

Building Community Roll-Out Nest Boxes

—Mike Milligan

These nest boxes are an inexpensive alternative to commercially available roll-out or standard nest boxes. They are gimbaled to maintain proper functioning while on uneven pastures, which commercial boxes do not offer. This size nest box will accommodate 200 hens.

Benefits of using these roll-out nest boxes include cleaner eggs, reduced or eliminated broodiness, once-per-day egg gathering, no hens sleeping in the nest boxes, and easy clean out. I will guide you through the construction process of this nest box. This design may not be compatible with all egg mobile designs, as the full weight of the boxes is supported by the ceiling. I build several boxes at one time, so my use of materials was more efficient and my cost was about \$0.75/hen capacity. For a single box you can expect the cost to be around \$300-\$350.

Design

This design is double sided to make the best use of materials and to make balancing on the gimbal very simple. You can build multiple units and hang them individually to accommodate your amount of hens. You can also reduce the length for use with a smaller number of hens by assuming every four linear feet of nest box space will accommodate 50 hens.

I have two nest boxes mounted side-by-side on the same gimbal, but my gimbal is made from steel and is welded. I have revised the design to use all wood for the gimbal so it can be easily reproduced.

Almost everything can be sourced from your local hardware store. I recommend buying the hardware from a store that sells it by the pound rather than by the piece. If you will be making multiple boxes I recommend ordering a 100' roll of garage door gasket, which can be found for about \$40 on Amazon. Also, the PVC coated hardware cloth can be hard to find locally. I found the best prices with shipping at Academy Fence Company: www.academyfence.com/973-674-0600.



Top: Completed roll-out nest boxes.

Bottom: Eggs are collected by opening the "gathering lid."



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Material List

Lumber

- 4 sheets 5/16" OSB board
- 3 — 2x8x8'
- 8 — 2x2x8'
- 6 — 2x4x8'
- 5 — 2x6x8'
- 1 — 2x6x10'
- 3 — 2x4x12'

Hardware

- 2 — eye bolts 1/2" diameter x 6" long
- 12 — hinges (Used door hinges are best)
- 4 — 3/8"x3" bolts
- 8 — 3/8" washers
- 4 — 3/8" nylon lock nut
- 1lb — 3" deck screws
- 2lb — 15/8" deck screws
- 1lb — #10 washers
- 24 — 1/4" x 1.5" bolts
- 24 — 1/4" nylon lock nuts
- 24 — 1/4" washers
- 2 — sets of roller cabinet latches
- 12 — 1/2" x 4.5" bolts
- 24 — 1/2" washers
- 12 — 1/2" nylon lock nuts
- 18 — 1/2" x 3" lag screws
- 12 — 1/2" x 5" lag screws
- 2- 1' lengths of 1/4" chain
- 16' of 1/2" 19 gauge PVC coated hardware cloth
- 28' of garage door gasket
- 1 tube of silicone caulking
- 3 gallons oil based paint

Cut Sheet

Plywood

- 2 — 18"x8"—hen excluders
- 1 — 18"x7'11"—middle divider
- 2 — 18"x24"—side panels
- 1 — 4'x8"—bottom
- 1 — 2'x8"—top
- 2 — 1'x8"—gathering lids

Lumber

- 2 — 2"x8"x8' — cleanout panels
- 4 — 2"x8"x18" — cleanout panel sides
- 2 — 2x2x8' — hen excluder attachment point
- 2 — 2x4x95 — lid attachment point

Rollout Frames

- 2 — 2x4x94.5" — rear
- 2 — 2x2x94.5" — front
- 6 — 2x2x18" — spacers

Nest Box Supports

- 5 — 2"x4"x64"— nest box supports (cut from 2x4x12')
- 2 — 2x4x8' — perches

Gimbal/ Box Support

- 3 — 2"x6"x8' — longitudinal support
- 4 — 2"x6"x48" — lateral and vertical arms
- 4 — 2x6x30" cut with 45 degree angles — vertical supports (cut from 2x6x10')
- 2 — 2x6x16.5" — cut with 45 degree angles — vertical support tie plate

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Assemble Nest Box (Figure 1)

To assemble the box, I found it easiest to first mark the middle line on the side panels, top, and bottom to align the middle divider. Then using the 15/8" deck screws, toenail the pieces together every 6 inches, alternating sides.

Hen Excluder Support, Gathering Lid Support, and Cleanout Panel (Figure 2)

After the box is assembled, install the hen excluder support. Place the 2x2x8' at the edge of each side of the top of the box and screw to the box with 15/8" deck screws. Now you can install the 2x4x95" gathering lid support. Measure 9" from the top of the box and again to 12.5". The 2x4x95" will be screwed between these two measurements using 3" deck screws.

