

GUIDE TO BLUEBIRD CONSERVATION

Once common, the **Bluebird** has shown an estimated 90% decline in numbers over the past 50 years. Causes of this decline include loss of habitat, competition with non-native birds, and possibly pesticide use. In response to this problem, the New York Nest Box Network has been initiated to promote the establishment of new nesting boxes for bluebirds. All existing bluebird boxes across New York will be mapped and any new boxes you construct will expand this Network. We hope this guide provides you with new information and ideas on bluebird conservation and that you have enjoyable and successful results as you begin your own bluebird conservation project.

There are 3 species of bluebirds found in the United States. Only one breeds here in New York, the **Eastern Bluebird** (*Sialia sialis*). This bluebird breeds in both the United States and Canada, east of the Rocky Mountains.

BLUEBIRDS THROUGH THE SEASONS

Springtime

Respect for the bluebird is deeply rooted in American culture. This celebrated bird has long been a symbol of hope and happiness. Because of their early return to the northern parts of their range, the bluebird today remains a symbol of springtime. The lengthening days of late February and March bring with them the arrival of bluebirds in search of suitable nesting sites. The male usually returns before the female and immediately starts searching for several unoccupied cavities or nesting boxes he considers suitable for nesting. Bluebirds are a cavity-nesting species and they nest and raise their young in holes of dead trees, fence posts, or in nest boxes.

Bluebirds are insectivores; they feed on a large number of insects that are harmful to crops (especially cutworms and grasshoppers). An exposed post, wire or branch is used as a perch for scanning the ground for insects. The bluebird will fly down to catch its prey and will return to the original or nearby perch.

Courtship

Bluebird courtship has been described by many as an act of "gentle beauty". Through singing and tail and wing displays, the male urges the female, upon her return, to explore the cavity he has shown her. The male will show the female several sites, and hopefully, she will choose one of them. During this time, the male courts the female through warblings and offerings of choice insects. If the female declines his choice, the male will continue to search for a more suitable nesting site. If she approves, the female accepts him as her mate and the pair will then stay close by until nest building begins.

Nest Building

Nest building may start right away, or the pair may wait up to 6 weeks. The female builds the nest almost entirely by herself. However, the male will accompany her while she collects the nesting material. The 3-4 inch wide nest is made of woven grasses and sedges. It usually takes 5-6 days for the nest to be completed.

Once the nest is finished, the female will lay 3-5 blue eggs. Like other songbirds, one egg is laid each day, usually in the morning, until the “clutch” is complete. Incubation is done only by the female and won’t start until the last egg is laid. This will insure that all young are at the same age and stage of development. While the female sits on the nest, the male will stay close by to defend it from intruders.

In 13-14 days, the young will hatch. Now both the male and female will share in the care and feeding of the small bluebirds. The adults keep a very clean nest and all broken egg shells will be removed and carried away. Food is brought to the young once every 5 minutes from dawn until dusk. Soft insects such as worms and caterpillars are fed at first, then later, shelled insects like crickets are brought. In keeping with their tidy manners, all waste products from the young (called fecal sacs) are removed from the nest and deposited some distance away.

Fifteen to 20 days after hatching (usually 17 or 18), the young bluebirds are ready to leave the nest. Their maiden flight might take them as far as 100 feet away to the nearest tree, shrub or fence. The young, now called fledglings, will remain off the ground for several days to avoid predators. The fledglings constantly communicate with each other and with their parents through soft warbles and notes.

For the first 7-10 days out of the nest, the young are fed by their attentive parents. It takes another 7-10 days for them to be slowly weaned and independent.

If conditions are right, the adults may have 2 to 3 sets of young each season. For these later broods, the parents are often helped in their feeding tasks by young from the first brood.

A Typical Bluebird Nesting Timetable

March 15	Males have returned and have located a nesting site.
March 16-30	Female accepts nesting site and male as mate.
March 31-April 13	Female builds nest, male stays close by.
April 19-23	Female lays eggs (one each day)
April 23-May 7	Incubation: Female incubates eggs while male remains close by.
May 7	Young hatch.
May 8-23	Male and female feed and care for the young from dawn until dusk.
May 24	The young bluebirds leave the nest (clean out all nesting material after they have left).
May 24-30	Male and female feed and protect young.
May 31-June 4	Male and female feed and protect young until they are independent. The female begins to build a new nest. The nesting process is then repeated.

Fall and Winter

Bluebirds keep very strong family ties throughout the summer and fall. In autumn, as colder weather arrives, the families join together to form loose flocks and will then migrate together to warmer areas. Some bluebirds remain in New York throughout the winter, depending on the weather and food supply.

With the colder weather, bluebirds switch from feeding on insects to berries. Winter is a critical time for those bluebirds who remain in New York. Berry-producing trees, shrubs and vines provide much needed food for bluebirds and other berry-eating birds. American holly, dogwoods, cherries, and cedar are among those preferred plants.

