

Woodworking *for* Wildlife

*Homes
for
Birds
&
Mammals*

Newly Revised Second Edition

*Nongame Wildlife Program
Section of Wildlife*



*Department of
Natural Resources*



7. Eastern Bluebird

Figures 4b and 5 (Pages 84, 86)

Eastern bluebirds are one of the most popular of native songbirds. Their brilliant blue color, delightful songs, clean habits, and family devotion have long provided happiness and inspiration to people.

Ideal bluebird habitat is comprised of mixed hardwood forests and grasslands. The grassy areas may be meadows, oak savannahs, pastures, yards, cemeteries, golf courses, highway rights of way, or prairies. It is best if the grass is short or sparse. Mowed or grazed areas provide good habitat. There should be either power lines, fenceposts, or scattered trees in the grassy areas to provide feeding perches. Bluebirds will sometimes nest in the back yards of homes in rural areas or on the fringe of urban areas. Normally they nest in rural areas away from the farmstead sites because competition with house sparrows is often too great near the farm buildings. You can give bluebirds an edge in such areas by trapping and removing house sparrows.

Bluebird nests are neat, cup-shaped structures made of fine grass. Usually there are five pale blue eggs in a clutch. For more details, see the book: *Bluebirds in the Upper Midwest*, by Dorene H. Scriven.

The Peterson bluebird house shown in Figure 4b is the best type of bluebird house. It is relatively safe for bluebirds and is easily checked and cleaned.

Eastern bluebird.



The most successful bluebird houses are those the



Photo: Dick Peterson

A bluebird nest normally contains five to six pale blue eggs.



A nestling bluebird begs for food.



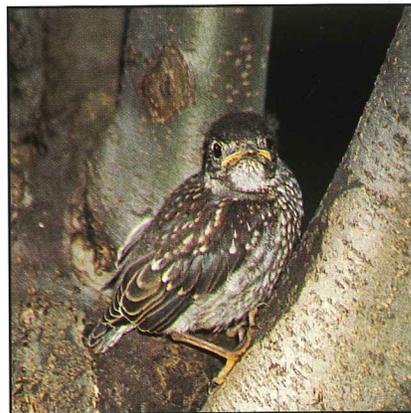
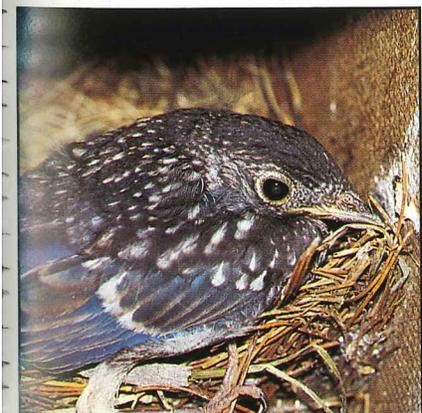
Photo: Dick Peterson

Eastern bluebirds are devoted parents that feed their young from dawn to dusk.

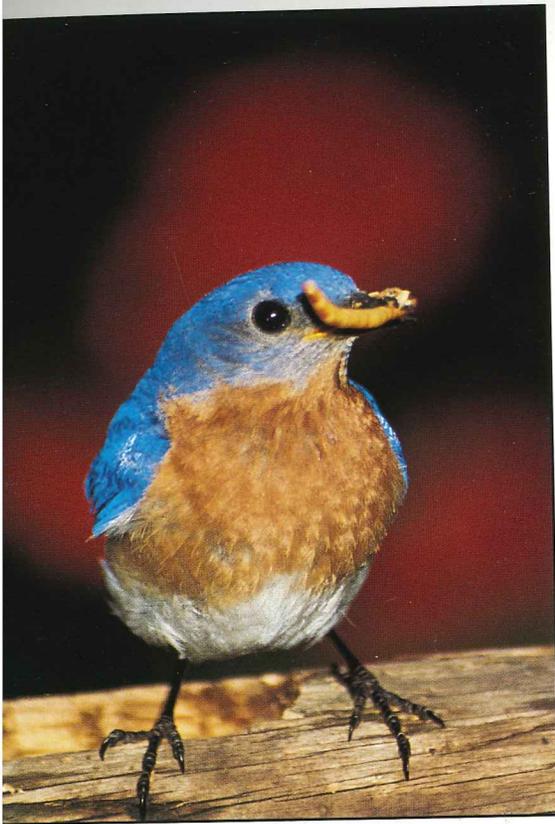


This 18-day-old bluebird is ready for its first flight.

that are checked weekly from April through August. Checking allows prompt response to any problems that occur.



This bluebird has just completed its first flight.



The eastern bluebird eats a variety of small insects and caterpillars.

