TEXAS PARKS AND WILDLIFE

Bluebirds in Texas

THIRD EDITION

BLUEBIRDS IN TEXAS

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"If the warble of the first bluebird does not thrill you know that the morning and spring of your life are past."

Henry David Thoreau

INTRODUCTION

Thank you for your interest in the conservation of the wonderful bluebird, and a host of other cavity nesting birds! Included in this publication is information about bluebirds and cavity nesting birds, the proper placement of nestboxes and simple plans for building wood nestboxes should you choose to do so in the future. Our primary goal is to provide a hands-on educational experience in conservation to those interested. By providing extra nesting cavities for bluebirds, we are also providing the same opportunity to our other native cavity-nesters. Other nestbox tenants include Carolina Wren, House Wren, Bewick's Wren, Carolina Chickadee, Tufted Titmouse, Black-crested Titmouse, White-Breasted Nuthatch, Prothonotary Warbler and some flycatchers and woodpeckers.

It is very important to "NestWatch" (monitor and enter observations on www.nestwatch.org) your boxes to determine the birds' nesting results: the number of eggs laid, the number of young fledged, the number broods per box, and the species using each box. By monitoring regularly you help prevent predation and/or competition from other species, including House Sparrows, European Starlings, wasps, fire ants, blowflies, cattle, raccoons, opossums, house cats or feral cats and even vandalism. Weekly monitoring will not cause the birds to abandon the nest. Collecting and reporting to NestWatch, a massive database housed at Cornell Lab of Ornithology, the information on cavity-nesting birds enables us to better manage and care for the birds; enables scientists to study climate change; and, provides secure electronic storage of your nesting records for years to come.

A great source for information on Texas cavity nesting birds is the Texas Bluebird Society (www.texasbluebirdsociety.org). Their mission is "To spread 'Bluebirds (and other native cavity-nesting birds) Across Texas ... one nestbox at a time' — through education; and, the installation of "NestWatch'd" nestboxes in appropriate habitat; and, sustaining and increasing their natural food supply (insects and berries of native plants) — while enjoying the process and the bluebirds."

A CELEBRATION OF BLUEBIRDS

Bluebirds are traditionally viewed as symbols of hope and happiness. It's not hard to understand why. You can't deny it; bluebirds are exquisitely beautiful. Those iridescent blue colors are surpassed only by sound. The bluebird's song is at once lilting and mellifluous—a gentle warble that exudes a sense of peace and tranquility to all who hear it.

Bluebirds shun forests, preferring open country, orchards, roadside trees and cut-over woodlands with tree cavities for nesting. Should they take up residence on your property, be assured these beautiful birds are not free-loaders. Whether as seasonal guests or permanent residents on your land, bluebirds pay their rent in kind. Males, females and young alike devour masses of insects, assisting in the control of these pests.

Ideal parents, the birds raise their young with tender devotion and abiding care. Both male and female share in parental duties. Perhaps most disarmingly of all, bluebirds form friendly, trusting bonds with the people who monitor their nests or provide for their needs.

Hosting bluebirds in your yard offers the homeowner a unique opportunity—the ultimate hands-on, up-close-and-personal experience in wildlife conservation. There is no better way for your children to explore the delights of the natural world and learn about its intricacies than to teach them to care for their bluebird charges. Young and old alike will reap hours of satisfaction from this intimate contact with nature. Rewards for the bluebirds are even greater—bluebirds not only accept our help; they need it.

HISTORY OF EASTERN BLUEBIRD POPULATIONS

Once widespread and thriving throughout much of the eastern and central United States and southern Canada, bluebird populations started to decline in the early to mid 1900s. Among the factors cited for this decline are:

- the scarcity of natural nesting cavities,
- a change to metal fence posts,
- widespread habitat change including the disappearance of fruit orchards that once furnished nesting sites,
- the prevalent use of certain pesticides and
- the ill-advised introduction of the non-native and invasive House Sparrow and European Starlings. These birds have thrived at the expense of many of our cavity nesters by outcompeting for nesting sites and raiding nests, killing both young and adult birds.

Severe weather also took its toll on bluebird populations in northern regions. Bluebirds are early migrants, sometimes paying a terrible price for their eagerness to fly north and establish breeding territories. Spring sleet storms that coat berries with ice for two or three days at a time can prevent the birds from foraging on their principal source of food during cold weather.

As early as the 1920s, conservation-minded individuals realized that something needed to be done to preserve this rapidly disappearing songbird. In 1934, Thomas E. Musselman and William G. Dunlap developed the concept of a "bluebird trail" and designed a basic bluebird nestbox that could be set up in appropriate habitat and periodically monitored to help increase breeding opportunities for this open country bird. Since then, thousands of volunteers have been enlisted to perform monitor duties, supplying nestboxes and faithfully monitoring bluebird trails.

Today, bluebird trails can be found throughout the United States, benefiting all three native bluebird species: the Eastern, Western and Mountain Bluebirds. These boxes are also used by other desirable native cavity nesting species, such as wrens, chickadees, titmice and certain species of swallows and flycatchers. While some people question whether a nesting box program can really help safeguard a species, most authorities express optimism, citing the successful return of the wood duck from near extinction in the 1930s.

MEET THE BLUEBIRDS

Family: Turdidae – the Thrush family. Formerly lumped with the Musicapidae, the Old World Flycatchers, the Turdidae or thrushes, have been returned to full family status. Thrushes are medium-sized birds with long legs and a rather slender bill. Many members, like the wood thrush and hermit thrush, have a plump appearance, are brownish in color, with spots on their breast. Bluebirds, solitaires and robins are all closely related, but only the youngsters have the tell-tale spots on their breast, which they lose with their first molt. Thrushes boast some of the finest of all avian singers – the nightingale being perhaps the most celebrated.

EASTERN BLUEBIRD

Scientific name: *Sialia sialis (Linnaeus)*

Description: Silhouette on wire or tree limb, though generally upright, may appear hunched and round-shouldered. Their large dark eyes give them an expressive face. The male is blue above with rusty throat, breast and flanks. Belly and undertail feathers are white. Though the female is much duller and paler below, she is immediately recognizable. From tip of beak to tip of tail, the bluebird measures 6-1/2" to 7-1/2", with a wingspan of 11-1/2" to 13". Juveniles are grayish-brown with a speckled white breast and a tinge of blue on wings and tail.

