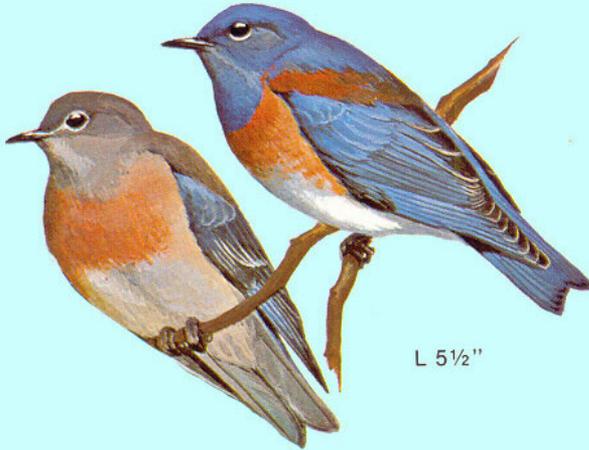


MONITORING GUIDE
MONITORING YOUR BLUEBIRD TRAIL
IN CALIFORNIA

by Hatch Graham

California Bluebird Recovery Program



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Introduction:

This manual borrows heavily from Monitoring Your Nest Boxes by Don Bragg, Editor of Wisconsin Bluebird (v.7 no. 1, Spring 1992); Monitor a Bluebird Box or Trail, a basic information sheet on monitoring from the Audubon Society of Corvallis by Elsie Elzroth (1992); Predators and Problems on the Bluebird Trail by Bluebird Recovery Program, Minneapolis Chapter of Audubon (1991); and The Bluebird by Lawrence Zeleny (1976). The illustrations by Arthur Singer are from Cavity-Nesting Birds of North American Forests, Agriculture Handbook No. 511, USDA-Forest Service. Species characteristics are from Western Birds' Nests by Hal N. Harrison and from reports from bluebirders throughout California. Suggestions for improvement will be welcomed by the author at birdsfly@innercite.com

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MONITORING YOUR BLUEBIRD TRAIL IN CALIFORNIA

by Hatch Graham
California Bluebird Recovery Program

WHY MONITOR ANYWAY?

We put up the boxes. Isn't that all we have to do? Someone said there's a shortage of cavities for the bluebirds and others. We've taken care of that now, haven't we?

Well, yes and no. It's one thing to invite someone to stay, but are we simply attracting the birds into a bad neighborhood where they'll be robbed and beaten and the young killed or eaten? Are we sure we're providing a home for bluebirds and other beneficial birds, or are we just setting up housekeeping for house sparrows to multiply and spread their misery for all the song birds in our area? Are we just fancy packaging birds for raccoons and cats?

There are three prime objectives for monitoring nestboxes. First and foremost, with regular, frequent visits to each nestbox, you may be able to spot problems threatening your tenants. You may be able to intervene so as to protect the adults and increase the nestlings' chances for survival.

Second, you can develop a body of knowledge about the habits of cavity-nesters here in California where not too much research has been done. You may discover techniques and patterns that will help others to improve their success with the bluebirds, titmice, swallows and others.

Lastly, you will build a dated record of each visit to the nestbox that will remind you of the age of the nestlings in the box you are approaching, and what's been going on at the box during the previous weeks. This record will help you understand and interpret the present visit.

In addition, most people find monitoring to be a lot of fun!

WHEN TO MONITOR

Nestboxes should be monitored from the beginning of the nesting season—mid-March to about August 15; once a week, if matters seem to be going well on the bluebird trail; more often if problems warrant closer visits. All of us have personal interruptions from time to time, but for monitoring to be meaningful we should not go more than 10 days between visits. If you're going to be away longer, call your County Coordinator or arrange for a neighbor to check the boxes for you.

HOW TO MONITOR

Get Ready:

√ Get a daypack, belt bag, roomy briefcase or purse to carry your gear. Assemble your tools:

√ A spatula for shoveling out old nests, spider webs, earwigs, and to smash paperwasp or hornet nests.

√ Straight tongs for the same if your boxes are top-opening.

√ Plastic produce bags for carrying the old debris away from the nestbox in the event it's full of parasites.

√ A small mirror for looking down into the nest on side or front opening boxes. A dental mirror or an automotive inspection mirror is excellent. You may want a flashlight, too, if your eyes are like mine.

√ Hammer, several sizes of nails, and screwdriver and screws if that's your box style. Some longer screws may be needed to replace others that have stripped loose in the wood. Include double-headed duplex nails for the lock (in the event you lose one in the high grass).

√ A small, wide pry bar.

√ A small coil of black wire (baling wire or tie wire).

√ An old paint brush for sweeping out the boxes.

√ Lysol® spray or a spray bottle filled with a solution of one tablespoon of household bleach in a pint of water for disinfecting nestboxes that had mice or dead birds in them or may have been preyed upon, or have had infestations of parasites. This is for empty boxes only. Never spray in an active nest or on the bodies of birds!

√ A salt shaker containing diatomaceous earth (DE), an earth-friendly insecticide for mites, and other arthropods with segmented exoskeletons. DE cuts into the insect and dehydrates them. It's available in most garden stores.

√ A paper bag or box of dried grass.

√ A roll of paper towels or toilet paper.

√ *Don't forget your* INDIVIDUAL NESTBOX RECORD (CBRP FORM 1)—one for each box—and a pencil or pen.

