



Vancouver Avian Research Centre

Research - Conservation - Education



Bluebird Nest Box Monitoring



Vancouver Avian Research Centre

Research - Conservation - Education

Index

Nest check protocol

Bird identification photos

Mountain Bluebird - nest ID and nestling age information

Western Bluebird - nest ID and nestling age information

Tree Swallow – nest ID

House Wren – nest ID

Mountain Chickadee – nest ID

Black-capped Chickadee – nest ID

Protocol for Checking Nest Boxes

General protocol:

1. Before approaching the nest box, watch briefly to see if the female is visiting the nest with material. That way you can avoid disturbing her if possible.
2. Approach nests with care. Avoid leaving tracks that can direct predators to nests. Nest predators are everywhere and many are smart enough to watch you. Be careful that predators such as cats, crows, and jays are not following you. Minimize damaging or trampling vegetation that could emphasize a nest box.
3. Before opening the box, scratch or tap the sides a few times to encourage female to leave if she is inside, then tap again when open to allow the parent to slip away before you stare directly into the box. If a sitting bird does not leave on its own, do not force it off the nest. In this case, you will need to come back later.
4. Make visits brief, quick, and very quiet. Nest visits should last no longer than one minute. Assess the nest stage, count eggs, age nestlings and then leave the immediate area to record your data. Record information on the data sheets as thoroughly as possible.
5. If contents are hard to see in the box, use a small mirror to get a better view. Do not handle birds or eggs. Eggs can be easily cracked or small nestlings injured. Small nestlings are remarkably helpless and may not be able to crawl back into the nest cup if displaced, even inside of a nest box. Remember, if you can't get an exact count or age, it's okay. Safety of the birds should be your top priority!
6. Use different routes for approaching and leaving the nest site. Don't leave a dead-end trail - whenever possible, take a different route away from the nest site than the route you took to reach it. Walking to the nest and back along the same path leaves a dead-end trail that can lead predators directly to the nest.

Things to note:

1. Because we are performing box checks minimal times throughout the season some of the following may be unavoidable. However, in general you should AVOID visiting nests under the following conditions:
 - **Do not check in the early morning.** Most birds lay their eggs in the morning so plan on visiting nests in the later morning or afternoon. Also, most adults will temporarily leave the nest when you are near, and eggs and young nestlings can become cold quickly if left alone in the morning.
 - **Avoid nests during the first few days of incubation.** If necessary, observe nests from a distance and approach only when the female leaves the nest.
 - **Avoid nests during bad weather.** If it is cold, damp, or rainy, postpone checking nests until another day. Checking nests during this time can be very stressful for birds.
 - **Do not check nests at or after dusk,** when females may be returning to the nest for the night.
 - **Do not approach nests when young are close to fledging.** When the young are disturbed during this stage, they may leave the nest prematurely (Before they are fully feathered and ready to fledge). Young that fledge prematurely usually do not stay in the nest despite attempts to return them, and their survival rates away from or outside the nest are low. When young birds are fully feathered and very alert, only observe the nest from a distance.

2. If premature fledging occurs:

- gather the birds quickly and replace them gently but firmly in the nest cup, the smallest on top, and covered with a hand or tissue.
- Withdraw the cover smoothly after giving time for the nestlings to settle. This is most successful if you can keep yourself out of sight.
- If they leave the nest again, it's best to let them be and allow the parents to round up the young themselves. The adult birds will continue to care for young that fledge prematurely.

3. Abandonment

- Do not assume a nest is abandoned just because you don't see or hear an adult bird in the vicinity, even for long periods of time. The eggs of most birds will remain viable for up to two weeks after being laid even before they are incubated, so as a rule of thumb, you should wait at least one month after the expected hatch date before concluding that a nest is abandoned.
- It is illegal to remove any materials from an active nest.
- If you have a nest with eggs and no parents, verify whether the nest is indeed abandoned – wait at least one month before cleaning out box. Box cleaning will generally occur in September, well after the nesting season.

Mountain Bluebird

Male



Female



Western Bluebird

House Wren



Tree Swallow



Black-capped Chickadee



Mountain Chickadee



MOUNTAIN BLUEBIRD:

Nests: Nest of grass, weed stems, pine needles, twigs, rootlets, bark, and, sometimes, wool, hair, or feathers. Mostly the cup is made of strips of bark that are slightly finer and an occasional feather.



Eggs: Eggs are smooth, glossy, unmarked, and are pale blue, bluish-white, or, rarely, white.