Voice: The ordinary note of the Eastern Bluebird is a two-syllable call, often represented by Tru-ally or Cher-wee which is uttered repeatedly during flight or when perched. The bird also delivers a relatively harsh alarm note. Its musical song is a mellow series of soft double Cheu-ry notes, very pleasing to the human ear.

Range: The Eastern Bluebird occurs east of the Rockies from southern Canada to the Gulf States, and south through Mexico to Honduras.

WESTERN BLUEBIRD

Scientific name: *Sialia mexicana*

Description: Similar to the Eastern Bluebird, the Western Bluebird sports a deep purple-blue throat and upper parts with a chestnut-colored breast, sides and flanks. The belly and undertail coverts are grayish. There will be chestnut color on the shoulders and a crescent of chestnut on most birds' backs. The female is a duller grayish brown with some chestnut on the breast and flanks.

Voice: The soft call of the Western Bluebird, often accompanied by a chuck note, is described as a phew or few. When singing, their subdued song sounds like cheer, cheer-ly, churr.

Range: Rocky Mountains west to the coast from British Columbia to central Mexico, it ranges into the central plains to eastern Colorado, New Mexico, the Panhandle and West Texas. This bird can be found in the Hill Country and Central Texas during the winter months.

MOUNTAIN BLUEBIRD

Scientific Name: *Sialia currucoides*

Description: Lacking the chestnut red coloration of the Eastern and Western Bluebird, the Mountain Bluebird is sky blue above with paler blue breast and flanks—white belly and undertail coverts. Female is brownish gray overall with white belly, undertail coverts and edges on the wing coverts creating a scalloped effect when closed. In fresh fall plumage the females breast and throat may appear red orange.

Voice: The thin "few" call and low warbling tru-lee song are typical of the mountain Bluebird.

Range: Rocky Mountains west to the Pacific coast from Alaska to central Mexico. Ranges into the central plains in Eastern Colorado, New Mexico and West Texas. Winter range may include Central Texas at times.

GENERAL BLUEBIRD INFORMATION

Migration: Partially migratory, these birds withdraw from the northern portions of their ranges in winter. Birds migrate in loose flocks, historically in quite large groups. Males are usually the first to return to the breeding grounds, although males and females may return together. Some bluebirds remain close to their breeding site year-round.

Preferred Habitat: The bird occurs on both uplands and bottomlands—almost everywhere except treeless prairies, deserts and deep, dense forests. Favorite haunts include pine-oak and other open woodlands and their margins, forest clearings with scattered trees, woodland groves and meadows. They are especially fond of fence-rows, railroad and highway rights-of-way, orchards, fields and clearings around farmhouses, even suburban yards and parks. They use old woodpecker holes and natural or human-made cavities in trees and posts as nesting sites. They come readily to nestboxes.

Territory Size: Depending on habitat quality, bluebirds utilize from 2 to 25 acres. The breeding territory is established by the male and defended by both male and female.

Feeding Behavior: Bluebirds feed mainly on insects which they collect from the ground or glean from foliage. They will also hawk insects from the air, sallying from their perch and catching them in mid-air. They are most often seen dropping to the ground from a high perch and poring over it for grasshoppers, spiders and beetles. They depend on berries and other fruits to supplement their insect diet during the winter months.

Nesting Season: Nesting occurs mid-February through July, sometimes (though rarely) into September.

Preferred Nesting Sites: After the male has established the territory, he will lead his consort to several nesting sites. The female makes the final choice. She indicates her acceptance by flying into the cavity of the nest site she has selected. Preferred sites from 2' to 30' above ground include deserted woodpecker holes, untreated rail fence posts and nestboxes.

Courtship and Mating Behavior: Bluebirds are usually monogamous with one male paired with one female. Some pairs remain together for another year, especially if nesting efforts have been successful. Though rare, polygamy has been documented. It is touching to observe the close and tender relationship between the male and female as he guides her to nesting sites and feeds her during courtship and incubation. Courtship displays include jubilant song, as the male flutters in front of the female, wings half open and tail elegantly spread. He will then perch beside her and preen her. He will often offer her a "courtship" feeding, a delectable insect or choice grub. The male also performs a special "wing wave" display and pokes his head in and out of a potential nest hole. If the female flies inside the hole, especially while the male is still inside, she is indicating she is pleased with the nest site. Once nest building gets underway, though, she can become dominant!

Nest: While the male may bring occasional bits of nesting material, the female takes full charge of building the neat, cup-shaped nest. Depending on the region, nesting materials may include grass, pine needles, twigs, straw, rootlets, horse hair and feathers. The nest is built in from four to seven days.

Eggs: Eggs are oval and glossy, usually pale blue to greenish, occasionally white and unmarked. Eggs are laid one per day before mid-morning. Eggs hatch over a period of one day in the same order in which they were laid. "NestWatch" checking is not advised on mornings when the female may be depositing eggs.

Clutch Size: From three to six, commonly four to five.

Number of Clutches and Broods: If all goes well, bluebirds may successfully raise 2 to 3 broods of young each year. At no time should you handle eggs or birds during the nesting period. After fledging, birds should be handled only when no other option is available.

Incubation: Incubation usually begins only after the last egg has been laid, and will last 12 to 18 days (average 13). Since the female alone has a brood patch to keep the eggs warm, she undertakes this responsibility alone. During incubation she is fed by the male though she may leave the eggs for a brief period to feed, but will return with no harm to the eggs. Since incubation begins on the same day, eggs generally hatch at about the same time.

Nestlings: Baby bluebirds, called nestlings are about as ugly as they one day will be gorgeous. After eating or carrying away the broken shells, the female will brood the young to keep them warm for the first few days. Once their feathers begin to develop, the nestlings can regulate their own body temperature. Both parents bring food to feed the nestlings. Fecal sacs are removed by both male and female, eaten in the early stages, carried away and dumped far from the nest later on. Young grow fast. By the twelfth day, they weigh almost as much as their parents do.