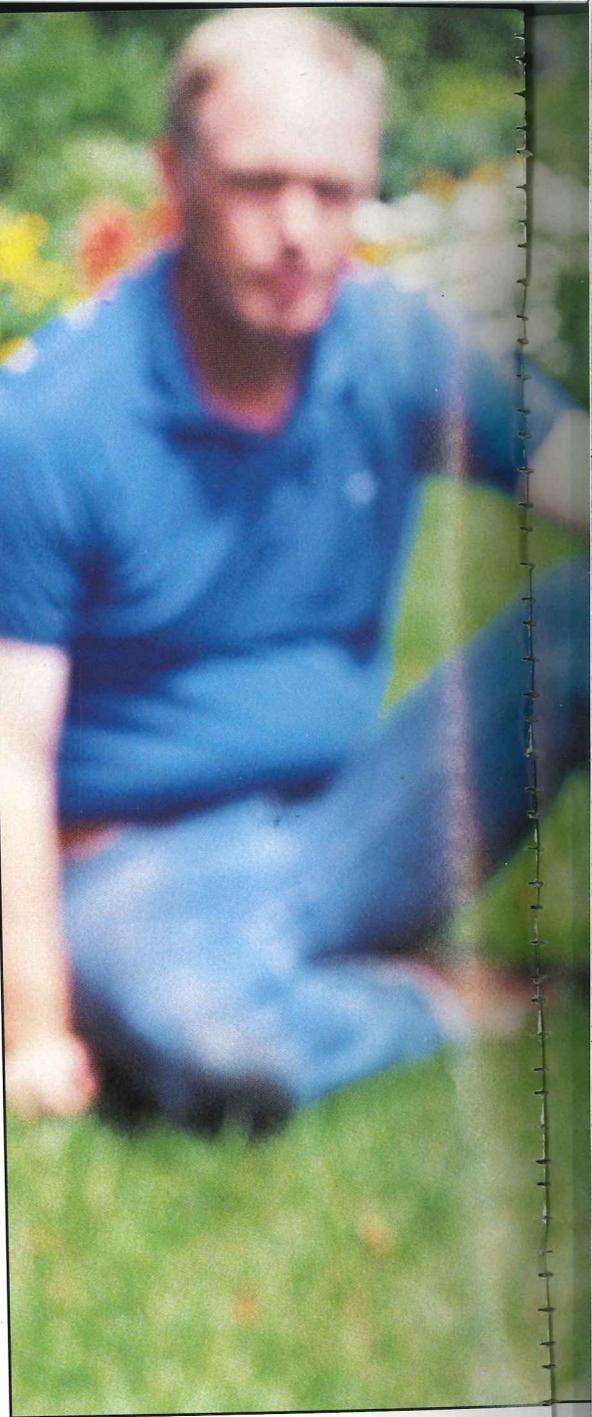
The seven parts of this house are assembled in this order: First, the inner roof is toe-nailed to the top front edge of the back. Second, the floor is toe-nailed to the back 10-1/2 inches below the top. Toe-nailing may be easier to do if you hot-glue the pieces together first. Third, one side is nailed to the resulting frame. Then the other side is nailed to the frame. Next the swing-down front is fastened by nailing one nail to each side of the base. A third nail is pounded part-way into the side near the entrance hole. This is pulled out each time the house is checked. Finally the outer roof is nailed on top. This top serves primarily as a cat guard. Figure 4a shows the detail necessary to mass produce the Peterson bluebird house.

A one-board bluebird house (Figure 5) is much easier to build than the Peterson house and is

included here for the benefit of young people or for adults who do not have access to table saws or radial arm saws. This type of house is more vulnerable to predation by house cats so it is best used on free-standing posts that have tin or aluminum sheets stapled around the support post. The post can also be smeared with axle grease to prevent cats and raccoons from climbing the post. Some people feel that sparrow use in the one-board house can be diminished by cutting a 3-inch-diameter hole in the roof and covering the hole with 1/4- or 1/2-inch hardware cloth mesh. Bluebirds don't seem to mind the "sunroof" but sparrows may be discouraged by it. Such open top nests need to be covered in March and April to avoid mortality during spring ice storms.

Either the Peterson or one-board bluebird houses should be placed 5 to 6 feet above the ground and spaced about 100 yards apart. The entrance hole should face north, east, or northeast to prevent sunlight from shining into the hole and overheating the box interior. A bluebird trail consists of five or more houses placed along a road or fence line. The houses should be ready by late March and should be checked every seven to 10 days from late March until mid-August. A nest should be removed as soon as a brood leaves its nest box. This allows a second brood to be raised.

