

White-breasted Nuthatch Nest Box Plans

Sitta carolinensis

The White-breasted Nuthatch is a charismatic 'upside-down bird' that brings incredible energy and specialized pest control to your yard. Building a home for these cavity-nesters is rewarding because they often stay in the same territory year-round, turning your nest box into a focal point for bird activity across every season.

Nest Box Specifications

Entrance hole	1.25 inches (32 mm)
Floor dimensions	4 x 4 inches (102 x 102 mm)
Interior depth	8 inches (203 mm)
Mount height	12-20 feet (3.7-6.1 m) above ground
Facing direction	East or northeast, providing protection from the hot afternoon sun and prevailing westerly winds.

Mount the box on a mature deciduous tree or a sturdy pole at the edge of a woodland. Ensure a clear flight path to the hole and keep the box away from bird feeders to reduce competition and stress from other species.

Cut List

From a 1x6 x 6 ft

Panel	Dimensions	Qty	Notes
Front	5.50" x 10"	1	Drill 1.25" entrance hole 7" from bottom, centered. Score horizontal 'ladder' grooves on the interior below the hole.
Back	5.50" x 16"	1	Extends 3" above and 3" below the box for easy mounting to a tree or post.
Side	5.50" x 10"	2	Cut top edge at a 10-degree angle to shed water; one side should be hinged for cleaning.

Roof	7.25" x 9"	1	Use a 1x8 scrap to create side overhangs; mount with a 2-inch front overhang.
Floor	4" x 4"	1	Recessed 1/4" up to keep it dry; trim corners 1/2" for drainage.

The front, back, sides, and floor are all cut from the 1x6 board (5.5" actual width). The floor must be ripped down to 4" to fit inside the side panels. A separate 1x8 scrap is recommended for the roof to ensure it is wide enough to protect the side seams from rain.

Materials & Construction

Wood: 3/4-inch (19 mm) untreated cedar, pine, or redwood. Never pressure-treated.

Boards: One 1" x 6" x 6' untreated cedar board provides the main body, while a small 1" x 8" scrap is ideal for the roof.

Hardware: 20x 1-5/8" galvanized deck screws, 2x 1-1/2" exterior hinges, 1x 2" galvanized common nail (used as a locking pin for the side door), 2x 3" lag bolts for mounting

Ventilation: Drill two 1/4-inch (6 mm) holes near the top of each side panel to allow hot air to circulate out.

Drainage: Drill four 1/4-inch (6 mm) holes in the floor panel and clip the corners by 1/2-inch (13 mm) to prevent standing water.

Predator guard: Install a 1.5-inch thick wood block (portal protector) over the entrance hole to prevent squirrels from chewing into the box. If pole-mounting, use a 24-inch stovepipe baffle to stop raccoons and snakes.

Materials Checklist

- 1x 1" x 6" x 6' untreated cedar board
- 1x 1" x 8" x 10" cedar scrap (for roof)
- 20x 1-5/8" galvanized deck screws
- 2x 1-1/2" exterior hinges
- 1x 2" galvanized common nail (locking pin)
- Exterior wood glue
- 1-1/4" hole saw or spade bit
- Drill and 1/8" pilot bit
- Measuring tape and carpenter's square
- Sandpaper (80 grit)

Stovepipe baffle (for pole mounting)

Two 3" lag bolts for tree mounting

Seasonal Timeline

Install: Late January to early February across most regions to ensure the box is weathered and available for early scouts.

Nesting start: In the Southeast, nesting can begin as early as mid-March. In the Northeast and Midwest, nesting typically starts in mid-to-late April. Western populations vary by elevation but generally begin in early April.

Clutch size: 5-9 eggs (usually 6-8)

Incubation: 12-14 days

Fledging: 14-26 days after hatching

Cleaning: Remove old nesting material immediately after the first brood fledges in early summer, and do a deep clean with a 10% bleach solution in late fall.

Regional Considerations

The White-breasted Nuthatch breeds across most of the United States and southern Canada, primarily in deciduous forests. They are especially fond of oak, beech, and hickory trees in the East and ponderosa pines in the West.

Nesting begins earlier in southern latitudes and at lower elevations. In the mountainous West, breeding is often delayed by several weeks until temperatures stabilize and insect activity increases.

Raccoons, squirrels, and House Wrens are the primary threats. The recommended 1.25" hole size is critical for excluding House Sparrows, while the mounting height helps deter ground-based predators.

Camera Placement

Because Nuthatches are small and their nests are typically cup-shaped at the bottom of the box, an interior camera should be mounted at the very top of the box. A small, high-definition USB camera with a wide-angle lens works best here, as it can capture the entire floor area where the female will spend most of her time incubating. Be sure to secure all cables against the interior walls using cable clips so the birds don't get tangled.

Nuthatches exhibit a fascinating behavior called 'bill-sweeping,' where they rub crushed insects or vegetation around the entrance hole to deter predators with chemical scents. To witness this, consider a secondary exterior camera. An outdoor-rated camera like a Blink or a wireless trail cam mounted 3 to 5 feet away on an adjacent tree provides the perfect perspective of the bird's acrobatic maneuvers as they land and enter the box.

Lighting is a critical factor for successful observation. While Nuthatches are diurnal, the interior of the box remains dark. Use a camera equipped with 940nm 'invisible' infrared LEDs. Unlike 850nm LEDs, which glow faintly red and might disturb the birds, 940nm LEDs are completely invisible to both humans and birds, ensuring the most natural behavior during nighttime monitoring.

For cable management, drill a small 1/4-inch hole at the top of the side panel, just below the roofline. Route your USB or power cable through this hole and seal the gap with a bit of exterior-grade putty or silicone to prevent drafts and moisture from entering the nesting chamber. This setup ensures a professional, weather-proof installation that won't interfere with the annual cleaning of the box.

Powering with a USB solar panel

Mount a 5V USB solar panel with a built-in battery 1-2 ft above the box on the same post, angled 30-45 degrees from vertical and facing south. Run the USB cable down the post inside split loom conduit (squirrels will chew unshielded wire), enter the box through the same grommeted hole as the camera cable, and seal with exterior silicone. Choose a panel with a 5-10 Ah battery buffer so the camera runs through cloudy days.

Common Problems & Solutions

House Wren competition: Mount the box at least 30 feet away from dense shrubs or brush piles, which are the House Wren's preferred habitat.

Squirrels enlarging the hole: Attach a metal hole protector or a 1.5-inch thick 'predator block' of cedar over the entrance.

Box overheating: Ensure ventilation holes are clear and paint the exterior a light, natural color (if not using cedar).

Blowfly larvae in nest: During cleaning, ensure all old debris is removed and the box is completely dry before the next season.

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