Now you can assemble the cleanout panel. Rip a bevel on the two 2x8x8' boards using a table saw or other method. Using 3" deck screws, assemble the 2x8x18" with the 2x8x8' with the bevel facing out.

Mark the pivot point for the cleanout by measuring 4" in and 5" up from the bottom of the nest box enclosure. Line up the cleanout with the edge of the nest box bottom and drill a 1/2" hole through the box and cleanout. Install a 3/8x3" bolt with washers and nylon lock nut.

Install Hen Excluder and Gathering Lid (Figure 3)

Now you can install the hen excluder and gathering lid. Layout your hinges and pre-drill 1/4" holes for mounting. Attach with 1/4"x1.5" bolts, washers and lock nuts. Now screw into place using 15/8" deck screws into their respective support bars. Install the cabinet latches onto the gathering lids, centered, with the roll latch mounted on the underside of the top of the nest box.

The box is now complete and should be painted with at least two coats of a dark tinted oil based paint. Once the paint is dry you can staple fabric across the top of the opening to give the hens some privacy and

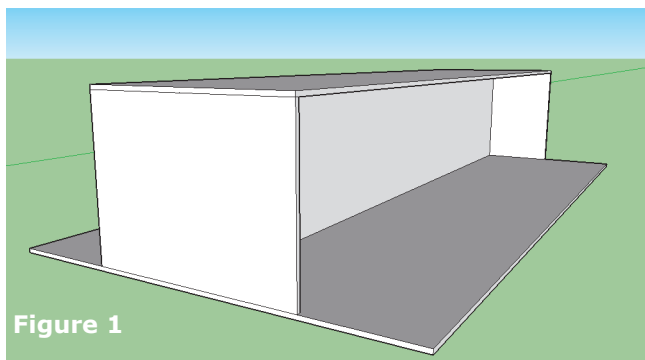


Figure 1

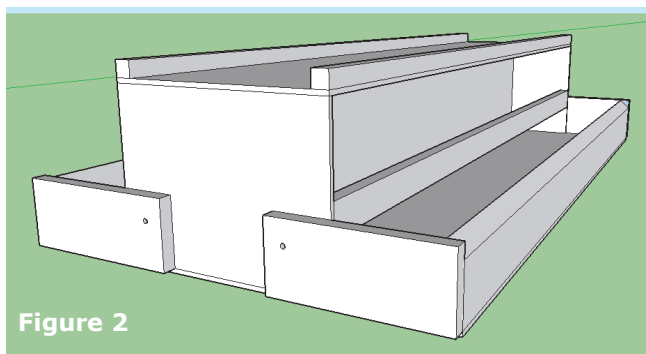


Figure 2

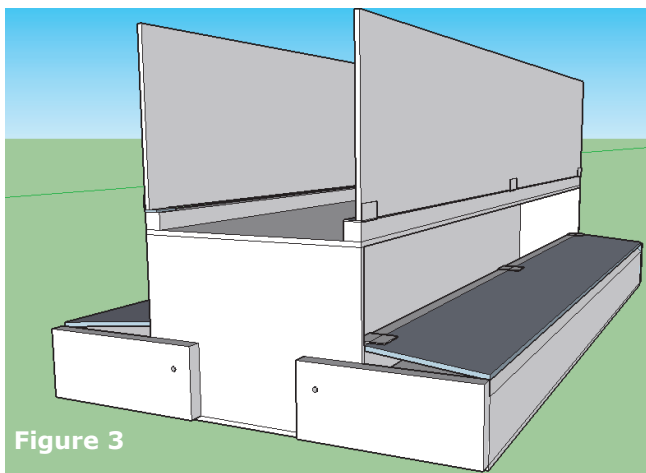


Figure 3

make the boxes a bit darker. Slit the fabric every six inches to give better access and ventilation.

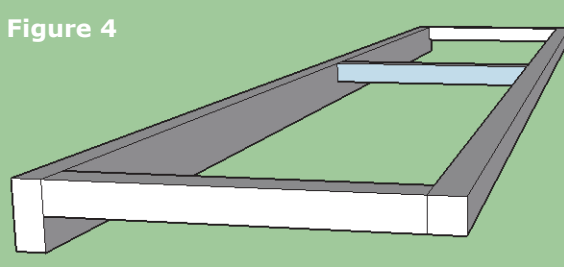
Wire Frame (Figure 4)

Using the 2x4x94.5", 2x2x18", and 2x2x94.5" assemble the frame for the hardware cloth. Line up your lumber square and pre-drill 3/16" holes. Screw together using 4"x1/4" lag screws and washers.