PROCEDURE

Preliminary (Late February to Early March)

Before the nesting season begins, visit all boxes to make certain that the boxes are clean, shut, and ready for occupancy. Exhausted migrating violet-green or tree swallows sometimes enter boxes to die upon their return to their spring nesting areas. We find lots of spider nests, sometimes masses of earwigs, and an occasional overwintering baldhornet queen. Mice also take up summer, fall, and winter residence in nestboxes and leave nests and midden in bluebird boxes.

Caution: *Some deer mice carry the dangerous Hantavirus. When handling mouse nests, some authorities recommended latex gloves, a dustmask, and goggles. Prespray the nest with Lysol® or bleach disinfectant, then carefully remove the nest with an inverted plastic bag over your hand and place it in another bag. Dispose of it carefully. Spray the nestbox again for 2 to 3 seconds and leave the box open to dry. Avoid breathing any dust when cleaning out a mouse nest.*

Monitoring (Late February—Mid-August)

Don't check your nestboxes in cold, wet weather in early Spring—pick the warmer days. Has nest building started? If so, make an appropriate note on **FORM 1**.

If the bluebirds build the nest all the way up to the entrance hole, remove an inch or two of material from the bottom of a new nest. This lowering of the nest will give the eggs, nestlings, and female bird greater protection against predators.

Quietly and gently look into each nestbox every week to see whether the female is incubating or sitting with newly hatched young. If she is, close the box and leave the area quietly. Complete a line on the **INDIVIDUAL NESTBOX RECORD** with the proper date.

If the adult is not on the nest when you look in the box, count the number of eggs or nestlings. Look under the nest material for evidence of blowfly maggots, ants, or other potential problems. Examine the nestlings' bodies for attached blowfly maggots. Enter appropriate information on your **INDIVIDUAL NESTBOX RECORD**.

Avoid opening a nestbox when the nestlings are close to fledging (13-21 days of age). Your faithful counting of eggs, the date the eggs were first seen, when the full clutch of

Estimating the Hatching Date.

The mother bird lays one egg each day until the clutch is complete. Then the incubation begins and lasts 13 to 15 days. Suppose you monitor on Saturday, April 13 and find one egg. The following Saturday, April 20, there are 5 eggs. This means another egg was laid on Sunday, Monday, Tuesday and Wednesday and incubation began on Thursday. Using 14 days average, the estimated hatching date would be Thursday, May 2. The nestlings will be 13 days old on Wednesday, May 15, so you should skip your Saturday check on May 18. However, by the following Saturday—May 25—the nestlings will be 23 days old, fully feathered, and should have already fledged. Occasionally, especially in cold weather, they may be hanging back, but if you scare them out now, they should be able to fly and the adults will continue to feed them. It's usually safe to check *after* 21 days in the nest.

See the Characteristics Table, page 30, for other cavity nesting species.

eggs was noted, and the incubation period, will tell you when the nestlings are approaching their 13th day of age. If the nestlings are excited into leaving the nestbox prematurely they become easy prey of ground predators.

More can be learned about population dynamics and our success through bird banding. Locate a licensed bird bander. Schedule visits to your trail to band the hen while incubating during the last week before hatching and again to band your nestlings when they are 7 to 13 days old.

Don't hold a lengthy conversation near a nestbox with another person that may keep the mother bird off the eggs or which may prevent feeding of the young by the adult pair.

Don't blame yourself for what may appear to be nest abandonment by the adult pair. There's a high rate of mortality among adult female bluebirds, swallows, and others.

If the female dies, the male will begin calling for her. After awhile, another female may respond to the male's call. Unless the birds are banded, it's impossible to distinguish between the former mate and the new female that has responded to the male's call. However, a new female will have nothing to do with the eggs or young that are in the nestbox. The male will then desert the nest for the new mate and follow her near or far and you will have a nest of cold eggs or hungry nestlings on your hands.

What to do? Nestlings can survive 24 hours without food. If you are in time, keep the orphaned nestlings warm by holding them in your hands or against your body. Call your coordinator to see if someone else has same-age nestlings. Abandoned nestlings can be placed in another nest with nestlings of the same age. The foster parents can successfully rear two broods in a single nest. On the other hand, if the parents are nearby but the nestlings are cold and sluggish, they may have become hypothermic during prolonged rainy, cold, or windy spells and cannot respond to the parent with food. Artificially rewarming them, including feeding them warm water, may revive them enough so they may be returned to the nest able to receive food from the adults.

VISUAL AGING OF NESTLINGS

These descriptions are based on bluebirds but much applies to all species. Ash-throated Flycatchers, who incubate longer and fledge earlier, will advance slightly faster.

Day 0-1 Eyes are sealed. Size: on day 0 same as egg from which it came. Coral pink. Head and back covered with black down. The down is concentrated on head and in diminished amounts down the spine. Size on day 1 is double the egg size.

Day 2-6 Eyes are still closed. Small dark areas appear under the skin and increase along the small fleshy portion from the bend of the wing to the tip. Though obscured by the down on the head, feathers are developing under the skin there too. Toward day 6 the wings have a washboard appearance from pin feathers under the skin, and feathers under the skin are noticeable on the flank and tail.

Day 7-11 The eyes begin to open but are still slits. Most feathers on the back and wings are beginning to rupture the skin. Still in their sheaths, they are growing about 3/16th inch per day and the back and head feathers begin to unsheath at varying rates. Very little of the bird's body is now visible and where it is, the skin is very wrinkled.

Day 12-15 The eyes are no longer slits but fully opened. The primary feathers are beginning to unsheath exposing the brightly colored feathers of the males and the more subdued feathers of the females. After day 13, the nestlings become more and more restless.

