

American Kestrel Nest Box Plans

Falco sparverius

Welcoming the American Kestrel to your property offers a front-row seat to the aerial mastery of North America’s smallest and most colorful falcon. This project provides a critical nesting site for these efficient hunters, helping to stabilize their declining populations while providing natural pest control for your fields and gardens.

Nest Box Specifications

Entrance hole	3 inches (76 mm)
Floor dimensions	7.75 x 9.25 inches (197 x 235 mm)
Interior depth	10-12 inches (254-305 mm)
Mount height	10-20 feet (3.0-6.1 m) above ground
Facing direction	South or southeast, allowing the box to face open hunting grounds and catch the morning sun while staying cool in the afternoon.

Mount on a lone tree, a sturdy 4x4 post, or the side of an outbuilding in an open landscape like a meadow or pasture. Avoid placing boxes near busy roads or areas with heavy foot traffic, and ensure the entrance is at least 20 feet from the nearest tree branch to deter climbing predators.

Cut List

From a 1x10 x 8 ft

Panel	Dimensions	Qty	Notes
Back	9.25" x 24"	1	Provides 4" mounting tabs above and below the main box enclosure
Front	9.25" x 16"	1	Drill 3" entrance hole centered 12" from the bottom edge
Side (Fixed)	9.25" x 16"	1	Cut top edge at a 10-degree angle (16" back, 14" front) to shed water
Side (Hinged)	9.25" x 15.75"	1	Shortened 1/4" at top to allow side-opening for cleaning; use two screws at top as pivots

Roof	9.25" x 12"	1	Provides a 2-inch overhang at the front; bevel the back edge at 10 degrees to sit flush against the backboard
Floor	7.75" x 9.25"	1	Recess 1/4" up from bottom; clip all four corners 1/2" for drainage

All panels are cut from a standard 1x10 board (9.25" actual width). The back and front are full width. The sides fit between the front and back panels. The floor is ripped to 7.75" to fit between the side panels.

Materials & Construction

Wood: 3/4-inch (19 mm) untreated cedar, cypress, or redwood. Never use pressure-treated wood or plywood containing toxic glues.

Boards: A single 1" x 10" x 8' untreated cedar board yields all panels needed for this robust falcon house.

Hardware: 30x 1-5/8" galvanized deck screws, 2x 2" exterior hinges or pivot screws, 1x safety latch or thumb screw, 4x 3" lag bolts for mounting, 2-3 inches of kiln-dried pine wood shavings

Ventilation: Leave a 1/4-inch gap between the top of the side panels and the roof, or drill three 1/2-inch holes near the top of each side panel.

Drainage: Clip the corners of the floor panel at 45-degree angles to provide 1/2-inch gaps for moisture to escape.

Predator guard: Since these are mounted high, a 3-foot (91 cm) metal stovepipe baffle or a sheet metal wrap around the mounting post is the most effective deterrent against raccoons and snakes. Ensure the box is not under overhanging limbs that would allow predators to drop onto the roof.

Materials Checklist

1x 1" x 10" x 8' untreated cedar or pine board

30x 1-5/8" galvanized deck screws

2x 2" exterior grade hinges

1x small gate latch or brass thumb screw

4x 3" lag bolts with washers for mounting

1 bag of kiln-dried pine wood shavings

3" hole saw or spade bit

Drill/Driver and bits (1/8" for pre-drilling)

Combination square and pencil

Miter saw or handsaw

Stovepipe baffle or sheet metal (for predator guard)

Sandpaper (80 grit) for smoothing edges

Seasonal Timeline

Install: Install by late January or early February in southern regions; by mid-March in northern climates to attract early-arriving migrants.

Nesting start: In the Southeast and Southwest, nesting can begin as early as March. In the Midwest and Northeast, kestrels typically begin searching for sites in April, with egg-laying occurring in May. West Coast populations vary significantly based on elevation, with coastal birds starting earlier than those in the mountains.

Clutch size: 4-5 eggs (occasionally 3-7)

Incubation: 28-31 days

Fledging: 28-31 days after hatching

Cleaning: Clean the box annually in late autumn. Remove all old nesting material and debris, then add 2-3 inches of fresh pine shavings as kestrels do not carry their own nesting material.

Regional Considerations

American Kestrels breed across nearly all of North America, from the subarctic regions of Canada and Alaska down through the entire United States and into Mexico. They are most successful in open landscapes with short vegetation where they can easily spot prey.

Birds in the southern half of the US are often year-round residents and may begin looking for boxes during warm spells in February. High-elevation and northern populations are migratory, arriving back at breeding grounds later as the snow melts and insect activity increases.

The primary threats to kestrel nests are raccoons, rat snakes, and European Starlings. A metal post baffle stops climbing predators, while maintaining a 3-inch entrance hole specifically prevents larger raptors or crows from entering, though starlings must be actively managed.

Camera Placement

For American Kestrels, an interior camera should be mounted in one of the top rear corners of the box ceiling. Because these falcons are larger than songbirds, use a wide-angle lens to capture the entire

floor area where the eggs will be laid. Ensure the camera is IR-capable, as the interior of the deep box is dark even during midday.

Kestrels are highly visual and can be sensitive to movement or strange objects. Secure all cables firmly to the interior walls using cable clips to prevent the birds from snagging them. If using a USB-powered camera, route the cable through a small 1/4-inch hole drilled specifically for the wire, then seal the hole with outdoor-rated silicone to prevent drafts.

Exterior monitoring is also highly rewarding for this species. A weather-proof camera like a Blink Outdoor or a dedicated trail cam should be mounted on a separate post or nearby structure 6-10 feet away. This allows you to observe the spectacular food transfers between the male and female and the juveniles' first clumsy attempts at perching on the entrance ledge.

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

European Starling competition: Starlings are the main competitor; if they start building, remove their nesting material daily. Kestrels can sometimes defend the box, but human intervention is often necessary before eggs are laid.

Eggs rolling or breaking on the bare floor: Kestrels do not build nests; you must provide 2-3 inches of wood shavings (not sawdust) at the bottom of the box for egg stability and insulation.

Box overheating: Ensure the box is made of thick 3/4" wood and avoid painting it dark colors. Face the entrance away from the direct afternoon sun (West).

Bees or wasps moving in: Check the box in early spring; if a hive starts, remove it early in the morning. Rubbing unscented bar soap on the interior ceiling can discourage comb attachment.

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