

BARN OWL NEST BOX PLANS



PLANS DESIGNED BY:

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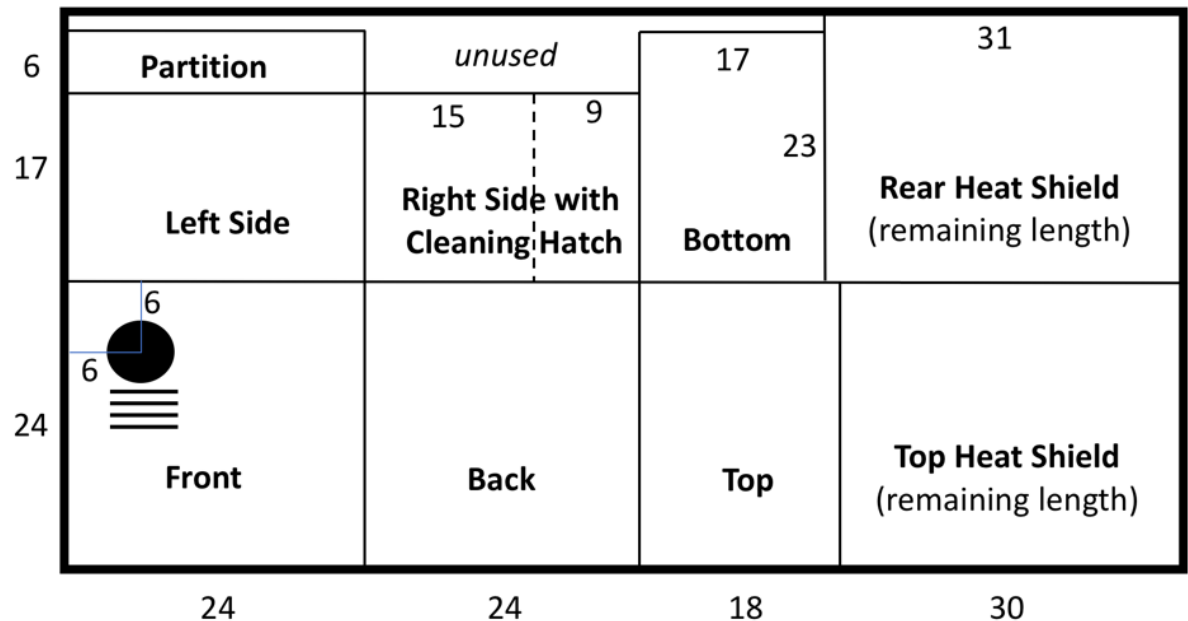
MATERIALS FOR ONE BOX:

- 1 sheet of 1/2 inch untreated plywood (48 x 96 inches)
- Wood glue
- 2 hinges and 1 latch (galvanized) for cleaning hatch
- 24 inches of 1/2 inch PVC
- 8- 1/2 x 4 inch hex bolts (blunt ended)
- 50- 1 1/4 wood screws
- Painting supplies

We are a team of researchers, woodworkers and conservationists and our goal is to make open access Barn Owl nest box plans based on data-driven recommendations. We developed these Barn Owl nest box plans based on our research and experience working with nesting Barn Owls on farms in California.

With this design, we aim to provide adequate space that allows nestlings to exercise their wings as they prepare for flight, and to reduce impacts of heat during hot temperatures. We intend to update these plans as we continue to learn more about the effectiveness of different nest box designs.

Plans for One Barn Owl Nest Box with Heat Shields Using an Untreated Plywood Sheet