Day 16-21 The birds are more restless in the nest and are likely to fledge prematurely if disturbed. The white eye-ring becomes apparent about day 16. On the females a difference in the back feathers is now noticeable: light spots are more numerous and contain a larger area per spot than the males.

—adapted from *Sialia, The Quarterly Journal of the North American Bluebird Society*, v.1 no.3 1979: Key to Aging Bluebirds by Paul D.Jung.

Feeding orphan nestlings by hand requires a federal permit, so call your coordinator to see if there's a nest where you can transfer the nestlings. In any case this is preferable to trying to hand-rear them. Hand rearing is seldom successful because each baby bluebird must be fed about every 20 minutes in the morning hours and later in the day. You may have an Animal Rescue group in your area that may help as a last resort, but don't be too discouraged if you lose the babies; natural mortality is always pretty high.

Check vacated bluebird, tree swallow, or other nests once the nestlings have left. If they seem to be infested with lice, mites, ants, or other insects, remove them. Otherwise the nest may be left in place. Bluebirds build a new nest with each nesting attempt. If a nest is built over the old one, you may want to pull some of the material out from the bottom. This will keep the nest cup below the entrance of the nestbox so predators are less likely to be able to reach the eggs or birds with their bills, claws, or paws. Recent research seems to indicate the birds prefer building over an old nest rather than in an empty box. Usually swallows and flycatcher nests are best removed because of the large amount of fecal matter left.

When disinfecting a cleaned out nestbox with a spray solution, prop the door open and allow the box to air dry.

Identifying nest failures

It's important to identify causes of any nest failures that occur so that you can improve your management of your bluebird trail and help us with ours. Make a record of any nest failure in the "comments" section of the **INDIVIDUAL NESTBOX RECORD**. If you cannot positively identify the cause of nest failure, indicate that the cause was "unknown" or by clearly indicating a guess such as "raccoons (?)"

PREVENTING NEST FAILURES

Insects

Blowflies

If blowfly larvae (maggots) are present, brush them from the bottom of the nestbox into a container for later disposal away from the nestbox. Maggots and cigar-shaped pupae dropped onto the ground beneath the nestbox may develop into adults and reinfest the nestbox. Examine the bodies of nestlings in a blowfly infested nestbox and remove any blowfly maggots that may be attached to the nestlings.

If a heavy blowfly maggot infestation occurs, you may need to change the nest material. This is where the small bag of clean, dry lawn clippings pays off! Transfer the nestlings to a box or bag, remove the infested nest into a plastic produce bag, and make a new nest with the lawn clippings. Replace the nestlings and leave the area quickly. Make a written note of your work on Form 1. Handling nestlings can be messy. Use the paper toweling or TP to keep the nestlings comfortable while they are confined in the transfer box and to help you isolate the mess that they are liable to make.

Vespids (Wasps, etc.)

When looking into a nestbox, be careful there's no hornet or wasp nest attached to the upper side or top of the box. Bluebirds won't nest if there's a wasp or hornet nest present. Most of our nestboxes have ventilation slots between the sides and the roof. You can insert a thin spatula and crush the wasp nest against the roof of the box. If you don't kill the adult wasp, she will soon return and rebuild.

Apply a thin film of vaseline, bag balm or even soap on the inner surface of the sides and roof to make it more difficult for a wasp to attach its hanging nest. Leaving the box open for a couple of days may cause the wasps to abandon the box. Don't use insect sprays in nestboxes.

A bumblebee will seek out a fresh bird's nest and occupy the bottom of the cup. This will keep the female from laying

her eggs. Bumblebees aren't very aggressive. Shoo it away and poke around in the middle of the nest with a stick or pencil to destroy the bee's tiny nest. The birds will often return when the bee's been ejected.

Ants, Mites, and Earwigs

Garden grade diatomaceous earth (DE) has been found to be an excellent method of destroying small insects with an exoskeleton. It is nontoxic to birds. If the nest has mites or ants, carefully remove the nestlings, powder the nest with a teaspoon of DE, shake it into the nest and return the birds. (One brand is *Concern®DE Crawling Insect Killer*.) Don't apply it directly to the birds as it may cause eye irritation.

Tree Tanglefoot® for fruit trees can be painted around the base of the nestbox post to trap the ants in the sticky substance with no danger to the birds.

If large quantities of earwigs are invading your boxes in the Spring, sweep them out into a bag and dispose of them. DE and *Tanglefoot* may prevent their return.

Predatory birds

House sparrow

House sparrows may be the most important cause of bluebird decline other than loss of natural cavities. House sparrows destroy songbird eggs, but they just as surely kill the young and adult bluebirds by attacking them in the nestbox and scalping the birds with their hooked beaks. Look for substantial body damage on the dead bluebirds. Feathers will be missing and blood will be found. House sparrows frequently build their nest over the bodies of their victims.



HOSP Alpha Code

Solutions:

- ◆ Avoid placing bluebird nestboxes near active farm buildings, dog kennels, or other animal care operations where the sparrows can find spilled food and hay as well as shelter.

- ◆ Try substituting one of two “sparrow-proof” nestboxes. The Bauldry box has a 3 1/2-inch hole in the top covered with 1/2-inch mesh hardware cloth to keep out predators, while letting in light. House sparrows don’t like the light.

The Davis Kentucky slot box (1994 version) is designed with only 5.5 inches between floor and roof. House Sparrows build deep nests and avoid these shorties. The opening is a 1 1/8th-inch slot across the whole front immediately under the roof.