To decrease or eliminate nest box competition from tree swallows, it is best to pair nest boxes 25 feet apart. Then place the next pair of houses 100 yards away. Bluebirds will normally occupy one nest box and the tree swallows will nest in the other box



without fighting the bluebirds. (Pairing does not reduce competition from house sparrows.)

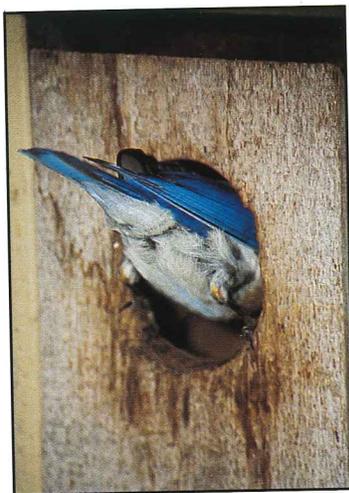
To prevent predation by raccoons in Peterson nest boxes, the Noel raccoon guard is extremely effective (see page 18). This guard is a 1/2-inch-mesh hardware cloth guard that is stapled to the front of the birdhouse.

If house wrens fill a bluebird house with sticks, the nest box is probably too close to woods or



brushy areas. Try moving the post another 20 to 25 feet out into the open.

Sparrows can be trapped and removed from the Peterson bluebird house by using a sparrow-trap front that is available from Dave Ahlgren, 12989 Otchipwe Ave. N., Stillwater, MN 55082; or from The Bird House, 5898 Omaha Ave. N., Stillwater, MN 55082. The Noel raccoon guard and Peterson bluebird houses are also available from these suppliers.



Bluebirds in your back yard can provide hours of enjoyment as you watch them raise a family in the nest box you built for them.

Bottoms up! A bluebird feeds its young.

Note: house finches are a relatively new nesting species in Minnesota and they may nest in bluebird houses. The Minnesota Department of Natural Resources is interested in such nest records.

Figure 4b

Peterson Bluebird House

(See page 83 for details on making 10 houses at a time)

