

2020 BARN OWL NEST-BOX PLANS AND INSTRUCTIONS

SITE SELECTION Before installing a barn owl nest-box, be sure the property is appropriate. Barn owls need open areas, like fields and meadows, in which to hunt. In urban areas barn owls do well as long as there are hunting grounds nearby, like parks, ball fields, golf course, cemetery. Avoid placing a box close to power poles or other dangerous prominent objects.

The nest-box needs to be mounted at least 12' off the ground. It can be mounted inside an open building, like a barn, on the exterior of a building, secured on a post or in a large open tree. Where needed, 24" flashing can be attached to the post or tree to prevent raccoons from climbing and accessing the nest-box. Ideally, the box should be situated near one or more large trees for the parents to roost in and from which fledglings can begin to explore their world.

PLACEMENT AND ORIENTATION The entry hole should face away from prevailing winds and North, if possible. Ventilation gap should be on the leeward side. Be sure the approach is clear of any obstacles (branches etc.). Your site selection and placement of the entry hole (right or left side) and ventilation opening should be based on the site.

OUR DESIGN We have extensive documentation on barn owls utilizing various nest box designs and have adapted ours accordingly to be the safest for the owls. The most important elements are:

Overall size: The interior dimensions must allow the owls enough room to stretch and exercise their wings. Research indicates 8 cubic feet (example 30" X 19" X 24") is a minimum requirement. Smaller boxes (i.e. Simmon's design) can lead to overcrowding, which can result in abandonment by the female or injury or death of one or more young.

Placement of the entry hole: The entry hole should be about 2" from top edge (see image) and no less than 16" from the floor, otherwise the owlets may jump or fall out prematurely. The size of the hole is also important - it should be about 5 ½" to 6". The entry hole is placed opposite from the side with the ventilation gap, with the hole's center approximately 13" from the edge.

Score wood to create a few ~1/8" grip grooves just below the entry hole on both the inside and outside. Also, create 3 grip grooves on both right and left sides of the entry hole, at the top.



VENTILATION The leeward side will need about a 1" ventilation gap at the top. See cut sheet. The top of the box should extend over this gap, slightly.

In warmer regions where the average temperature exceeds 80 degrees for extended periods and where the box will receive direct sun for most of the day, we suggest additional ventilation. Enlarge the ventilation gap to 1.5". Additionally, you can add ventilation at the base of the sides, approximately 4" from the floor to fit small 1.5" to 2" no screen vents like these:

<https://ventmastersstore.com/collections/small-round-vents/products/1-5-round-no-screen-vent-brown> .

SUN AND HEAT PROTECTION Where the box receives direct sunlight and where the average daytime temperature exceeds 85 degrees, the box should be painted white and sun shields added to the top and one or more sides that receive direct sun for the greater part of the day.

Sun shields are simply plywood (weatherproofed and painted white) cut the same dimension and attached to the top and sides using a 2" X 4", creating a 2" insulating gap between the surface of the box and the shield.

DRAINAGE There should be at least a dozen 1/2" holes in the floor, evenly spaced.

ASSEMBLY The nest-box can be constructed out of one sheet of 3/4" exterior-grade plywood (labeled Exterior, not Exposure 1) or marine grade plywood. Please use "FSC Approved" plywood where available. We recommend using 2" deck screws and Gorilla Glue to assemble the sides with a pine or redwood 2" X 2" frame. Crown staples (1/4") can also be used.

SEALING AND PAINTING Seal the wood using a water-based weatherproofing stain or exterior paint. We have used BEHR Transparent Waterproofing Wood Finish with good results. Use light colors or light/white primer and paint in warm, sunny locations.

INSTALLATION Install the nest box at least 12' - 15'. We recommend using a 20' pressure-treated 6"X6" post, set 4' - 5' in the ground. Bolt the box to one side of the post.

BEDDING The nest-box does not need bedding as the owls will create a soft dry substrate using their pellets or feathers from birds they kill. If you are compelled to place bedding, place only a few cups of natural aspen chips or natural fir bark. Pine shavings have also been used. **DO NOT USE CEDAR! DO NOT USE HAY OR GRASS!**

PORCHES AND PLATFORMS Our basic design does not require a porch or exercise platform but one can be installed at the front of the box at floor level.

ACCESS AND MAINTENANCE The nest box should be cleaned at least once a year between October and December. Even then, there might be owls roosting or nesting. Quietly inspect the box for occupants beforehand using a smartphone camera on a painter's extension pole.

To access for cleaning, simply remove the top of the box. Be sure to use the appropriate level of protection, like the proper type of respirator mask (N95 or N100), safety glasses and gloves, to reduce your risk of exposure to zoonotic diseases.