- ◆ Control House Sparrows on a year around basis with a trapping program if you really want to help all your resident song bird population. House Sparrows don't migrate, so eliminating them in your area may keep them away for a while. Strict House Sparrow population control can bring bluebirds back in some urban areas.

Traps are available for reducing House Sparrow populations.

- ◆ On the subject of House Sparrows, Don Bragg writes:

“Whenever a house sparrow nest is found, remove it immediately, including the eggs and young. Destroy all house sparrows. House sparrows kill adult and young bluebirds by scalping the adult bluebirds and tearing apart the bodies of the young bluebirds. You will show no mercy to a bluebird when you show mercy to a house sparrow. *Don’t transport live sparrows to another area to release them. If they don’t find their way back to your bluebird trail they will become a problem in the area where they were released.*

“If you are unwilling to control house sparrows on your bluebird trail, move your boxes away from the sparrow haunts... about a quarter of a mile away. Sometimes sparrows can be a

threat at even greater distances if they are ranging back and forth between different feeding and shelter sites. In some rural areas, local bluebirders say that there's no remaining remote area safe from house sparrow depredations!

"If you can't find safe, open space a quarter of a mile from buildings occupied by sparrows and you cannot take up an intensive sparrow control program, then take your boxes down and store them in your garage or give them away to a responsible person. It's better not to entice bluebirds to nestboxes where they are not protected from house sparrows (or domestic cats, raccoons, opossums and other predators).

"Capture and kill the male house sparrow in particular. Merely destroying the sparrow nest and eggs is not enough to keep the sparrow from killing your bluebirds. Destroying the female sparrow won't drive away the male sparrow. It's so strongly attached to its choice of a nest location that it will remain an aggressive bully of other bird species nesting near that location even though the male house sparrow no longer has a mate."

European Starling

The European Starling is very aggressive and it will drive away other cavity nesting birds, even including wood ducks. The starling is found in all habitat situations involving cavities.

Solution: Be precise about making bluebird nestboxes with no more than $1^{9/16}$ th inch diameter entrance holes. Starlings seldom can get inside of nestboxes with openings smaller than $1^{3/4}$ th inches. If squirrels gnaw or woodpeckers enlarge the opening greater than $1^{9/16}$ th inch, nail a cover over the enlarged hole with a properly sized entry hole. A polycarbonate plastic protector is available for persistent woodpeckers.

House (English) Sparrows and European Starlings are not protected by law....

All other bird species that may affect bluebirds are.



ic

Jays, Magpies, and Woodpeckers

If they can reach in an enlarged hole, these birds can pull out nestlings and eggs. Keep the nests lowered within the box and repair the holes if they've been enlarged.

Kestrel

The kestrel is a small falcon with a rusty tail and back that is often seen hovering. Its former name was “sparrow hawk.” It's a beneficial and protected species that has adapted to the largest cities where it preys chiefly on House Sparrows. Elsewhere, the smaller male is more likely to take birds than the female but rarely does so during the nesting season when insects are abundant and, along with small mammals are its preferred food.

We regularly observe kestrels, bluebirds and other birds perched close together on power lines without apparent conflict. The adult bluebirds usually are unhindered in rearing their young even in close proximity to a kestrel territory. *Wisconsin Bluebird* newsletter reported only one killing of a cardinal by a kestrel and no reported kestrel attacks on bluebirds in the six years between 1986 and '92.

Merlin

Like the kestrel, the “pigeon hawk” gained its former name because it's a predator of birds as well as mice and insects. However the Merlin is not common enough to be of great danger to the cavity nesting populations. It's mentioned here because one was observed taking a bluebird near Pleasant Valley in El Dorado County in 1995.

Solution: provide lots of boxes for bluebirds to cover natural mortality.

Other Predators

Raccoon

The raccoon is a clever, strong, climbing predator that will eat the eggs, nestlings, and adult bluebirds. Look for a nest

that is disturbed. Parts of the nest will often be pulled through the entrance hole of the nestbox. Claw scratches may be found on the box. Raccoons have the strength to tear off the roof of a weak or poorly built nestbox. Raccoons eat their food outside of the nestbox, so look for coarsely broken eggshell fragments or bird feathers below the nestbox or nearby:

Solution: Build deep nestboxes with a five-inch overhanging roof or a mesh predator guard over the entrance hole. Try mounting nestboxes on PVC pipe that is slipped over a steel post. Use an inverted metal cone guard. A ¾" electrical conduit pipe that telescopes into a 1" pipe will raise your nestbox out of reach of most raccoons and still make it easy to monitor.

Caution: Raccoons commonly are infected with a roundworm called *Baylisascaris procyonis* that lives in their intestines. The eggs of this roundworm pass out of the raccoon in its droppings or feces. These eggs can be carried into a household on contaminated firewood or can be tracked into a house by persons who have stepped in the droppings. If the roundworm eggs are accidentally ingested by humans they will cause illness. The infection can cause death to children under two years of age.

Cat

Domestic cats are extremely dangerous to bluebirds. They can catch bluebirds (and other birds) on the ground, in the air, or they can hook them out of a shallow nestbox. Parent bluebirds defending the nestbox will dive at an apparently disinterested cat until the cat suddenly springs into the air to pull down a flying bird. Cats will stalk birds and pounce upon them when they are on the ground. Cats will also sit on the roof of a nestbox and reach down into the hole to take birds out of the box. Even cats that have been declawed can catch birds. Look for bird feathers near or far from the nestbox. Sometimes the cat will deposit the bird on the steps of the house where it lives.