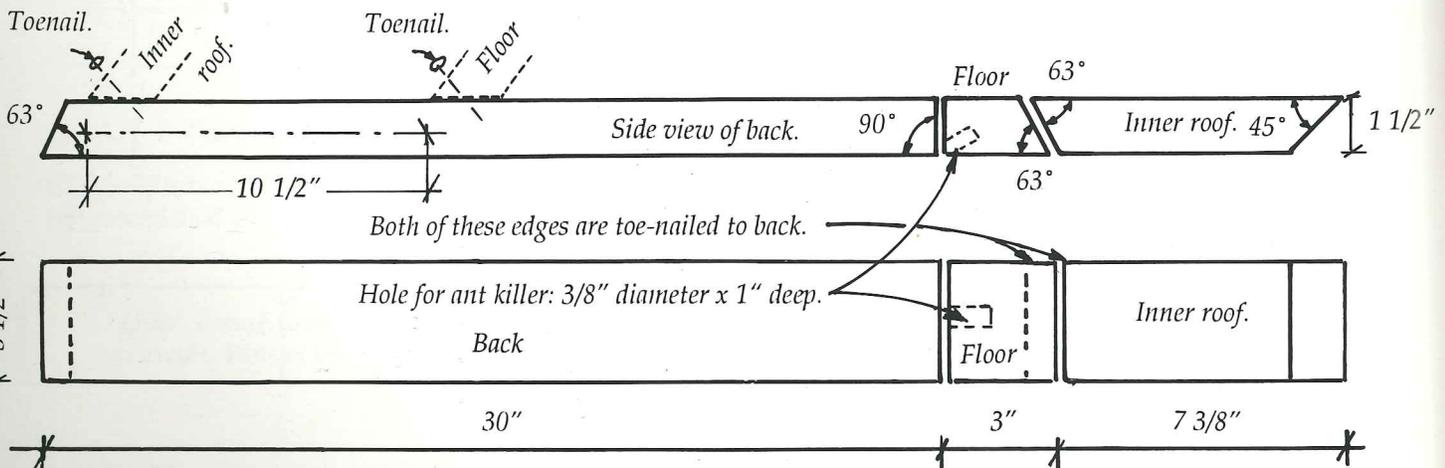
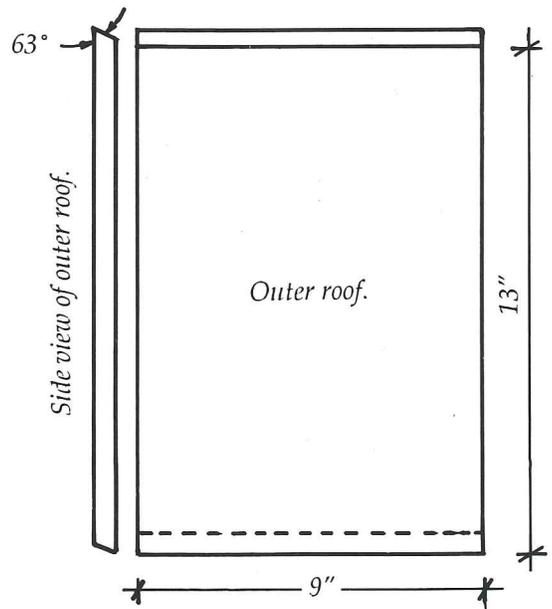
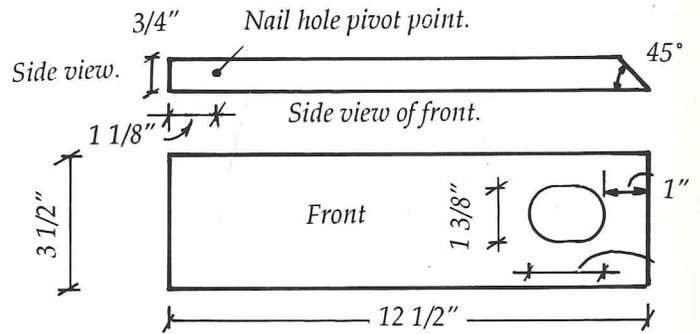
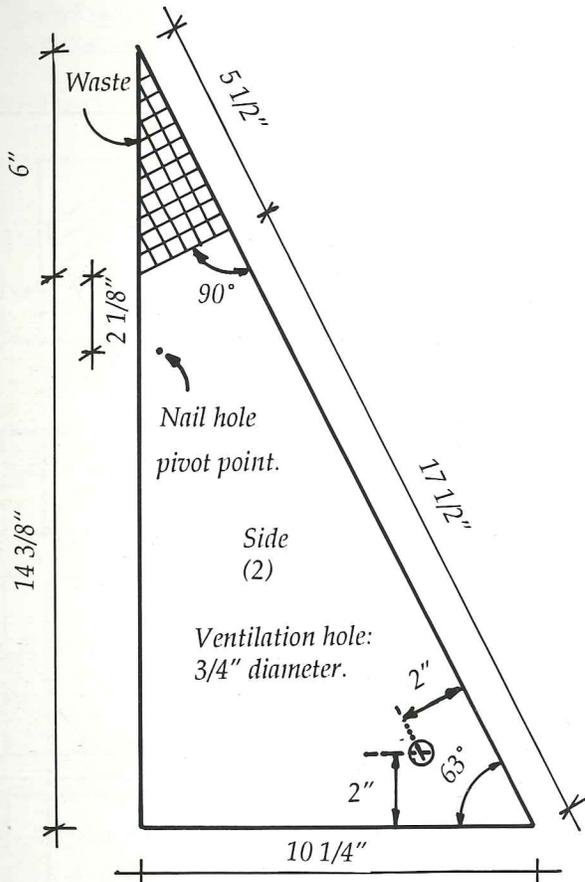
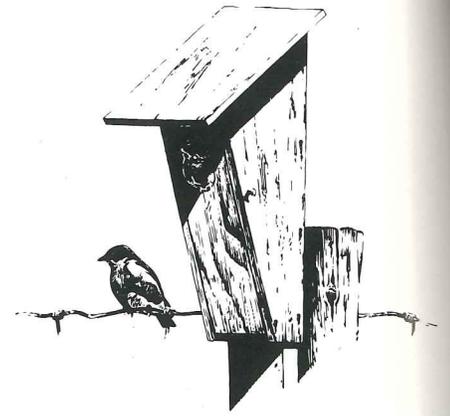
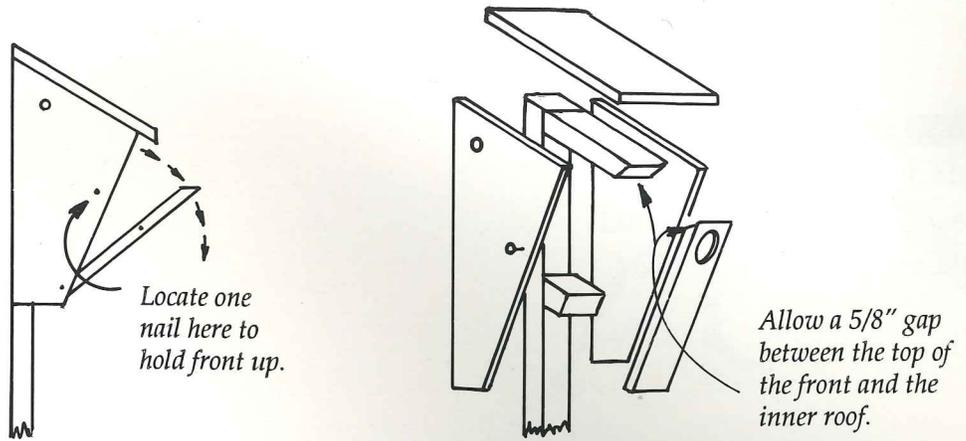