Fledglings: Young generally fledge when they are 17 to 20 days old. It is most important not to disturb the nest at this time, for if the young fledge prematurely, it is at great risk to their survival. Fledging is preceded by the parents feeding the youngsters less and less, "teasing" them with juicy tidbits of food but not delivering it, in an effort to coax them out of the nestbox. Pressed by hunger, the youngsters take the plunge – their first flying lesson, their first solo. Each youngster will make a direct flight, hopefully to a fence rail or tree limb nearby on the first try. They are capable of flying from 75 to 100 yards the first time. Parents continue to feed them, once they locate them. Fledglings let their parents know where they are by calling from the treetops where they hang out to avoid ground predators. The male will take over these feeding duties if the female starts in on a second brood. The fledged young from the first brood will sometimes return to help feed the nestlings of the second brood. Once the fledglings leave the nestbox, they do not return – even in inclement weather. The newly fledged bluebirds seek refuge high in the trees and are completely dependent on their parents for food for several days.

AMAZING FACTS ABOUT BLUEBIRDS

- Colorado and Texas are among the few places where all three species of bluebird, the Eastern, the Western and the Mountain, nest. Western Bluebird nests here only rarely.
- There are records of several hybrids of Eastern Bluebirds with both Western and Mountain Bluebirds where their ranges overlap.
- The first flight of a baby bluebird is truly astounding. Never having flown before, the fledgling ventures out of the nest hole and flies to a nearby limb.
- On occasion, female bluebirds will lay their eggs in the nests of other females, a behavior known as egg-dumping.
- Both Missouri and New York claim the Eastern Bluebird as their state bird.
- Bluebirds have been clocked at flying speeds of 17 to 18 miles per hour.
- While a male bluebird doesn't assist with nest construction, he helps feed the nestlings and often takes full charge of the first brood should the female start laying a second clutch of eggs.
- On cold nights, bluebirds welcome warm, dry roosting sites to escape the cold. As many as 25 bluebirds have been known to huddle together in the same box.
- Bluebirds have occasionally been observed to dine on treefrogs and small lizards, when available.
- White bluebirds exist in nature at a frequency of 1/2 of one percent. Complete albinos are the rarest and also the most vulnerable to predation, disease and harassment from their own kind.
- About 7% of bluebirds lay white eggs.

FEEDING BLUEBIRDS

Fruits and berries are favorite menu items in the fall and winter when insects start to wane during cold weather. Landscaping with native species of fruiting vines, shrubs and trees provides a welcome source of winter carbohydrates for bluebirds that remain in your area year-round. Plant natives in your yard and watch the winter feasting begin. Some proven bluebird plants include American Holly, Eastern Red Cedar, Red Mulberry, Red Chokecherry and wild grapes.

Good sources of information on developing effective wildlife habitats can be found in Kelly Bender's *Texas Wildscapes: Gardening for Wildlife* and Stokes *Planting for Wildlife*.

Providing bluebirds with extra food is particularly important in early spring when the birds first return to your area. At this time, natural food sources may be scarce. Natural insect eaters, the bluebirds will benefit from a container filled with mealworms.

February and March are critical months for cavity nesting birds. The foods you provide may help them through severe weather and keep the population healthy until spring food is available.

GETTING READY

January is the time to clean and repair your nestboxes so they are ready before the arrival of courting bluebirds. It is a good idea to clean them out after the last brood of the season has fledged at the end of the summer, but it is not too late to do it now. Inspect your boxes carefully. Check and make sure no mice have used them during the winter months. Mouse droppings and urine can foul the nestboxes. Repair damage done to the nestboxes, especially any that may have enlarged the entrance hole or destroyed the integrity of the box. If last year's box is too weather-beaten from use, discard it and build or buy another.

Bluebirds begin nesting as early as mid-February depending on your location. Make sure that you have securely mounted your nestboxes so that they will stand up to stormy weather and the general wear and tear of an active nesting season. Install predator guards to keep out snakes, raccoons and other unwanted visitors. Good resources with easy to follow instructions for predator control can be found on the Texas Bluebird Society Web page at www.texasbluebirdsociety.org

As a nestbox weathers (becomes darker), it becomes an oven in the sun. Any nestbox that does not have afternoon shade should be painted a light color and/or have a set of "heat shields" added. A set of heat shields can be made from recycled election signs. Cut sections of the sign to match the size of the top, back, and sides (a shield for the front is optional, assuming the nestbox is not facing west). Using snipped 1/2" sections of small diameter PVC tubing as spacers and 3/4" screws*, attach the white corrugated pieces to the nestbox. The white surface and airflow will dramatically cool the interior of the nestbox.

*If your nestbox is rear-mounted, the four screws and four spacers for the back need to be longer.