Solution: Don't put up nestboxes where there are house cats. Don't give nestboxes to persons who will put the boxes in the same yard where their cat roams. Watch the nestboxes and chase feral cats away.

Snakes

Snakes have astonishing ability to climb small posts and stockwire fences to enter bluebird houses. Almost any snake other than rattlers will eat nestlings and, even more often, eggs. It's very difficult to determine nest failure from this cause because a snake usually will leave no sign of its visit. Disappearance of the eggs with the adults still in the area should make you suspect a snake.

Solutions: Boxes located in mowed areas are less likely to be visited by a snake because the snake needs some ground cover to conceal itself from hawks and other natural enemies. Boxes mounted on metal pipe poles are also more snakeproof, especially if they've been greased with lithium grease or graphite.

Unless you actually witness a snake at a nestbox, don't record a nest failure as caused by a snake. Rather, list the cause as "unknown" or "snake (?)"

Gray and flying squirrels

Squirrels will enter a nestbox and eat the eggs while inside the box. You should be able to find small fragments of eggshell in the nest if it's raided by a squirrel. You might possibly also see squirrel scat which ranges in size from 3/8" to 1/2" and lacks the whitewash seen on bird droppings.

Solution: Gray squirrels usually won't enter a bluebird box without enlarging the entrance hole. The flying squirrel is nocturnal and is usually present only when there's a continuous canopy of coniferous trees (pine, fir, doug-fir, and cedar). Move the nestbox into an open area out of 'sailing' distance from the forest.

Human Problems

Disturbance

People also cause nestbox failure. In areas of heavy public use, some losses may occur from curious children opening the box at the wrong time or playing with the contents. Securing the door with a screw may be all that's needed to

prevent this inadvertent disturbance.

Losses through sheer vandalism are particularly distressing. Try to determine who caused the vandalism. Educate whenever possible. Speak to the parents of children known to be harming the birds and boxes. Talk with the children. If you meet with indifference, remove all of your nestboxes from the vicinity of the vandalism.

Lawn sprinklers

Be sure your nestbox isn't in the line of fire of a rainbird type sprinkler. Some of these have timers and only run at night. They are common on golf courses. The nestboxes are designed to shed rain, but a full blast into the entry hole will soak the nest and run your tenants out.

Pesticides

Most orchardists and vineyardists practice careful use of pesticides and organic growing is gaining more prominence. Bleeding from the nostrils in the upper mandible is one symptom of pesticide poisoning but you may just find dead nestlings. *If* their stomachs are full, *if* heat or cold can be ruled out, and *if* their parents are still around, collect them in a plastic bag, and ask your County Coordinator to have them examined by a Fish & Game pathologist to verify the cause. If you are close to intensive agricultural land, determine whether or not they spray and, if so, what kinds of chemicals.

Weather

Heat

During extended periods of hot weather, part of or entire broods of both bluebird and tree swallow young may die in overheated nestboxes. This type of nesting failure can only be proven when individual nestboxes are checked nearly every day. If you suspect that a brood may be suffering from heat you may want to check that box more

frequently. Where summer heat exceeds 100 degrees, Tom Hoffman, San Joaquin County Coordinator, suggests providing a sun baffle over the roof with space for air to circulate between the baffle and the box. Consider placing boxes on the northeast side of posts where they receive less direct insolation or northeast of a shade tree that will cast a shadow over the box in the afternoon.

Cold

One or more eggs in a clutch may not hatch due to exposure to excessive chilling before incubation has begun or if incubation has been interrupted. This problem is more common in places like the Lake States than California except at higher elevations. Late snowstorms and freezing temperatures may force the female bluebirds and swallows to leave their nesting territories for extended periods to find alternate food when insects become dormant.

There's no way of telling which eggs won't hatch until the female completes the incubation period.

Some chilled eggs will have a delayed hatch. If the hatchling survives to make a tardy exit from the shell it will be smaller than the rest of the brood. A small nestling may survive to fledge despite the competition in the nest for food. The parent birds will remain to feed the late arrival until it fledges some days later.

CAVITY-NESTERS THAT MAY USE OUR BOXES

The standard nestbox developed for bluebirds is suitable for a fairly wide variety of cavity-nesters. Its entry hole keeps out starlings. Some birds may enlarge the hole. Here are a couple of the species you may expect.

Downy Woodpecker

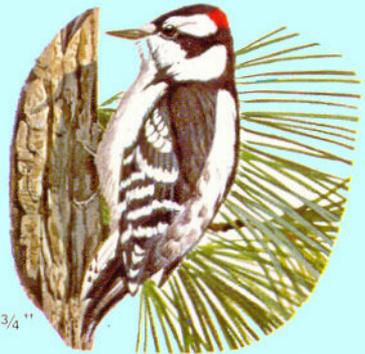
Picoides pubescens

Nuttall's Woodpecker

Picoides nuttallii



L 6¾"



L 5¾"

DOWO
NUWO Alpha Codes

Few woodpeckers actually nest in bluebird boxes because of the hole size or because the depth of the box doesn't meet their needs. The exceptions are the Downy Woodpecker—the smallest of our California species—and occasionally the Nuttall's Woodpecker. At 5¾", the downy can easily fit into a standard nestbox although they seldom use them for anything more than roosting. A little larger, Nuttall's also use the boxes for winter roosting. Acorn Woodpeckers can seldom use a 1½" hole without enlarging it, though Acorn Woodpeckers using nestboxes have been reported in Placer County.