Figure 4b
Peterson Bluebird House
 (Continued)

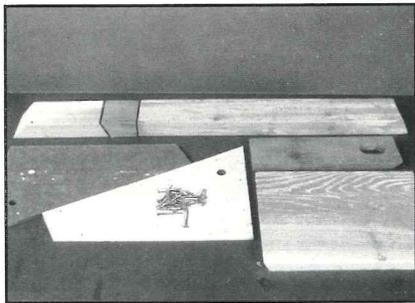


The most commonly known bluebird house is a rectangular house with a 1 1/2" diameter entrance hole. A hole any larger will admit European starlings. This house is relatively easy to make, but it should be on a predator-proof post to avoid predation by cats.

But probably the best all-around design is the Peterson bluebird house, developed by Dick and Vi Peterson of Brooklyn Park, Minnesota after experience with over 3500 bluebird houses.

It meets all the requirements of a bluebird house. The front opens for easy cleaning. The sloping roof with wide overhang discourages cats.

There are provisions for insulation, ventilation, drainage, and ant control.



A

A. The Peterson house has seven parts and is assembled in this order:

B. The inner roof is toe-nailed to the back.

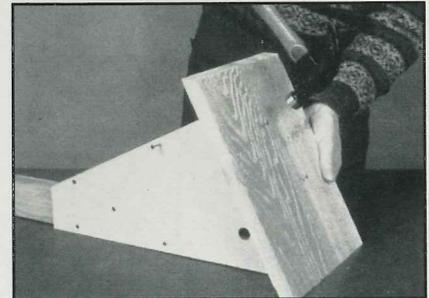
C. Then, the floor is toe-nailed to the back.

D. Third, one side is nailed to the resulting frame.

E. Then the other side is nailed to the frame.

F. Next the swing-down front is fastened by a nail into each side. A third nail is pounded part-way into the side near the entrance hole. This is removed each time the house is checked.

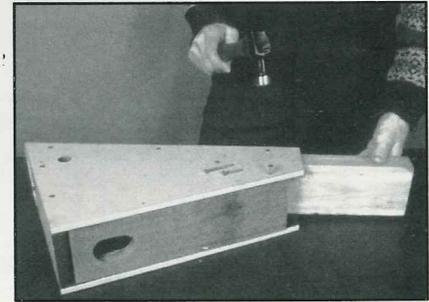
G. Finally, the outer roof is nailed on top.