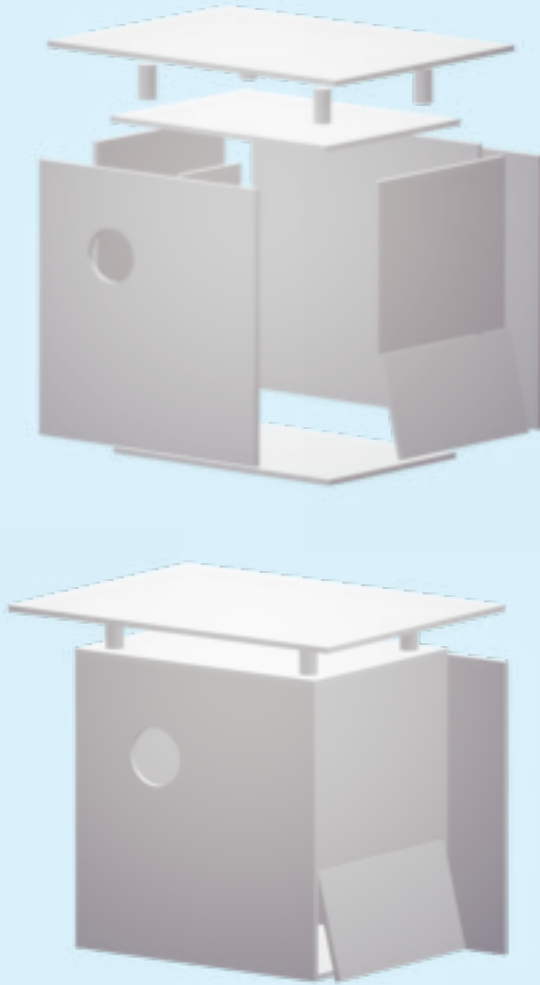


CUTTING ORDER

Cut the plywood sheet starting in the bottom left to take into account the width of the saw blade in the measurements (typically 1/8th inch). The heat shields do not need to be exact, so cut these last.

BOX SPECIFICATIONS

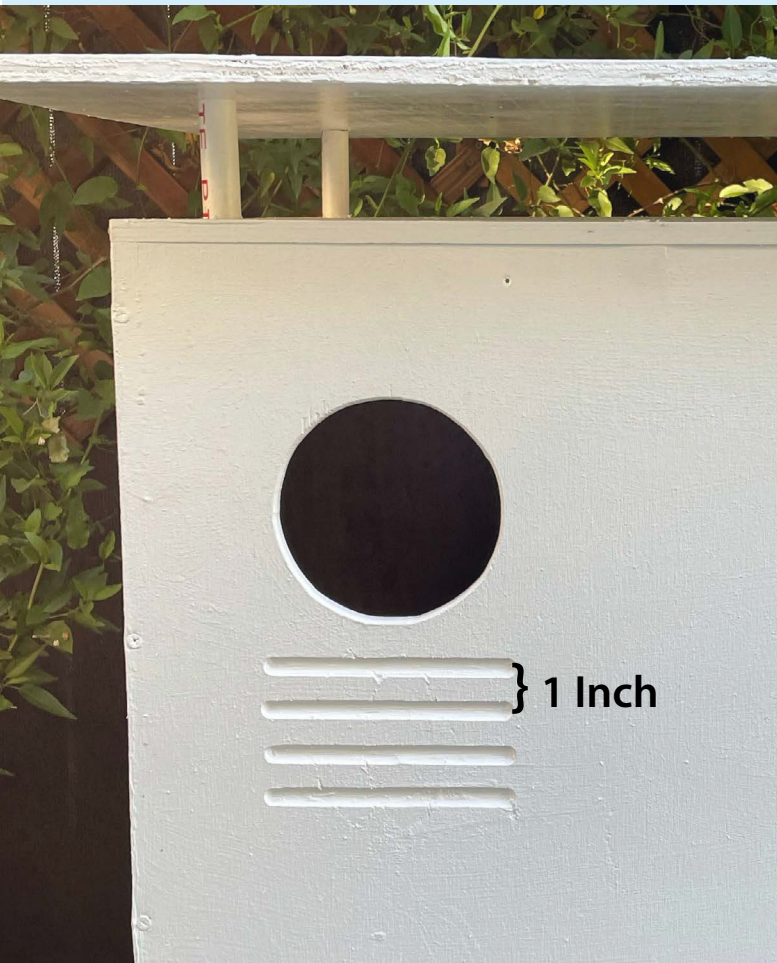
Section	Height x Width (Inches)	Instructions
Top	24 x 18	Sits on top of front, back, and side pieces. Pre drill 4 holes for heat shield attachment - 2 inches from each side of corners. Center the heat shield over top.
Front	24 x 24	The cut ends of side pieces are attached to the interior of the front piece. Entrance hole: 5 inch diameter centered 6 inches from left and top. Grooves: ½ inch, 3-4 grooves spaced 1 inch center to center (see picture). Add some grooves to the inside of the box under the opening hole, similar to those on the front, but can be smaller.
Back	24 x 24	The cut ends of side pieces are attached to the interior of the back piece. Pre drill 4 holes for heat shield attachment on back panel prior to assembly- 2 inches from each side of corners. Center the heat shield, wider side should be horizontally.
Bottom	23 x 17	Attached flush with the interior of all pieces. Drainage holes 8 evenly spaced ½ inch holes.
Left Side	24 x 17	Side pieces are attached to the interior of the back and front pieces. Ventilation holes: 4 holes with 1 inch diameter centered 1 ½ inches from top.
Right Side + Cleaning Hatch	24 x 17	Side pieces are attached to the interior of the back and front pieces. Access door: Cut 9 inches from bottom for access door. Use 2 galvanized hinges and latch. Ensure that screws for the hardware are small enough so they do not go through door completely. Ventilation holes: 3-4 holes with 1 inch diameter centered 1 ½ inches from top.
Partition	23 ½ x 6	Cut ½ inch off height of remaining portion. Attach ½ inch right of hole.
Rear Heat Shield	24 x 31	*Cut this piece last- this piece may be slightly smaller. Attach with 4 inch bolt and 1/2 inch PVC spacers cut 2 3/4 inches long. Center the heat shield, wider side should be oriented horizontally.
Top Heat Shield	24 x 30	*Cut this piece last- this piece may be slightly smaller. Attach with 4 inch bolt and 1/2 inch PVC spacers cut 2 3/4 inches long. Center the heat shield, over top.