All woodpeckers—Eggs: 4–5; pure white. No material is added for a nest. They lay their eggs on the bare floor.

Ash-throated Flycatcher

Myiarchus cinerascens



ATFL Alpha Code

This flycatcher likes fencelines along our oak woodland-savannah cattle range. Ash-throats winter from southern Mexico to Costa Rica and return after the bluebird has built its first nest. Flycatchers may build their nests over the vacated bluebird's nest.

The base of the nest is often moss from the shady side of oaks, bits of rootlets and grass, followed by a layer of coyote, fox, skunk or raccoon manure heavy with hair and fur of rodents and rabbits. This is followed by a layer of hair and fur till the nest resembles a brown felt mat. Eggs: generally 4–5, similar in size to bluebirds but creamy white to pinkish; streaked, spotted, splashed, or blotched with purple or brown.

Where these flycatchers are common, we suggest pairing boxes for both species. Bluebirds and flycatchers reside happily side by side.

Cleaning out the old nest is recommended for these birds.

Tree Swallow

Iridoprocne bicolor



Violet-green Swallow

TRES Alpha Code

Tachycineta thalassina

VGSW Alpha Code

Some areas get more Violet-green or Tree Swallows than bluebirds in bluebird nestboxes. These aerial acrobats are beneficial, protected birds. Swallow nest material is an accumulation of dry grasses, usually lined with 3-5" contour feathers from waterbirds, chickens, and turkeys.

The two species can't easily be distinguished from each other; watch the face marking of the males for identification.

The nests of the two species are identical. Eggs: 4-6; smooth, white, oval. The nestbox walls and nest become extremely messy while the young reside in the box.

Erect nestboxes in pairs eight or ten feet apart. Tree swallows and bluebirds will share the same territory. Normally the established pairs of birds will drive away others of their own species. However, in areas of abundant food, tree swallows will nest as close as 7 feet apart and it may be necessary to place the paired nestboxes side by side or back to back to maintain an empty one for the bluebirds.

BEWICK'S WREN

Thryomanes bewickii



L 4 1/2"

BEWR Alpha Code

Bewick's Wrens are found throughout California except for the higher mountains and deserts. They resemble their cousins, the House Wren but are not nearly as common in bluebird habitat. They frequent the chaparral. Bewick's wrens are not as territorial as the House Wren, nor are they as aggressive at staking claims to several boxes at one time.

Their nests are similar to House Wrens but they use a wider variety of material for the bulky base, including leaves, rubbish, and chips with fewer twigs. The deep cup is made of feathers, hair, moss, and dry leaves. The nest may be open or closed.

Eggs: 4–11, commonly 5–7, smooth, non-glossy white with irregular brown, purple, grey spots and dots often concentrated in a wreath at the large end (lighter in color than house wren eggs).

Incubation: 14 days.

House Wren

Troglodytes aedon



L 4 1/4"

HOWR Alpha Code

If a nestbox is filled with small sticks and there are eggs in the stick nest, it's a House Wren nest. Allow the eggs to hatch and the young wrens to fledge. Then move your bluebird nestbox away from the brushy, wooded area.

If eggs in a bluebird or tree swallow nest are punctured and/or dropped on the ground below the entrance hole, the nestbox is in the territory claimed by a House Wren. The holes in the eggs will look like they have been punctured with a toothpick.

You will observe more nesting conflicts between bluebirds and House Wrens in a year when cold spring weather delays the nesting of bluebirds. This causes the nesting of wrens and bluebirds to coincide more closely.

The male House Wren will start house hunting before the female arrives by putting twigs in every house within two or three hundred yards to stake a claim and show the female a large choice.

Solution: Your best defense against wren damage is to keep your nestboxes at least 100 feet away from brushy, wooded habitat. This is not always possible. Put up wren nestboxes with 1-inch diameter entrances and try to meet the wrens' cavity nesting needs, too, with boxes especially suited for them. But do get adequate open space between the wren boxes and the bluebird boxes. You can also focus the male wren's efforts by moving twigs from several boxes into the one house that best fits his woody habitat.

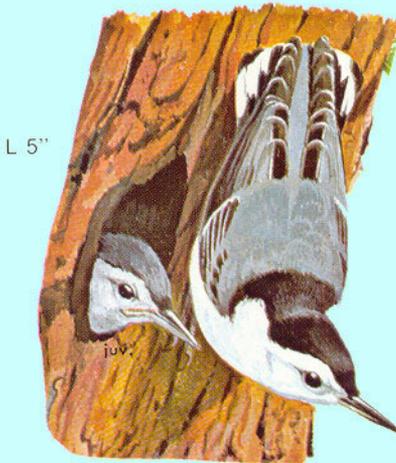
If the female wren builds her tiny nest amongst the twigs and begins laying eggs, you may successfully pair another box for a bluebird or swallow provided it is no more than 15 feet away from the wren's active nest. The wren will not peck eggs close to its own occupied nest.

Eggs: 5–8, commonly 6 or 7. White, speckled with tiny reddish and brownish dots concentrated on the large end.

Incubation by female alone: 12–15 days, typically 13; 2 broods.

White-breasted Nuthatch

Sitta carolinensis



WBNU Alpha Code

White-breasted Nuthatches are widespread throughout deciduous woodlands. They usually nest in boxes that hang or are attached to trees rather than on posts.