GUIDELINES FOR SETTING UP A BLUEBIRD BOX OR TRAIL

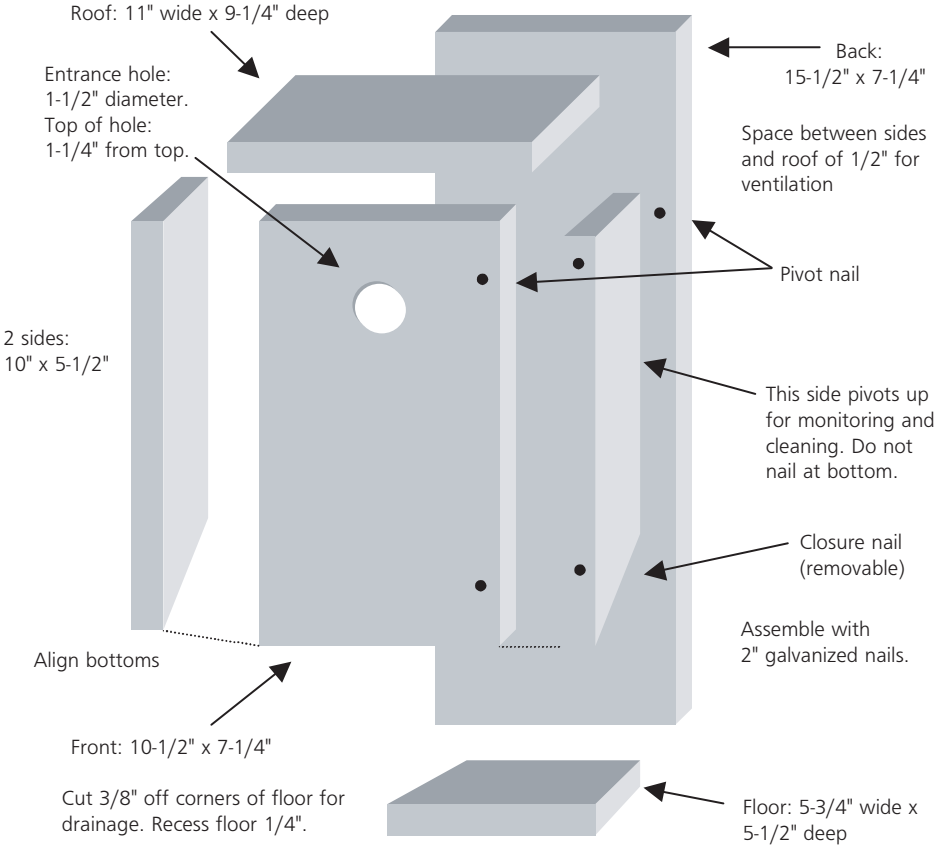
Whether you have one box or several, follow these simple guidelines for locating and mounting your nestboxes. You do not have to have a long bluebird trail with many boxes in order to attract bluebirds. A single well-placed nestbox will do the job. If you have the time and sufficient acreage, more boxes may attract more bluebird families.

1. The most important factor in attracting nesting bluebirds is to set your nestbox up in proper habitat. Bluebirds nest primarily in suburban and rural areas, although they are nesting in urban situations in Dallas County and other areas across the United States. They tend to shy away from environments with heavy concentration of House Sparrows, which are serious nest site competitors. Bluebirds prefer sunny openings with several perch sites like you would find around parks, cemeteries, abandoned orchards, pastures, hike-and-bike trails, rural meadows and gardens, along country roads and woodland openings. During the breeding season, bluebirds hunt insects by scanning the ground from an elevated perch. Open areas with short-cropped grass make prey items easier to see. Perches are extremely important to several bluebird activities including advertising territory and attracting a mate, surveillance for intruders or predators, courtship interactions and pair bonding and foraging behavior.
2. Avoid setting up boxes near areas that have been sprayed with insecticides. Golf courses can be good places to set up boxes if they are treated only with herbicides and then solely on the greens and not the surrounding areas. Contact the management staff to ascertain what treatment protocol is followed.
3. Don’t place your nestbox too close to woody, brushy areas if bluebirds are your target species. This makes them attractive to various species of wrens. All wrens are protected species and valuable in their own right. They will compete with bluebirds, especially in their favorite brushy habitats. Placing boxes 100' away from dense, shrubby cover will make the boxes less attractive to wrens.

4. Don't place boxes in areas where people are apt to tamper with them. While bluebirds are not shy about setting up housekeeping near people, inadvertent or deliberate vandalism could be disastrous to the young birds.
5. If your area is heavily populated with house sparrows, your bluebirds will not succeed without your help. You must guard your charges assiduously against these aggressive pests.
    a) Do not place your nestboxes close to farmsteads, feedlots, barns or outbuildings where House Sparrows are present.
    b) Capture House Sparrows that are using your nestboxes and, once you are sure of the species identification, destroy them humanely or donate them to a raptor rehabilitator. These birds are a serious threat to many of our native cavity nesting species.
    c) Monitor your nestboxes regularly and remove House Sparrows and their nests early and aggressively.
    d) Remove House Sparrow habitat with careful feeding programs and removal of roosting and nesting sites.
6. If you want to set up boxes on someone else's land, be sure to get permission first. You may even be able to get them excited about the prospect and involve them in monitoring activities.
7. The most often asked question is how high to mount nestboxes. Mount them as high as possible while still being able to access them for cleaning and monitoring purposes. This, of course, will depend on how tall the shortest member of the "monitoring team" is, and whether your box opens from the front, side or top. Some people use foot stools or other devices. If you don't, the base of the box should be 5' or 6' from the ground.
8. Another frequently asked question is whether it makes a difference which direction the box faces. Biologists recommend you mount the boxes so the entrance hole points away from the hot afternoon sun and faces away from prevailing winds—north, northeast or east are best.

9. If you set up your boxes near cattle pastures, make sure the animals cannot rub up against the boxes to scratch themselves. There have been several incidences of cattle knocking nestboxes containing eggs and/or fledglings to the ground.
10. Mount your box near some convenient perch, a fence or tree limb – some low object within 60' of the box to receive youngsters on their first flight from the nestbox.
11. Use galvanized steel poles of 1" diameter or less to mount your boxes. T posts, wooden poles and other traditional supports are all easily negotiated by a wide variety of predators. Mounting the steel pole over a 4-foot length of rebar makes it more difficult for predators to climb. Drive the rebar 2 feet into the ground and slide the pole over it. Secure the nestbox to the top of the pole.
12. Climbing guards deter the "Big Three" bluebird predators: snakes, cats and raccoons. There are various styles and strategies.
13. Spacing is very important as bluebirds are highly territorial during breeding season, and need territories of about 2 to 3 acres per pair. Spacing the boxes at least 100 yards from the next will avoid constant territorial disputes among competing bluebird pairs and should give each bluebird family enough "real estate" to sustain its young. Often though, other species of cavity nesting bird will use nestboxes placed between bluebird boxes. If you decide to feed your bluebirds, boxes can sometimes be set up closer together.
14. Conserve snags. If your property has potential sites for natural cavities, don't remove them. They serve as splendid avian housing facilities for many primary and secondary cavity nesting species.
15. Keep the vegetation low around the box. If weeds grow up high around the birdhouse, prune them. Sparse vegetation around the nestbox facilitates feeding activities. This is very important when adults are feeding hungry, demanding nestlings and need to find food fast.