G



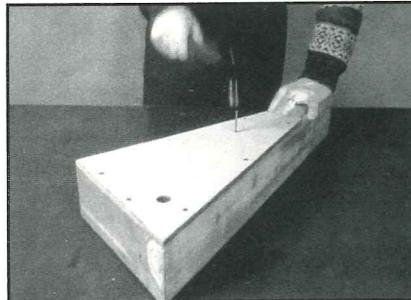
B



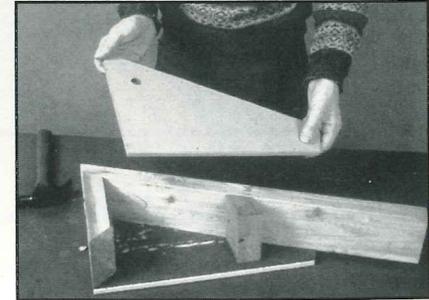
F



C



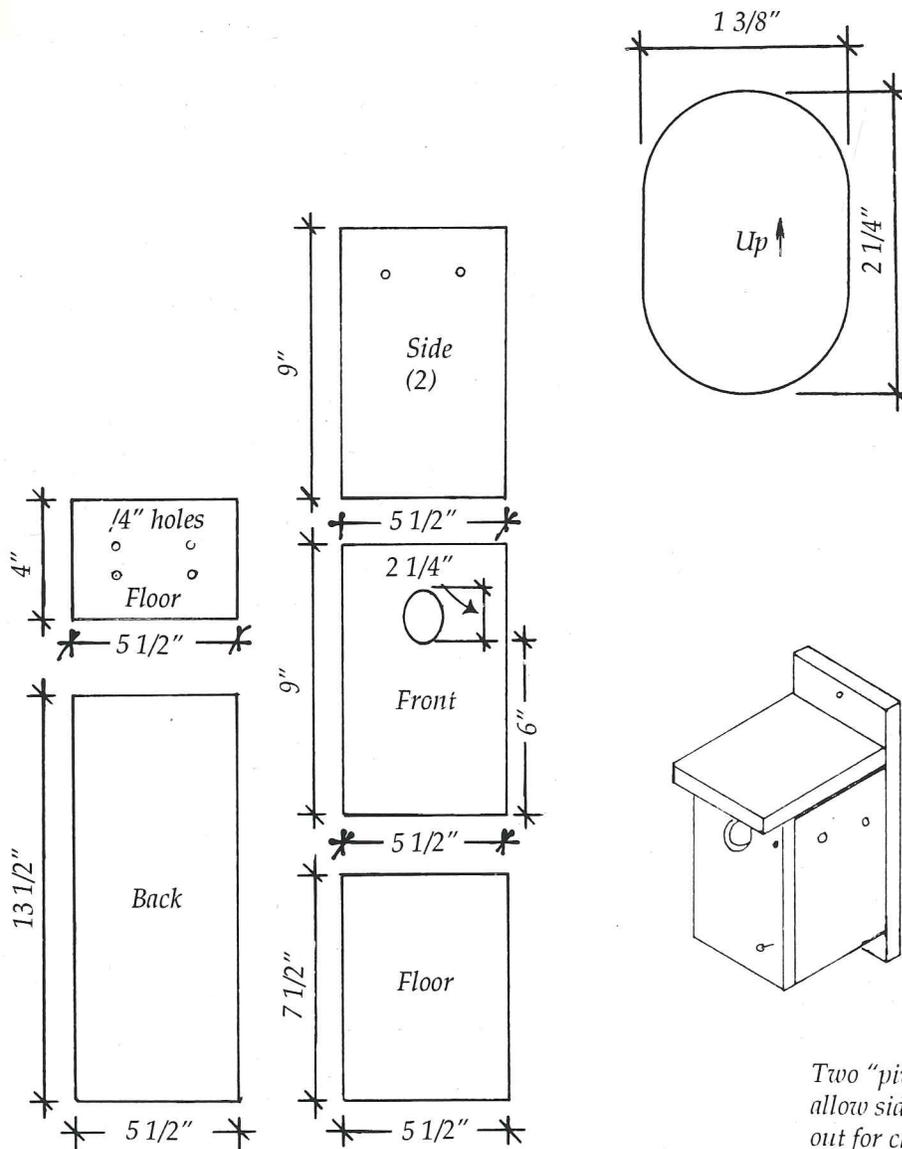
D



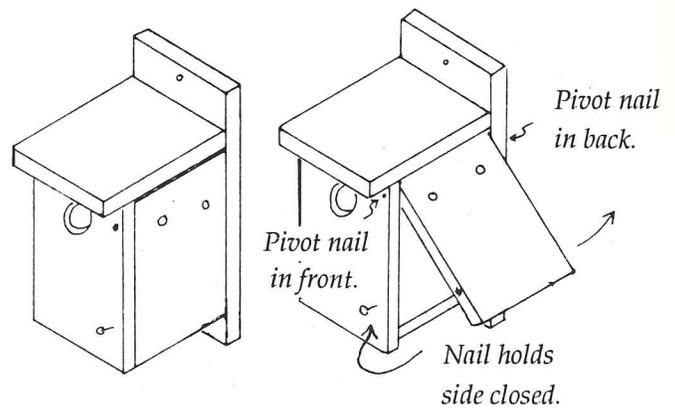
E

Figure 5

Tree Swallow, Eastern Bluebird, and Great Crested Flycatcher Nest Box

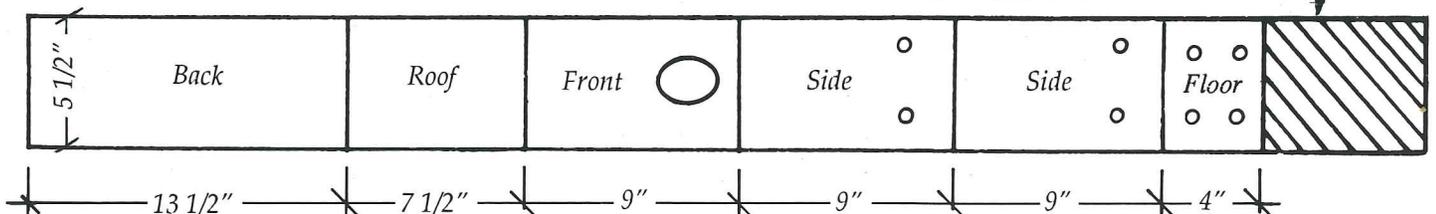


Note: Entrance hole for Great Crested Flycatcher should be a round hole 1 3/4" in diameter.