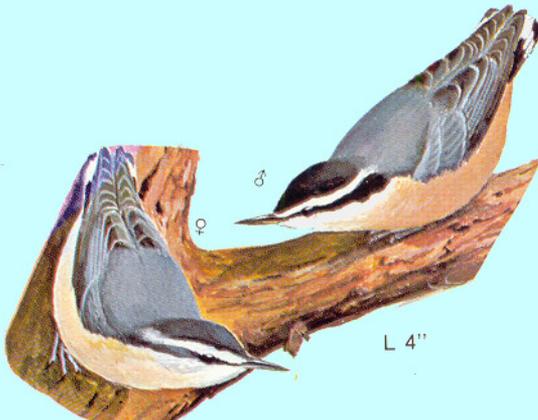
Nest is lined with bark shreds, twigs, grasses, rootlets, fur, and hair including hair-filled feces and owl pellets.

Eggs: 5–10; non-glossy white, marked with light brown and lavender spots, densest on the larger end.

Incubation 12 days; 1 brood per year.

Red-breasted nuthatch

Sitta canadensis



RBNU Alpha Code

Red-breasted Nuthatches are common in conifers throughout California. They rarely use nestboxes. When they do it's usually 15' or higher..

Both male and female smear pitch (resin) around the nestbox hole and continue during the nesting season.

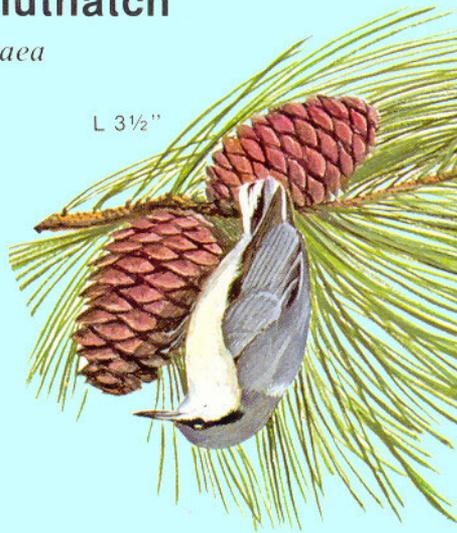
Nest is lined with bark shreds, moss, bark, and feathers.

Eggs: 4-7, commonly 5-6, non-glossy white, spotted and dotted with reddish brown; smaller than white-breasted nuthatch

In

Pygmy nuthatch

Sitta pygmaea



PYNU Alpha Code

The Pygmy Nuthatch prefers yellow pine forests from 3,500' to 10,000'. It usually digs its own nest in a rotted pine stub and caulks cracks in walls with nesting material.

Nest may be as low as 8' (more often higher) and consists of shreds of bark, bits of cocoons, wool, plant down, and feathers.

Eggs: 4-9, usually 6-8; non-glossy white with a few fine reddish dots.

Incubation \pm 14 days, 1 brood.

Oak Titmouse

Baeolophus inornatus



OATI Alpha Code

If your nestbox is among oaks, below the pine belt in the western slope of the Sierra, you are likely to have the diminutive Oak Titmouse—this is the “gray chickadee” with the crest. The titmouse is resident and usually will have eggs before the bluebirds start to nest. Both bluebirds and swallows may build nests on top of titmouse nests after the young tits have fledged.

Nest is lined with moss, grass, weed stems, fibers; cup is hair and fur but much finer and smaller than the Ash-throated Flycatcher. Before incubation starts the eggs will be hidden under a fur cap.

Female sits tight and may be gently removed to count the eggs and young. Place her back, close the door and she'll seldom leave. If she does she'll sit nearby and scold till you're gone. Titmice can be paired with other species, also.

Eggs 6–8, commonly 7, small, plain white, occasionally with fine reddish dots.

Incubation 14 days, 1 or 2 broods.

Black-capped Chickadee

Poecile atricapillus



Chestnut-backed Chickadee

Poecile rufescens



Mountain Chickadee

Poecile gambeli



Alpha Codes:
BCCH
MOCH
CBCH

Besides the titmouse, three other chickadees grace our California woodlands. These are the Black-capped, the Chestnut-backed, and the Mountain Chickadees. All are similar and all use our nestboxes.

The Black-capped is found in the northwestern part of the State, mainly in alder and willow thickets north of the Golden Gate.

The Chestnut-backed is found on the west side of the Coast Range south to San Luis Obispo with a few isolated populations in the Sierra around Blodgett Research Forest in El Dorado Co.

The Mountain Chickadee is found in both hardwood and coniferous forests in the Cascade-Sierra and high mountains of Southern California.

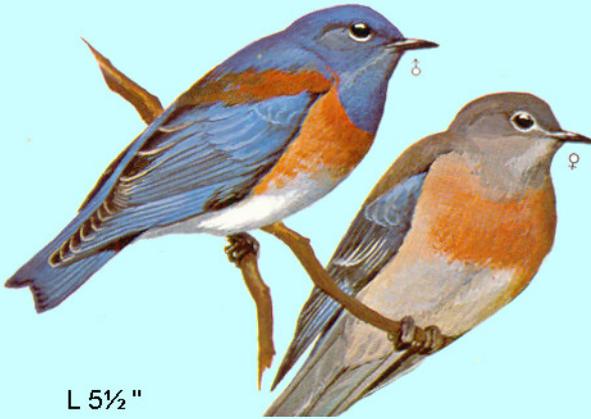
All chickadees fill the bottom of the nestbox with moss and feathers, fur, insect cocoons, plant down, or cottony fibers. Like the titmouse, they hide their eggs under fur before incubating.