After you finish the frame, you can install the hardware cloth. Cut the hardware cloth to length and en-

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Figure 4



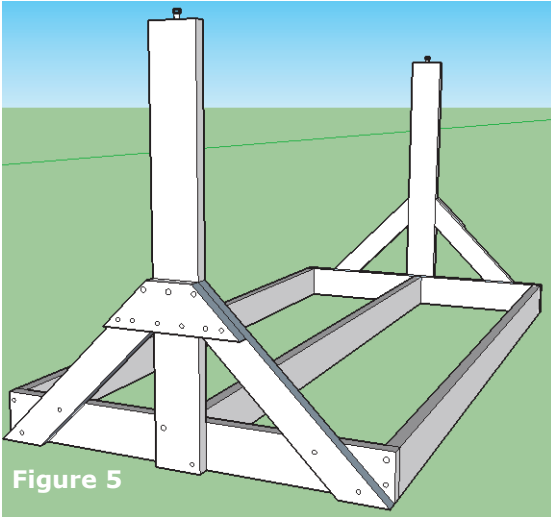
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sure that you position the side with the vertical lines of the cloth facing up. Line up the cloth flush with the rear frame member with the excess width hanging off the front. Using 15/8" screws with a #10 washer, screw it every 6" to the frame, making it as taut as possible. Once screwed into place you can fold up the remaining width of the cloth to catch the eggs; fold it over approximately 150 degrees. Install the garage door gasket over the frame members to prevent cracked eggs. Screw into place every foot and then put a glob of silicone caulking over every screw head. You will only need to install the gasket over the rear and middle dividers.

Gimbal Construction (Figures 5 & 6)

Assemble the 2x6x8' and 2x6x4' lateral and longitudinal supports using 5" lag screws with washers. Be sure to pre-drill your holes. Then install the vertical 2x6x4" and vertical supports using 1/2"x4.5" bolts with washers and lock nuts. Using the tie plate and 3" lag screws, secure the vertical supports with the vertical riser. Pre-drill a hole for your eye bolts in the top of the vertical riser and install them.

Figure 5



Layout the 2x4x64" nest box supports on the gimbal as shown in Figure 6 and toenail them into place with 3" screws. Screw the 2x4x8' perches into place as shown with 3" screws. Place the nest box onto the gimbal and secure it with 15/8" screws. Insert the wire frames.

Hang Nest Box (Figure 7)

Hanging will largely depend on your egg mobile design and will require some ingenuity on your part. The nest boxes should be low enough so the hens can access them easily and high enough that you can gather the eggs easily. Mine are mounted 30" from the ground, but I have intermediary perches that are 18" from the ground that the hens will jump onto and then onto the nest box. Ensure that the connection points on your egg mobile are sufficient to hold the weight of the box and hens. I recommend using a 400 pound working load limit chain to connect from the eye bolts to the egg mobile. Depending on the texture of your pasture and your towing style you may want to have a way to secure the box from swinging while moving to prevent injury to the box, egg mobile, or hens.

Figure 6

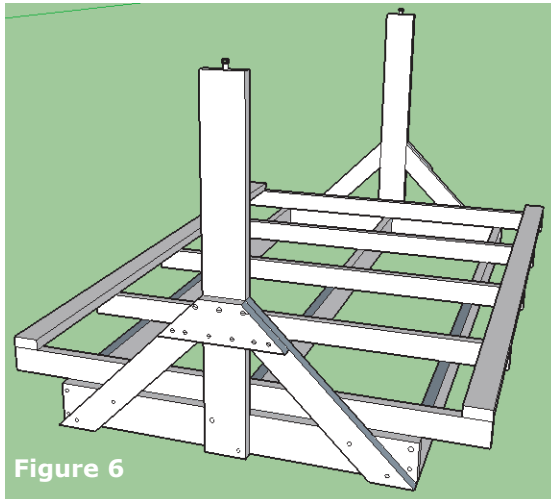
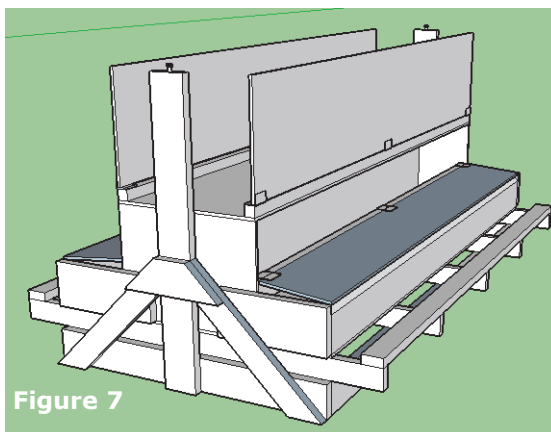


Figure 7



Mike Milligan raises pastured poultry in South Carolina.