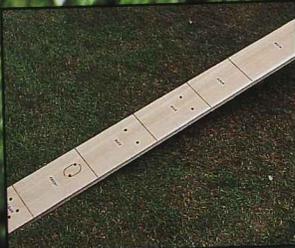


Two "pivot" nails allow side to swing out for cleaning. Use one nail at bottom to close side.

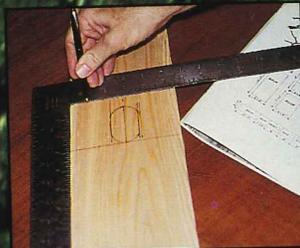
Lumber: One 1" x 6" x 6'



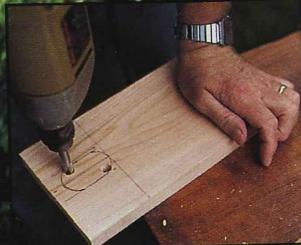
How to Build a One-Board Birdhouse



1. Select a board that is straight, with few knots, and without split ends. Cedar is best. Cedar will have one smooth side and one roughened side. Assemble the house so the roughened side faces outward.



2. Using a square, mark the board as indicated in Part 4. (pp. 79–108) Remember to allow for the width of the saw blade.



3. Drill the entrance hole, ventilation holes, and drainage holes before assembling the house.



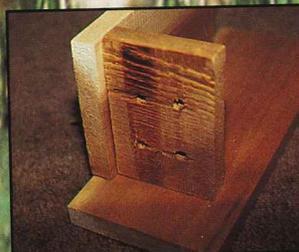
4. Cut out the pieces as marked.



5. Cedar is prone to splitting, so drill the nail holes. Use a drill bit slightly smaller than the nail diameter. This is especially desirable if you are having young people assemble the nest boxes.



6. Vertically center the left side to the back of the nest box, drill two holes, and fasten with wood screws or ring-shank nails.



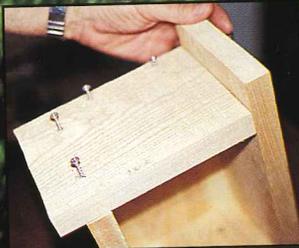
7. Fit the floor section into the box so it is 1/4 inch up from the bottom edge of the left side. Fasten the floor to the left side and back.



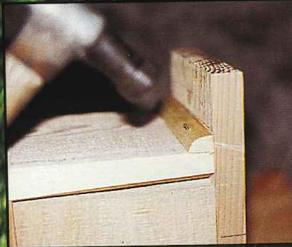
8. Fit the front section onto the box so the top and bottom edges are even with the left side.



9. Fasten the front to the floor and side.



10. Fasten the roof to the front, left side, and back.



11. Nail a quarter round along the top rear edge of the roof as a rain guard.



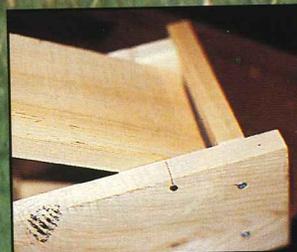
12. Using a square, mark a horizontal line about 1-1/2 inches down from the roof along the right side of the box. Since you will only be using two nails as your pivot points, this line will show where you must drill holes on the front and back so the side will tip out evenly.



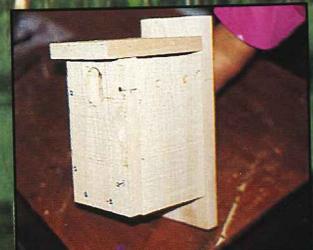
13. Pre-drill the nail holes. Then insert the right side—this piece must be attached last. Before nailing, bring the side down about 1/8 inch so there is a small gap between the roof and the side. This makes it easier to open.



14. Drill one last hole at the lower front edge into the right side. This nail, partly nailed in, will be pulled out each time the nest box is checked.



15. The right side is pulled open from the bottom to inspect the box.



16. A complete one-board birdhouse!

General House and Platform Instructions

Bird and mammal species each need different kinds of houses or platforms in different habitats. These general instructions will help you build and place houses and platforms for the most popular occupants of wildlife homes.

These general instructions apply to all plans.