Top: Inside view of box.

Bottom: Outside view of box.

Both images show top and back heat shields.



*Entrance hole: 5 inch diameter centered
6 inches from left and top*

*Grooves: ½ inch, 3-4 grooves spaced
1 inch center to center*

RECOMMENDATIONS

- Assembly Order: 1) front, left side and back 2) bottom 3) partition 4) top piece of right side 5) top 6) add bottom piece of right side and heat shields after painting.
- Use ½ inch untreated plywood (48 × 96 inches).
- Glue and tack all pieces together according to instructions in the table.
- Carefully pre-drill evenly spaced holes and secure with 1 ¼ inch wood screws.
- Use furring strips to increase rigidity on heat shields and inside of box. (The unused portions of wood can be cut into strips for this purpose.)
- Attach cleaning hatch with galvanized hinges and a secure latch.
- Paint only the outside of the box with primer and light colored exterior paint, ideally use low VOC (Volatile Organic Compound) paint, if possible.
- After hanging nest box fill with 2 inches with untreated wood chips. Aspen chips are a good choice, if available.
- Use heat shields and add additional ventilation holes in areas where summer temperatures regularly increase above 85-90 degrees F.
- Mount boxes on galvanized metal poles to keep mammalian predators from climbing a wooden pole or tree to access the box – especially if the box includes a porch.
- Boxes can be attached to the pole from either the bottom or back using a metal plate or the back of the box (not heat shield) using sturdy pipe grip ties.

CONSIDERATIONS

- Some evidence suggests an exterior porch is beneficial for the young as they prepare for flight, but definitive evaluation of pros and cons of a porch are lacking.
- Even larger boxes than this design may be beneficial for owls, although they may be difficult to deploy due to size and weight of box. See: <https://www.humane-choice.com/wp-content/uploads/2020/03/2020-BARN-OWL-NEST-BOX.pdf>
- Nest boxes need to be checked annually for structural integrity and deterioration—poorly maintained boxes can pose hazards to owls!
- Nest boxes should be visited beginning in late summer through fall to determine if cleaning is necessary. Do not disturb nest boxes if owls are present. Accumulated pellet debris should be removed and replaced with wood shavings. Wear an N95 mask during this process for protection.
- Nest boxes placed with open natural habitat nearby, such as grasslands or oak savannah, have a higher chance of occupancy.
- Place away from roads to reduce vehicle collisions.
- Hungry nestlings may be noisy at night, so consider noise when placing near a house.