WELL-VENTILATED TEXAS NESTBOX



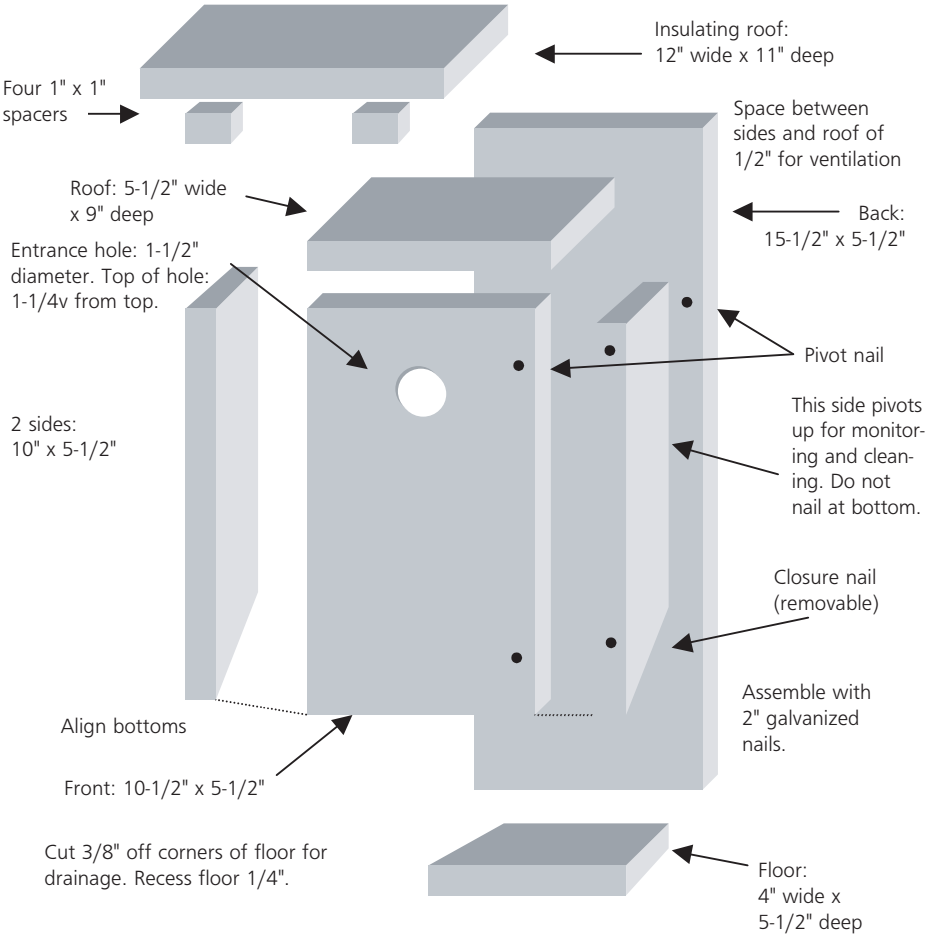
Tools: Hammer, saw, drill with 1-1/2" hole bit

Materials: Treated lumber should NEVER be used for wildlife materials.
Lumber: 2'3" of 1x6 (actual dimension 3/4" x 5-1/2"), 2'3" of 1x8 (actual dimension 3/4" x 7-1/4") and a 11" piece of 1x10 for roof.
Nails: 2" galvanized (or 1-1/2" wood screws if preferred).

Directions:

- Cut the 1x6 lumber into two 10" (sides) and one 5-3/4" (floor)
- Cut the 1x8 lumber into one 10-1/2" (front) and one 15-1/2" (back)
- Cut the 1-1/2" diameter entrance hole in the front piece with the center of the hole 2" from the top edge.
- Attach the non-pivoting side piece to the back so that its top edge is 2-3/4" below the top of the back.
- Attach the pivoting side piece to the back by nailing at the top only (the pivot nail).
- Attach the front piece, with the bottom edge aligned with the bottom edge of the side pieces. Nail the pivoting side at the top only (the pivot nail).
- Cut 3/8" off the corners of the floor for drainage and attach the floor, recessing it 1/4".
- Attach the flat roof 1-1/4" down from the top edge of the back piece. **The roof will be attached to the back and front only.** The sides are 1/2" shorter, providing a gap for ventilation. The roof will extend out approximately 3" in front and 2" on the sides for rain protection.
- Attach appropriate mounting hardware.

DOUBLE-ROOFED TEXAS APPROPRIATE NESTBOX



Tools: Hammer, saw, drill with 1-1/2" hole bit

Materials: Treated lumber should NEVER be used for wildlife materials.
Lumber: 5'6" of 1x6 (actual dimension 3/4" x 5-1/2") and 12" of 1x12 (actual dimension 3/4" x 11") for second roof.
Nails: 2" galvanized (or 1-1/2" wood screws if preferred) and 3" galvanized (for second roof).

Directions:

- Cut the 1x6 lumber into two 10" (sides), one 10-1/2" (front), one 15-1/2" (back), one 4" (floor), one 9" (roof) and one 1" (cut into 4 spacers for second roof).
- Cut the 1-1/2" diameter entrance hole in the front piece with the center of the hole 2" from the top edge.
- Attach the non-pivoting side piece to the back so that its top edge is 2-3/4" below the top of the back.
- Attach the pivoting side piece to the back with one nail at the top only (the pivot nail).
- Attach the front piece, with the bottom edge aligned with the bottom edge of the side pieces. Nail the pivoting side at the top only (the pivot nail).
- Cut 3/8" off the corners of the floor for drainage and attach the floor, recessing it 1/4".
- Attach the flat roof 1-1/4" down from the top edge of the back piece. **The roof will be attached to the back and front only.** The sides are 1/2" shorter, providing a gap for ventilation. The roof will extend out approximately 3" in front.
- Use 3" nails to attach second roof with 4 spacers for ventilation between primary and secondary roof.
- Attach appropriate mounting hardware.

COMPETITORS AND PREDATORS

Bluebirds have many competitors and predators. Predation is a normal process in nature, but there are many precautions you can take to reduce the chances of predation on your bluebird nestbox or trail.