Unfortunately, the supply of wild berries has decreased steadily over the years in suburban areas. Planting of berry-producing trees, shrubs and vines will not only provide food for many different species of birds, but are ornamental as well. Planting need not be done only in rural areas, but can be done in suburban and urban areas too.

PREDATORS AND COMPETITORS

Bluebirds have to deal with many natural predators. Several mammals, reptiles and even insects prey on adults, young and eggs of bluebirds. These animals include raccoons, opossums, squirrels, domestic cats, snakes, and a parasitic insect called the blowfly.

The adult female blowfly lays her eggs in the nesting material. The eggs hatch and the larvae attach themselves to the young birds and feed on their blood. The larvae usually attack the nestlings at night and hide in the nesting material during the day. After they have gorged themselves, the larvae burrow deep into the nest and remain there until mature. The pupa are inactive then, and resemble small, brown eggs about 3/8" long.

Bluebirds usually are able to survive the attack of blowflies. Heavily infested nests have more than 100 blowfly larvae in them. Young bluebirds can be seriously weakened if the infestation is heavy. The screen in the bottom of your box will keep blowfly larvae from reaching the young bluebirds.

Many species of birds compete with bluebirds for nesting sites. Several of these are native to the United States, others are not. Many years ago, bluebirds and other native species could find enough cavities to nest in. However, with the growth of urban and suburban areas and changing agricultural practices, many places where bluebirds have traditionally nested have been lost. Dead trees are being cut down, orchards are being pruned and sprayed with pesticides, and old wooden fence posts are being replaced with metal ones.

Competition between the bluebird and the starling and house sparrow for those few nesting places that remain has been a major factor leading to the decline of bluebirds. These two species, both brought here from Europe, are very aggressive and often force bluebirds away from nesting sites. The sparrows, who can enter any hole a bluebird can, can evict a bluebird any time and will even kill the young or the adults. House sparrows can be a particular problem when nesting boxes are placed near buildings. Starlings, although larger than bluebirds, also compete for nesting cavities and food. During the winter, large flocks of starlings can strip plants of their berries leaving nothing for other birds.

Starlings and house sparrows can be aggressive competitors with bluebirds. The starling is most easily discouraged from using a nesting box by making the entrance hole 1-1/2 inches. This prevents them from entering, while bluebirds are small enough to still fit through easily. House sparrows are harder to

control. They are persistent nest builders, but frequent removal of their nesting materials from the box may eventually encourage them to move on.

Remember, it is illegal to remove the nest, eggs or young of any of our native birds. No legal protection exists however for species such as the house sparrow and starling. Also placing your boxes away from buildings will help keep sparrows out since it is there that their numbers are most abundant. You can plug the entrance hole up with wood or tape for several days to discourage the sparrow. Another idea that has met with some success is to attach a small pole to the top of the box and tie a streamer to it so it will sway in the wind. House sparrows seem to be bothered by this movement, while bluebirds will continue to use the box.

Tree swallows, house wrens, chickadees, and white-breasted nuthatches are among those native species who also nest in cavities and compete with bluebirds. You can expect one or more of these birds to use nesting boxes too. These native species are also very beneficial and often face the same problems as bluebirds. Several nesting boxes put up will aid all native species.

Fortunately, bluebirds readily accept artificial nesting boxes. If we can add to the dwindling supply of nesting sites, bluebirds will have more opportunities for successful nestings. Your efforts will make a difference if you set up nesting boxes designed to decrease competition and predation, in the proper habitats.

**Trees, Shrubs and Vines Preferred by the Eastern Bluebird and
Other Berry-eating Birds**

Shadblow Serviceberry	Common Sassafras
Smooth Serviceberry	Mountain Ash
Bartram Serviceberry	Russian Olive
Devil's Walkingstick	Crabapple
Red Chokecherry	Common Chokecherry
Pin Cherry	Autumn Olive
Red Mulberry	Juniper
American Holly	Inkberry
Dogwoods (includes flowering, silky, red, gray)	
Eastern Red Cedar	Huckleberry
Honeysuckle	Hackberry
Common Persimmon	

MOUNTING THE BOX

Where you choose to place the box is really as important as how the box is designed. Bluebirds are birds of open areas. They rarely nest in wooded areas, but will nest in clearings and along woodland edges. Open areas with scattered trees are best. Open fields are suitable if there are posts or wires for perching. Look for any area where the vegetation is kept short by mowing, or grazing such as parks, campgrounds, pastures, large lawns, cemeteries, golf courses and abandoned orchards. This does not necessarily have to be in rural areas, although if it is in a more developed site, it may take longer for the birds to find the boxes.

Proper placement of your nesting box (boxes) can encourage bluebirds and discourage other competing birds and predators. Mount your box 5' high on a pole or tree trunk (not on a branch). Lower than this will increase chances of predation and higher than 5' will encourage house sparrows. Boxes should

be “doubled-up”. For each box placed, erect another one within 10-15 feet. This is the best way to decrease competition for the box by tree swallows. Tree swallows, like bluebirds, are territorial and therefore will not nest close to another tree swallow pair. If you place 2 boxes close to each other and a tree swallow takes over one box, the other one will be left open for bluebirds. Place “sets” of boxes 100 feet apart.