Nestlings:

0 days old



11-12 days

(see attached Daily Aging Sheet for great detail)



- **Nesting Timetable (typical):**

- **Excavation or nest site selection:**

- arrives in early spring (March, depending on location), with nesting starting later in higher elevations. Males show off cavities, and the female makes the final choice.

- **Nest construction:** 1-7 days (typically 4-7), mainly in the morning. May start in early March to late April or early May depending on location. Nest of dry grass, weed stems, pine needles, twigs, straw, rootlets, shreds of dry bark, and, sometimes, wool, hair (e.g., deer or horse), or feathers. Deep (~2 inches), well-formed cup lined with finer materials, and occasionally a few feathers or trash (shredded paper, plastic wrappers.) Built by female (although male may bring in some nesting material, especially during courtship.)
- **Egg laying:** Usually begins a day or two after nest is complete (depends on weather.) Depending on climate, the first egg may be in late March to the first week of May. One egg is laid each day until clutch is complete - typically 5-6 for the first clutch, 4-5 for second, up to 8. Eggs are oval, smooth, glossy, unmarked, and are pale blue, bluish-white, or, rarely, white. Male sits near nest site to defend.
- **Incubation** 13-15 days, depending on location and temperatures. Begins with the last or second to last (penultimate) egg. Only the female incubates (since only she has a brood patch) but the male may sit on the eggs when she is out feeding. The female sleeps in the cavity during incubation, while the male roosts nearby.
- **Hatching:** Usually occurs over a 24 hour period. Asynchronous hatching is possible. Young are altricial (blind and naked). The female broods them intermittently for a week or longer. The female may prevent the male from feeding young while she is brooding (taking the food from him, and sometimes eating it herself.)
- **Development:** From hatching to day 5, young are fed soft bodied insects and larva. After that, spiders and hard-bodied insects are fed. Parents remove fecal sacs throughout nesting.
 - Day 1: Eyes closed, pinkish skin with sparse down. Uncoordinated, raising head weakly and unsteadily, faint vocalizations.
 - Day 3: ear openings evident.
 - Day 5: feather tracts are all dark. Days 5-8, eyes open.
 - Day 7: feathers fully broken through all tracts except wings
 - Day 12: color on wings first visible
 - Day 13: Down feathers on crown stick out, no exposed skin except abdomen, may clacks. Avoid opening box after Day 13 to prevent premature fledging.
- **Fledging:** 17-22 days +/- depending on weather and food availability. For the first three days, they are very dependent on parents, and by about 10 days begin capturing and preparing their prey. In 3-4 weeks they are on their own. If the female starts another brood, the male will care for the first brood.

WESTERN BLUEBIRD

Nests:



Collection of grasses, weed stems, and, sometimes, hair and feathers. Routinely add ribbons, strips of cellophane, thin bark and leaves to their nest, which may cause some to confuse it with a House Sparrow nest. Occasionally an Eastern Bluebird will add feathers to a nest.





Eggs:






Eggs are pale blue, bluish-white, or white.






Nestling Aging Guide (from Sialis.org):




DAY	PHOTO	DESCRIPTION
		Incubation does not begin until all eggs have been laid, so they will hatch at the same time. Incubation typically lasts 12-14 days. The female may wait about a week to start incubating the clutch if weather is still cold.
0		It can take 24-48 (rarely 72) hours for all eggs to hatch.
1		By Day 1, all eggs have hatched. Parents (both male and female) feed the nestlings at least twice an hour. Later they will remove the fecal sacs.



2		<p>Contour feathers start to develop. Soft gray down is now along the edges of wings, the head and spine. The skin beneath looks blue-black as feathers begin to develop beneath it.</p>
3		<p>At this age the babies weigh about 1/3 of an ounce (10 grams).</p>
4		<p>Feather sheaths begin to emerge on wings. Wings are darker. Eyes are still closed.</p> <p>If any eggs haven't hatched by the 4th-6th day after the others, it's okay to remove them. Unhatched eggs can explode into a stinky mess and cause other problems.</p>

5		<p>Nestlings can't regulate their body temperature for the first six days. Cheeping is louder. Eyes may begin to open as slits.</p>
6		
7		<p>Eyes usually open on Day 5-8. First feathers burst from tip of sheaths. The female no longer broods, because the young can maintain their body temperature by Day 7-9.</p>