House Sparrows: This pesky Old World weaver finch was introduced to the United States in 1853. The Brooklyn Institute released a few dozen imported birds into New York's Greenwood Cemetery. The newcomers spread westward at an incredible rate. By 1900, they were one of North America's most common birds. They are aggressive predators of bluebirds and have been known to enter a nestbox and kill both young and adults alike. They have been observed pecking and/or removing bluebird eggs. Though the task may seem unpleasant, removing these pests is the only way to deal with them.

European Starlings: In 1890, a New York drug manufacturer named Eugene Scheifflin released 60 European Starlings in New York's Central Park. It seems that William Shakespeare mentioned starlings in a play and this misguided individual wanted America to have all the birds referenced by the great playwright. By 1940, millions had spread across the country, evicting bluebirds, woodpeckers and other native cavity nesting species in their wake. By virtue of their sheer numbers, they can consume an inordinate amount of the food supply that might otherwise be available to native species of birds. Both starlings and House Sparrows are very aggressive, and will usually take over any cavity they can enter. They invariably out-compete bluebirds in territorial disputes, ousting them in short order.

Domestic and Feral Cats: Cats are supreme predators of birds, whether they are hungry or not. They can climb posts, reach into nestboxes, grabbing nestlings and brooding females alike; they even sit on top of the box waiting the return of the adults. This is especially deleterious when adults are feeding nestlings. If you have a cat, confine it to the house and use

predator guards on the nestbox pole. Feral cats should be live-trapped and taken to the humane society. For more information on cats and wildlife, see www.tpwd.state.tx.us/publications/pwdpubs/media/pwd_lf_w7000_0658.pdf

Snakes: Rat snakes and bull snakes are serious bird predators, devouring both eggs and young. They can easily climb poles, even those that are greased. You can suspect snake predation when you monitor the nestbox and find an empty nest with no sign of disturbance. Using a predator guard is an effective way to deter them. There are also special snake traps available.

Raccoons: Raccoons climb onto nestboxes at night and devour eggs, young and even adult birds. If you monitor the nest and find nesting material sticking out the entrance hole with eggs and nestlings missing, you can suspect the work of a raccoon. If there are raccoons in your area, it is important to use predator guards on the poles or entrance hole extensions. Opossums and weasels are also capable of climbing onto nests and eating eggs and young, while various species of squirrels sometimes enlarge nest holes by gnawing at the entrance so they can use it for themselves.

Hawks: Sharp-shinned or Cooper's Hawks will sometimes prey on adult and/or fledgling bluebirds. Kestrels have also been observed taking young bluebirds. To protect against hawk predation, place the boxes away from power lines and other perches above the box. Hawks will use these perches to dive down and take the birds by surprise.

Wasps and Yellow Jackets: Wasps may build their papery nest on the ceilings of nestboxes in early spring. Check under the roof of your nestbox during cool weather when they are too cold to move quickly. You might use liquid hand soap on the ceiling of the box to prevent them from attaching the nest. Use of pesticides around a nestbox should be avoided when possible. Remove the dead wasps in the morning.

Fire Ants: Fire ants are a common problem for people and birds alike in Texas. The safest way to control fire ants on a bluebird nestbox trail is to install a strip of tanglefoot as high as possible underneath the predator guard. Do not use tanglefoot without the predator guard to cover it since many native birds will perch on a vertical pole.

PREDATOR CONTROLS

PREDATOR BAFFLE

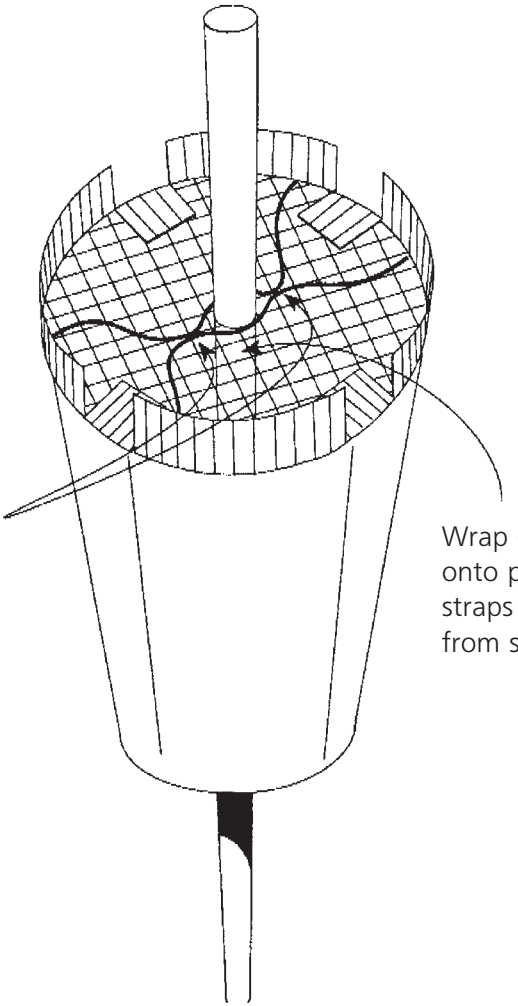
Using tinsnips, shape hardware cloth into a circle, making a small cut in the center to fit over the mounting pole. Bend the edges of the hardware cloth down and slide it snugly into the stovepipe. Cut four tabs on the top end of the stovepipe. Bend them inward, over the hardware cloth.

Bolt the hanger iron straps together in the center, around the mounting pole. Bend the free ends outward to support the hardware cloth. A few wraps of electrical tape below the strap attachment will keep it from slipping down the pole. Slide the stovepipe assembly over the top of the mounting pole, resting it on the hanger straps.

Plan design by Ron Kingston, Sialia 13(2):56–57
Art reference from "Enjoying Bluebirds More" in
Bird Watcher's Digest (1-800-879-2473)

MATERIALS LIST

Galvanized stovepipe	8" diameter x 24-36"
1/2" hardware cloth	8" circle
3/4" galvanized pipe for mounting	7' long
Hanger iron strips (2)	8" long
Hardware	(2) #8–32 x 3/4" machine screws and nuts



Bolt hanger iron straps around mounting pole using #8-32 x 3/4" machine screws and nuts.

