnstown)
<http://www.ohionature.org>

Cedar Bog Nature Preserve (Urbana, affiliated with the Ohio Historical Society)
<http://www.ohiohistory.org/museums-and-historic-sites/museum--historic-sites-by-name/cedar-bog>

Ohio Wildlife Rehabilitators Association
<http://www.owra.org>

Ohio Certified Volunteer Naturalist (OCVN) Program
<http://ocvn.osu.edu>

Bird Watcher's Digest (headquarters in Marietta)
<http://www.birdwatchersdigest.com/bwdsite>

NATIONAL RESOURCES:

American Birding Association (ABA)

<https://aba.org>

American Bird Conservancy (ABC)

<http://www.abcbirds.org>

Cats Indoors: An initiative of the American Bird Conservancy

<http://www.abcbirds.org/abcprograms/policy/cats/index.html>

National Audubon Society

www.audubon.org

National Wildlife Federation

www.nwf.org

National Wildlife Federation - Residential Wildlife Habitat Certification

<http://www.nwf.org/How-to-Help/Garden-for-Wildlife/Create-a-Habitat.aspx>

The Nature Conservancy

www.nature.org

Cornell Lab of Ornithology

<http://www.birds.cornell.edu>

Cornell's NestWatch

www.nestwatch.org

Partners in Flight

<http://www.pwrc.usgs.gov/pif>

The Great Backyard Bird Count

<http://www.birdsource.org/gbbc>

eBird - Global tools for birders, critical data for science

www.ebird.org

FIELD GUIDES & FEEDING:

Birds of Ohio Field Guide by Stan Tekiela

Birds of Ohio by James McCormac and Gregory Kennedy

Wild Birds Unlimited Store, 5400 Riverside Drive, Columbus, OH, 43220
<http://columbusoh.wbu.com>

Look for other Field Guides by these authors:

Kenn Kaufmann (from Ohio)

Richard Crossley

Roger Tory Peterson

Stokes Field Guides

Sibley Field Guides

National Geographic

Residential Compost Pick-up Service in Franklin County
www.CompostColumbus.com