8		<p>Eyes open on Day 8-11, and feathers continue to come out of sheaths. By now they should weigh a little less than an ounce (19-25 grams). Feeding visits are about every 5 minutes.</p> <p>Nestlings may cease gaping when nest is monitored. Instead they hunker down, eyes closed.</p>
9		
10		

11		<p>Feather sheaths start to disintegrate (leaving a white dust behind) and wing feathers begin to emerge.</p> <p>By Day 11 the nestlings start to preen, pulling at the sheaths of emerging feathers. They may stretch and hop a little to strengthen muscles.</p>
12		<p>Nestlings are almost completely feathered. White eye rings may be visible.</p>
13		<p>By Day 13-14, males have bright blue feathers. (There are usually more females than males in a brood.) Stop active monitoring now to avoid premature fledging. Females have white edging on outer tail feathers.</p> <p>By this stage, babies are strong enough to cling to the entrance of the nestbox to look out. They have a narrow ring of white feathers around each eye, and their breasts are speckled with gray.</p>

14		No unfeathered areas are visible. At this age, nestlings are capable for short, weak flight.
15		Cobalt blue feathers of the male. Nestlings exercise more, and may stand on the edge of the nest and look out of the nest cavity.
16		Bluebirds generally fledge 16-21 days after hatching, typically 17-18. Development depends on food availability. The parents often get more defensive around the box at this time, and may divebomb passersby. Nestlings are able to hop.

17		
18		<p>Eyes open, fully feathered. Fledge between 16 and up to 23 days. Typically fledge day 18.</p>

TREE SWALLOW

Nest:



Nest of grass or pine needles, usually lined with feathers. Feathers often placed to curl up over eggs. Flatter cup (about 2" diameter, up to 1.5" deep) than bluebirds. Occasionally contain mosses, rootlets, aquatic vegetation, and other plant materials. Some trash possible: cloth, paper, plastic, tinsel, cellophane, rubber bands, birchbark.



Eggs:



Eggs are pure white (may appear pinkish when first laid up to 4 days) with a pointy end. No speckles.



Nestlings:



HOUSE WREN

Nest:



Messy nest of coarse twigs (often with cottony spider cocoons), lined with fine fibers and downy feathers, usually filling box.



The nest cup is deep, lined with grass and feathers, and located towards the back of the box



Males build "dummy nests" in nearby boxes to reduce competition. A dummy nest is a not-so-neat compiling of sticks and twigs in a nest box & will have an unfinished, haphazard look. Male scopes out potential nest sites & will establish his territory by building dummy nests in all or most of the nest boxes in an area. The female will then come along and choose an acceptable nest to put the finishing touches to. The other, unused dummy nests remain, however, through the nesting season & can become a problem by preventing other species from claiming a nest box for themselves.

Eggs:



Tiny glossy white eggs, often tinted pink/buff, with numerous pinkish brown/reddish brown/brown specks that generally form a ring on the larger end of the egg.

Typically have 5-8 eggs per clutch.

Nestlings:



House Wrens nestlings are prone to premature fledging. Normally they fledge 12 to 18 days after hatching, usually 16-18 days.

MOUNTAIN CHICKADEE

Nest:



Made of soft materials, with base of rotten wood chips or lichen, moss or grass, topped with loose fur or hair from mammal scat, owl pellets or other sources. Distinct cup molded in fur, then plugged with a blanket of looser fur used to cover eggs when not being incubated. Notice distinctive layers - lichen and moss on bottom, with soft, lofty fur layer from a variety of critters on top.



Eggs:



The eggs are hidden in a sunken area. Eggs are ovate, smooth shell with little or no gloss, pure dead white to entirely marked with reddish brown dots which may be concentrated on the larger end. Less heavily marked than Black-capped Chickadee eggs.



Nestlings:



BLACK-CAPPED CHICKADEE

Nest:



Use nest box if near wooded area. Downy nest with moss base, topped with fur and soft plant fibers. Female may cover eggs with moss/fur when leaving the box. The nestcup can be estimated to be about 2" diameter. The moss base is about 1" to 1.5" thick.

Eggs:



© Laura Erickson



Very thin-shelled white/cream eggs with light brown/reddish speckles, dots or blotches, little or no gloss, spots may be concentrated

more on the wide end of the egg. Clutch size typically 6-8 eggs, although up to 13 been recorded.

Nestlings:



3 day old chickadee babies.



6 day old BCCH nestlings



11 day old BCCH nestlings



12 day old BCCH nestlings