Wrap electrical tape onto pole beneath straps to keep them from slipping down.

MONITORING GUIDELINES

NestWatch is a continent wide citizen-science project and nest-monitoring database of the Cornell Lab of Ornithology, funded by the National Science Foundation and developed in collaboration with the Smithsonian Migratory Bird Center.

As you begin monitoring bluebirds in your garden, please review the "Nest Monitor's Code of Conduct" by Cornell University Lab of Ornithology at www.nestwatch.org/downloads/ for guidelines. Cornell is seeking more data on cavity nesting birds. The information you report to the NestWatch database is valuable data that will be used by scientists. Texas Bluebird Society will be able to access and use the data to glean Texas specific information about cavity nesting birds, and NestWatch will keep records of each visit to your nestbox from year to year, which you can then upload for your own use. Please see www.nestwatch.org/downloads/ for the data sheet they use.

If you cannot participate in NestWatch, at least keep your own records, so that you know you are contributing to the success of these birds.

It is important to "NestWatch" your nestboxes every 4 to 5 days (or, weekly) and to report to www.nestwatch.org the progress of any nests or young birds. One purpose of NestWatch-ing is to keep House Sparrows from using the boxes and to check on the general well-being of the bluebirds and their young. Recording detailed written records of the birds' progress is important; don't trust your findings to memory for a later date. Carry your NestWatch form with you or a pad and paper. Once you transfer data into NestWatch, you need not keep your notes. Periodic NestWatch-ing will not cause the birds to abandon their nest if you do it properly. NestWatching should include:

1. To NestWatch a nestbox, proceed quickly and quietly to the box. Tap on the box first and speak softly, just in case the female is still inside. This will give her a chance to fly out. Then, open it up and look inside. Sometimes an incubating female will remain on the nest while you check. (If she remains, come back later to observe the nest.) Bluebirds are amazingly tolerant of humans. Leave the nestbox following a different path, establishing a circuitous route so that you do not leave a scent trail directly to the nestbox.

2. Do not check nests at or after dusk, when females may be returning to the nest for the night.

3. You may discontinue monitoring a few days before you expect the birds to fledge and check from a distance with binoculars to determine if parents are still actively feeding the young. This will ensure that youngsters which are not ready to fledge won't bolt from the nest prematurely. Or, block the hole with a handkerchief and check quickly and carefully. By NestWatch-ing until the birds fledge, you may catch a potential disaster before it happens (for instance, fire ants entering the nestbox).

4. Stay alert—bluebirds and other species usually raise more than one brood per season. If possible, keep monitoring nests to the end of the season, July or August. Use a separate datasheet for each new nest attempt.

5. Be tireless in your removal of House Sparrows and their nests. House Sparrow nests are much sloppier than bluebird nests and are littered with cellophane, feathers, weeds and fecal material. Be careful not to remove the nests of native species such as chickadees, titmice, tree swallows, wrens or ash-throated flycatchers. These species are protected by law and are valuable in their own right. Texas Bluebird Society's publication, "Nests, Eggs, & Nestlings" is a helpful guide to identifying cavity-nesting birds by their nests and eggs. Your best clues will come from identifying the birds that fly in and out of the entrance hole.

6. If you have more than one box, number or name them. Numbers or names should be written on the outside of the box so that records can be kept straight.

7. When problems arise you will have to do some trouble-shooting. If predation has occurred, try to figure out who the culprit is and take protective measures to prevent its reoccurrence. If you see a dead youngster in the nest, remove it if the other nestlings are still alive. Sometimes females will abandon the nest and leave eggs unattended. Only the female can incubate the eggs, she alone has a brood patch; the male does not and cannot keep the eggs warm. Once the young have hatched, however, the male can bring them up alone. Watching the abandoned nest for at least a 4-hour period is the only way to tell whether it has been abandoned by the female. If it has been abandoned, call a bird rehabilitator or Animal Rescue. Only these people are licensed to raise young birds. A list of licensed wildlife rehabilitators can be found at: www.tpwd.state.tx.us/huntwild/

8. You may wish to remove the old nest when all the young have fledged, to keep the subsequent nest at the bottom of the box, where it is the safest. If removed, don't leave old nests nearby as they will attract predators to the next nesting attempt. At the end of the summer, when the last brood has fledged, you can clean out the box for the year. Do not plug the holes at this time, but leave them open so that bluebirds and other cavity nesters (including bats) can roost during cold winter nights.

An excellent source of information about monitoring nestboxes is *The Bluebird Monitor's Guide* published by Cornell Lab of Ornithology and the North American Bluebird Society in 2001

Research on Your Trail

Use the NestWatch form and report data through www.NestWatch.org. Remember that regular "NestWatch-ing" will not cause birds to abandon their nests. Please monitor in the afternoon before dusk, since egg-laying usually occurs in the morning.

NestWatch form: www.nestwatch.org/downloads/

PROTECTING OTHER NATIVE SECONDARY CAVITY-NESTERS

Some people are somewhat disappointed when the birds that use their nestboxes are not Eastern Bluebirds. While it is important to remove House Sparrow and European Starling nests as often as they are found, you must never remove the nests of chickadees, wrens, titmice or flycatchers. Like the Eastern Bluebird, these species perform valuable ecological services and are protected by law. They have also suffered from an over-proliferation of House Sparrows, habitat modification and loss of natural cavities, and so deserve our protection. Place a house for Bewick's or Carolina Wrens close to brushy habitats. Boxes with smaller holes will be sought after by chickadees and titmice. Entrance diameters of 1-1/4" will allow only chickadees, titmice and House Wrens in. House Sparrows will not be able to pass through this size entrance hole.

OTHER POSSIBLE NESTBOX TENANTS

Carolina Chickadee: Black-capped and black-bibbed, this agile gleaner of insects and snatcher of seeds is a delight to behold. Speaking its name to announce its presence, this bird will nest in deserted woodpecker holes and other tree cavities in your yard. It will also nest in a nestbox. Mounting a special box just for chickadees with an entrance hole of 1-1/8" will increase the likelihood bluebirds will nest in the 1-1/2" holed box. Chickadees also prefer their boxes in more wooded areas.