Eggs: 5–10, commonly 6–8, smooth-shelled eggs. The eggs are white, rather unevenly spotted or mottled with reddish brown.

Incubation is by the female for 12 to 13 days.

Western Bluebird

Sialia mexicana



L 5½"

WEBL Alpha Code

Western Bluebirds prefer short grass which may occur in many ways—pastures, grazing land, vineyards, orchards, mountain meadows, and lawns—including golf courses, parks, and cemeteries.

Near their nest they like lookouts for hawking insects on the ground, interacting with mates, advertising their territory, watching for predators and intruders, and observing their nesthole entrance. These perches can be dead limbs on nearby trees, wire fences and fence posts, vineyard trellises, or low telephone lines. A nearby water source is important for good bluebird habitat.

Three-fourths of their diet consists of typical garden pests like grasshoppers, caterpillars, beetles and ants. In the winter they eat wild fruits and berries but well after human harvests.

Nest: base layer is generally coarse grasses and forb stems. The inner cup is lined with fine grass.

Eggs commonly 4-6, shell smooth, glossy; pale blue, bluish white, 5 to 10% albinistic — pure white, unmarked. They may start nesting in late February in the southern part of the State, later in the north and at higher elevations.

Incubation: 14 days; often 2, rarely 3 broods.

Mountain Bluebird

Sialia currucoides



MOBL Alpha Code

The Mountain Bluebird's range is reported as generally above 5,000 feet in California. (We need more information about this.) Grinnell and Miller reported nesting altitudes from 4,000 to 12,000 feet.

They like widely open terrain, the ground covered with short grass, alpine turf, stunted or widespread bushes, or even rock shingle. They perch on rocks, bush tops, or small scattered trees.

This is the most insectivorous of all the bluebirds. Ninety-two percent of the diet is animal material. The balance consists of berries and seeds such as elderberry, currant, mistletoe and juniper berries.

They take insects on the ground or in the air. They cruise low over open ground and snow banks from distant resting places. They have a high tolerance for wind and light exposure.

Nest: grasses, sedges, forbs, and shredded juniper bark.

Eggs 4-7; somewhat glossy; similar to Western Bluebird but generally paler blue; some white eggs also occur.

Incubation 14 days, 1 brood.

CHARACTERISTICS TABLE

(Subject to further verification.)

Species	Number Eggs Range(normal)	Egg Description	Broods	Incubation Days	Hatching to Fledging Days	Typical Season
Downy/Nuttall Woodpecker	4-5	flat white	1	14/12	?	?
Ash-throated Flycatcher	4-5	wht to pink, splotched	1	14-17	15-16	5/1-7/25
Tree Swallow	4-6(5)	white - no marks	1	13-14	20-21	4/15-7/31
Violet-green Swallow	3-8(6)	white - no marks	1	13-14	20-21	4/15-7/31
Bewick's Wren	4-11(6)	wht - red, prpl, gry spots	2	14	?	4/25-7/5
House Wren	5-8(6,7)	wht - hvy red, brn specks	2	12-15(13)	15-17	4/10-7/5
White-breasted Nuthatch	5-10(8)	wht - hvy lt brn, lavndr spts	1	12	21	4/25-6/1
Red-breasted Nuthatch	4-7(5,6)	--like above but smaller	1	12	21?	4/25-6/1
Pygmy Nuthatch	4-9(7)	wht - a few red-brn dots	1	14	20?	4/25-6/1
Oak Titmouse	6-8(7)	wht - usually unmarked	2	14-16	17-20	4/1-6/30
Black-cap Chickadee	5-10(7)	white - red-brn mks	1?	12-13	16	3/15-6/20
Mountain Chickadee	5-10(7)	white - red-brn mks	1-2	12-14	21	5/15-7/5
Chestnut-backed Chickadee	5-8(6,7)	white - red-brn mks	1?	11-12	13-17	3/15-6/20
Western Bluebird	4-6(5)	pale blu, blu-wht, wht	2-3(2)	14	19-23(21)	4/15-8/10
Mountain Bluebird	4-7(5,6)	--like above but paler.	1-2	14	21	5/20-8/1



Founded in 1994, supported by Mt. Diablol Audubon Society and an affiliate of the North American Bluebird Society, CBRP is *“for the encouragement and conservation of cavity nesters—especially bluebirds—anywhere in the West.”*

CBRP is non-profit, has no paid staff, and is supported entirely by the efforts of volunteers and donations accepted by the Mt.Diablo Audubon Society on CBRP’s behalf.

CBRP members had located and reported on more than 4,000 nestboxes by the end of 2005, with nearly 18,000 cavity nesters fledged—nearly half of them Western and Mountain Bluebirds.

CBRP welcomes membership from anyone who wishes to support its program, and especially seeks those who will place appropriate nestboxes in the proper habitat, faithfully monitor the birds’ progress through the nesting season, and report yearly on the results.

CBRP can furnish nestbox plans, this monitoring guide, forms for monitoring and reports, technical advice through a network of county coordinators, and sometimes the nestboxes themselves at a nominal price.

Membership, which includes a quarterly newsletter, *BLUEBIRDS FLY!*, is available for a donation of \$5 or more made payable to “MDAS -- Bluebirds” and mailed to CBRP, 2021 Ptarmigan Dr #1, Walnut Creek, CA 94595. Donations are tax-deductible.