OTHER RESOURCES

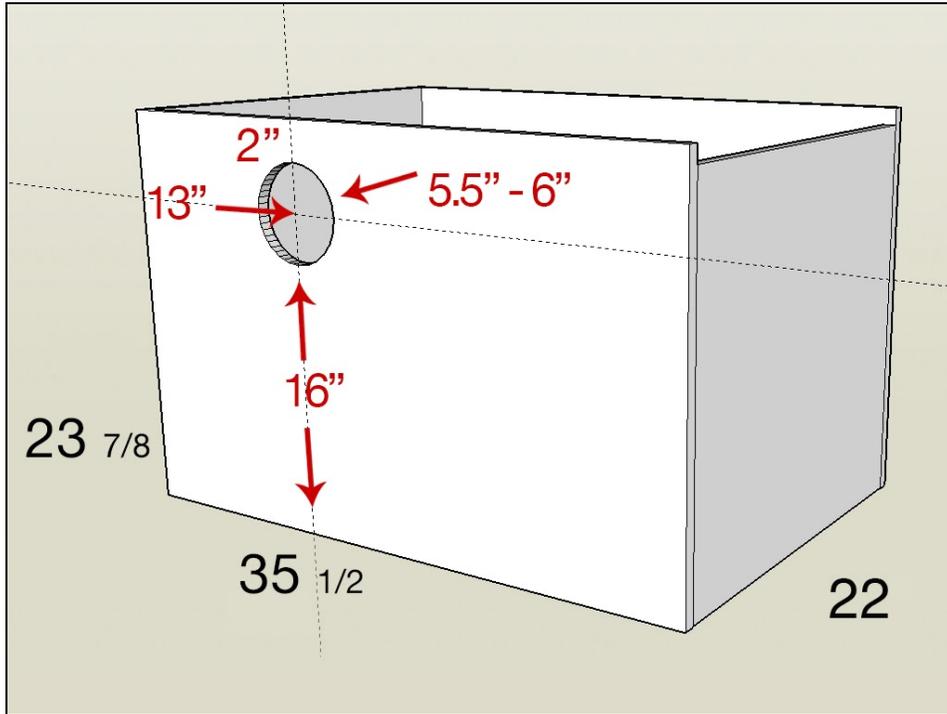
The Barn Owl Trust <http://www.barnowltrust.org.uk/>

The Global Owl Project <http://www.globalowlproject.com/>

Video about choosing the right nest box https://youtu.be/zr8qLyAFI_k

NOTE: THE AMERICAN BARN OWL NEEDS A HOME THAT IS 50% LARGER THAN THE UK's.

<p>Front $35 \frac{1}{2} \times 23 \frac{7}{8}$ caps sides</p>	<p>22×23</p>	<p>Top (what's left over) $\sim 38 \times 24 \frac{3}{8}$</p>
<p>Back $35 \frac{1}{2} \times 23 \frac{7}{8}$ caps sides</p>	<p>$22 \times 23 \frac{7}{8}$</p>	<p>Floor $35 \frac{1}{2} \times 23 \frac{7}{16}$ caps sides</p>



Owl Nest-Box Minimum Standards

The Barn Owl Trust, a leading authority on barn owls, recommends increasing their nest box dimensions by 50% for the American barn owl, equating to a floor dimension of 30" X 24" (5 ft²) and a minimum of 10 ft³ for a box that is 24" deep. Our design is 11 ft³ with nearly 6 ft² of floor space.

Results from research conducted on owl nest-boxes of various sizes indicate smaller boxes often result in injury and premature death of one or more owlets. For example, overcrowding in nest-boxes based on the popular Simmon's design, measuring 23" X 12" X 16", caused feather damage, hock and foot sores, and, likely the demise of at least one chick.

Research indicates a female barn owl will remain in a large spacious nest-box tending to her chicks until the youngest is about 3.5 to 4 weeks old. Females in more confined boxes have been documented leaving prematurely, resulting in the death of the youngest owlets.

Overall size.

The American barn owl stands at about 14" tall with a wingspan as great as 43". If a hen produces a clutch of 6 eggs, which we have found to be about average, the hen would be brooding her eggs and newly hatched chicks for about 60 days. She may take short flights at night, but, for the most part, she remains in the box with her brood.

We have documented hens in spacious nest-boxes move off her eggs/chicks to groom, stretch and defecate. Smaller, confined nest-boxes do not allow her this freedom, and may cause her to abandon the box.

Larger, spacious boxes also allow room for the male to roost in the box during the day with the female and her brood. We have observed a male remain roosting (day) inside a spacious box until the oldest chick was 4 weeks old.

Another reason to provide a larger box is to provide ample room for the developing chicks to stretch and hop about and flap their wings. They are unable to exercise in smaller boxes.

Distance of entry hole from the floor.

At a certain stage, owlets begin food-begging at the entry hole, eager for their parents' return with a meal. If the entry hole is too low, chicks accidentally fall or get pushed out. Chicks that are 7 weeks or younger are relatively dense, weight-wise, and have yet to develop flight feathers to slow their descent should they fall. We have found countless chicks injured and killed from falls from poorly designed boxes.

Placement of the portal is critical for the welfare of the young owls. The Barn Owl Trust, recommends nest boxes be deep with the entry hole at about 18”.

Our own research has shown that an entry hole placed at 16” - 17” from the floor is sufficient to keep young from accessing the portal until they have lost their density and have developed flight feathers.

Distance of entry hole from roof.

When fledglings take their first flights, they are not skilled enough to make it back inside the hole without assistance. We have found that by placing the hole 2” from the roof and adding a few grip grooves to either side of the hole, fledgling owls are able to use their talons to make their way back into the nest box.