Tufted Titmouse and Black-crested Titmouse: With perky black crests and jaunty air, these small members of the tit family are all business and efficiency at a feeder. Quick learners and problem solvers extraordinaire, the titmice will be the first to learn how to negotiate a new feeder. These small birds are a joy to watch when raising their young in a nestbox. Putting up a special box for them from 6' to 15' above the ground in a less open area than that preferred by bluebirds, may help you get both species as nesters.

Carolina Wren: Dressed in rich rufous with a golden ochre breast, the Carolina Wren sings gloriously for its supper, an enticing array of insects, with caterpillars a special treat. This bubbly bird has a fondness for nesting in hanging baskets. A varied repertory of scolds and calls keeps homeowners aware of nesting progress. Enthusiastic songsters, they will also gladly accept nestboxes to rear their young. They like to remain close to brushy habitats, though. A nestbox placed in open areas will not be particularly attractive to them.

Bewick's Wren: The Bewick's Wren combines timidity, curiosity and aggressiveness, as it peaks out surreptitiously from a thick vine cluster to size up the situation. With its long, fan-shaped tail twitching, this active bird searches out insects along fences, tree limbs and underneath the eaves of buildings. Very eclectic in their taste for nest sites, pairs have been known to nest in baseball caps, vest pockets, mailboxes, large tin cans and old woodpecker holes. They will nest happily in a nestbox. Like the Carolina Wren they prefer to be close to brushy areas. The five to seven white eggs are spotted with brown. The male's song is sweet and powerful, varying slightly by region.

House Wren: A jaunty bird, the House Wren is a bustling bundle of nervous energy. Males arrive before females on the breeding grounds, giving them time to seek out low, wooded tracts and brushy spots at the edge of a yard. The male is a compulsive nest starter and will stuff any likely nesting hole with grass, twigs and moss to attract a mate.
The female almost always chooses the final nest site. Once she starts incubating eggs, the lusty home-builder may take up with another female. Nest sites have included bleached cattle skulls, appropriated hornet and wasp nests, soap dishes and deserted woodpecker holes. They will gladly accept a nestbox. Placing a special wren house with a 1-1/8" hole is a way of attracting these adaptable birds away from your bluebird box, while still allowing you to enjoy the male wren's torrent of musical notes which he belts out in a loud, liquid cascade.

Ash-throated Flycatcher: A denizen of central and western Texas, the Ash-throated Flycatcher seems like a pale copy of the slightly larger Great-crested Flycatcher. Ash-throated Flycatchers have been observed nesting in iron pipes, in mailboxes, eaves of buildings, tin cans and nestboxes. They prefer to lay a bed of hair and grass in a tree hole or cavity in a telephone pole, however. Males and females look alike, but only she incubates the four to five creamy eggs streaked with purple or brown. Relishing wasps, flies, beetles and other flying insects, they can put a dent in the local arthropod population.

CONCLUSION

Good luck with your bluebird boxes! Remember to visit your boxes weekly. We also encourage you to send us any additional comments, suggestions or special questions. Track the beautiful bluebirds as well as other secondary cavity nesters. You may also wish to send in accounts of any interesting experiences or observations that you make and, most importantly have fun!

For those "bluebirders" wanting to learn more about bluebirds, please refer to the extensive Bluebird Bibliography on page 33 of this publication.

APPENDIX
Quick Reference Guide

Bluebird Ecology

- The Eastern Bluebird can be found throughout most of the state. Western and Mountain Bluebirds are found in the Trans-Pecos region. All three species may be found into Central Texas and the Hill Country during the winter.
- Their decline was mainly due to scarcity of nesting cavities, habitat changes, pesticide use and competition with non-native species. Cold spring weather has also been implicated.
- Territory ranges from 2 to 25 acres, normally defended by both male and female.
- They prefer suburban and rural areas such as open woodlands and their margins, orchards, forest clearings with scattered trees, woodland groves, meadows, fence-rows, railroad and highway rights-of-way. Bluebirds are nesting in urban areas of Texas.
- Bluebirds nest from mid-February through July.
- Nests consist of grass, pine needles, twigs, straw, rootlets, horse hair and feathers.
- Clutch size is from three to six eggs, with birds laying two to three clutches per year.
- Young fledge when they are 17 to 20 days old.
- They feed mainly on insects. When insects are scarce, they will feed on fruit and berries.
- They frequent sunny openings where several perch sites are available.
- Native species of fruiting vines, shrubs and trees provides a welcome, year-round source of carbohydrates.

Nestbox Placement and Maintenance

- January is the time to clean and repair your nestboxes.
- Boxes should be out by the first week in February.
- Nestboxes also benefit other native cavity nesting birds.
- Areas that have been sprayed with insecticides, have heavy human traffic, and are less than 100' from woody, brushy areas should be avoided if your target is bluebirds.
- Boxes should be at least 5' from the ground to reduce predation.
- Entrance holes should be 1-1/2" in diameter for Eastern Bluebirds, and 1-9/16" for Western Bluebirds.
- Ventilation should be provided by placing the side walls at least 1/4" from the roof and by cutting the corners of the floor.
- Entrance holes should face away from prevailing winds and/or facing a nearby low perch that is within 60' for fledglings.
- Territorial disputes will be avoided if boxes are at least 100 yards apart.
- The roof should overhang the entrance hole by a minimum of 1" to 2".
- Wood at least 3/4" thick will adequately repel heat.
- Perches attract nest competitors such as House Sparrows.
- Pressure-treated lumber and wood preservatives are harmful to birds.
- Predator guards may be necessary.
- Vegetation should be kept low around the box to facilitate feeding behavior.
- House Sparrows or European Starlings and their nests should be immediately removed. Be careful not to remove the nests of native birds!
- Old nests once removed can be placed in a trash bag and thrown away when the young have fledged.
- Snags (standing dead trees) offer excellent, natural nesting sites.

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* Highly recommended

Nest box with predator guard

www.texasbluebirdsociety.org

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