House wrens prefer brushy hedgerows, woodland edges, overgrown fields and thickets. Placement of boxes in these types of habitats will benefit wrens. Keep some boxes in these habitats for wrens and put others in more open areas for the bluebird. Remember, other native species need encouragement too.

To prevent vandalism and excess human interference, try and place the nesting boxes several hundred feet from the road or in less busy areas. You can put sheet metal guards or grease on the pole below the box to prevent predators from climbing up.

Face the box towards a tree, shrub, or pole so the young can fly towards it. Your nesting box should be put up and ready to use by the end of March if possible. If they are put up later than this time, they still should be attractive to bluebirds who are raising their second or third broods. Be patient, it may take several seasons for bluebirds to find your box!

Monitoring the progress of those birds using your boxes is an important aspect of the Nest Box Network. Monitoring the boxes and reporting any information on nesting activity will not only help us learn what species and how many individuals nested in the boxes, but will help us learn how well bluebirds are doing in New York, and will enable us to help further their needs. Monitoring the boxes can be fun and rewarding and will give you the opportunity to enhance your nesting boxes success. Careful observation of the activities at the box will help you learn more about the everyday life of the occupant! Only by monitoring your boxes will you be able to determine if there are problems such as blowfly infestation, predation, or house sparrow occupancy. Then, the proper control measure can be taken.

Opening the box **will not** frighten the birds into deserting the nest. Take a quick look into the box to count eggs or young. During the nesting season, you should check your boxes once a week. However, do not open a side or front-opening box after the nestlings are **12 days old** since this might make them leave the nest too early.

Your box may contain any of the following nests:

1) Bluebird

Neatly constructed of grass, the 4-5 eggs are pale blue or occasionally white. If it has been over 15 days since eggs hatched and you find a well-flattened nest not disturbed, this indicates that the nestlings have fledged. Remove the old nest (only if there is no sign of a new nest being built) promptly because this will encourage bluebirds to nest again in that box.

2) House Wren

The nest is large and made of twigs. The female builds a cup of grasses, plant fibers, hair and feathers. The 6-8 eggs are white, speckled with brown and are incubated for 12-15 days. 2 broods.

3) Tree Swallow

The nest is of woven grass, and lined with feathers. The 4-6 eggs are white. 1 brood.

4) House Sparrow

A mixture of grass, feathers, and trash make up these very large woven nests. Usually there are 5-6 gray-white eggs, speckled with brown.

5) Chickadee

Cavity is lined with wool, hair, fur (rabbit), moss, feathers and cottony fibers. Depth of nest cup is about 1", 6-8 white eggs are spotted with reddish brown concentrated at the large end of egg.

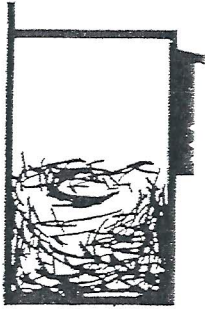
Note: If any sparrows are found, you should remove the nesting materials to discourage them from using this box. House sparrows are very stubborn and you may have to continue this many times before the sparrows search elsewhere. You can cover the entrance hole for a few days to encourage sparrows to search for other sites.

Give your boxes a final check in the fall (or up until February) and be sure to clean out any nesting material or debris you find. Then, your boxes will be ready for the next bluebird occupants.

If you have any questions, contact Doug Kierst at The Cayuga County Soil and Water Conservation District, 7413 County House Road, Auburn, NY 13021; 315-252-4171.

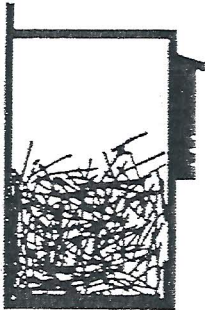
*Originally adopted by The Seneca County Soil and Water Conservation District.

**IDENTIFICATION DIAGRAMS SHOWING
TYPES OF NESTS THAT ONE MAY FIND
IN A BLUEBIRD HOUSE.**



EASTERN BLUEBIRD

Nest - Neatly constructed of grass
Broods - Two per year
Eggs - 4-5 pale blue and occasionally white



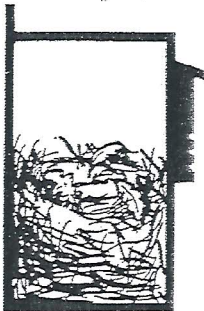
HOUSE WREN

Nest - Twigs
Broods - Two per year
Eggs - 6-8 white speckled brown



ENGLISH SPARROW

Nest - A mixture of grass, feathers and trash
Broods - 2 or 3 per year
Eggs - 5-6 gray-white speckled brown



TREE SWALLOW

Nest - Grass lined with feathers
Broods - Usually one, occasionally two
Eggs - 4-6 white