1. Do not make a box for "birds." Build it for a specific kind of bird or mammal. Different species have different house-size and entrance-hole requirements.
2. Provide a hinged side or roof so houses can be easily checked and cleaned out each year. Hinges should be rustproof. Duck and owl box roofs kept shut with a hook and eye can be opened by raccoons. It is much better to use several paired roofing nails with large heads on the side of the roof and on the upper edge of the side. Wire these paired nails together.
3. At least four 3/8 inch diameter drain holes should be drilled in the bottom of every house, except the Peterson bluebird house and the Helmeke wood duck nest box.
4. Although wren and flying squirrel houses can be suspended from an anchor point under an eave or tree limb, all other houses should be firmly attached to a support post, building, or tree. When you attach a nest box to a live tree, use lag bolts and washers. Then you can unscrew them



Provide a hinged side or roof so your nest boxes can easily be checked and maintained. This is a Peterson bluebird house.

5. Don't put perches on any birdhouses! Only house sparrows and European starlings prefer perches. If you have a house with a perch, remove the perch. A slab of wood with the bark attached should be placed horizontally under the entrance hole of a common merganser nest box to make it easier for them to land.
6. The top-front edge of a birdhouse should overhang at least two inches to help protect the entrance hole from wind-driven rain and to help keep cats from reaching in from above.
7. At least two 5/8-inch holes should be drilled near the top of the right and left sides of all birdhouses—except duck boxes—to provide ventilation. Providing adequate ventilation is very important for small birdhouses.

8. Cedar and redwood nest boxes should be made with wood screws, concrete coated or ring-shank nails. They won't allow the boards to loosen up. Galvanized nails easily loosen up as wood expands and contracts in extremely cold weather conditions.
9. The sides of a birdhouse should enclose the floorboard—don't nail them to the top of the floorboard. This keeps rain from seeping into the crack between sides and floor and then into the nest. Recess the floorboard 1/4 inch up from the bottom of the sides to help prevent deterioration caused by moisture.
10. Do not use tin cans, milk cartons, or metal for nests. There is not enough insulation. Metals heat up in direct sun, overheat the eggs, and kill the young. However, commercial martin houses made from aluminum are acceptable. Commercial plastic wood duck houses are also acceptable but should be placed in shady locations.

11. Wood is the best all-around material for houses. Boards 3/4 inch thick are the easiest to work with. Softwood such as pine is fine for smaller boxes, but cedar, redwood, or cypress should be used for the larger ones. Cedar is the all-around best choice. Pine or plywood can be used for duck boxes if they are treated on the outside of the box with wood preservative. Do **not** use wood treated with green preservative. The green copper-based preservative, when exposed to water, can produce poisonous vapors. A well-constructed house should last 10 to 15 years. The back should be coated with preservative several times because it is most prone to rotting. Do not paint, stain, or treat a box with creosote. If you must paint or stain, do not put **any** inside the house.

12. Purple martins, goldeneyes, mergansers, and wood ducks do not defend territories around their nests. Therefore, martins should be provided with "apartment type" houses. Duck and merganser boxes can be clustered in groups of two or four. Houses for other bird species should be spaced apart to reduce territorial conflicts. Bluebird houses need to be 100 yards apart.

13. Small animals such as mice and squirrels may take up residence in birdhouses. If not acceptable, remove the nests. Otherwise, you will probably need to put up additional houses to accommodate both the unexpected tenants and the desired wildlife species.

14. If wasps or bees take over a house, remove the wasp or bee nest and spray the interior with a disinfectant. Use extreme cau-

tion to avoid being stung. A can of aerosol insecticide may be necessary during this process for "self-defense." If an ant colony becomes established, place a commercial ant killer in an upside down pop bottle cap under the nest.

15. Blowfly eggs and larvae will sometimes become established in a bluebird nest. The larvae will suck blood from the young birds. If this occurs, lift up the nest with your fingers and gently tap the nest. The larvae will fall through the nest and can be removed from the bottom of the box. If the nest is heavily infested, remove the old nest and transfer the young to a new nest made out of soft grass. Then place the new nest back in the box.

16. When the nesting season is over, open the front or side of a songbird house and leave it that way during winter to prevent deer mice from nesting. Otherwise these mice may "defend" their box from returning songbirds in the spring by killing and eating songbirds that enter "their" box.

17. Be sure to allow for the width of the saw blade when marking a board.

18. Remember that the width and depth of lumber purchased

at lumber yards is smaller than its standard description. For example, a 1" x 6" board is actually 3/4" x 5-1/2". A 2" x 4" is actually 1-1/2" x 3-1/2". The plans in this booklet utilize the actual dimensions of boards to make the most efficient use of wood. The dimensions in this book allow for 1" inch lumber that is actually 3/4" thick. (Caution: Some cedar boards are actually 7/8" or 1" thick. If you use these, you will need to reduce the dimensions of the floor piece to make it fit.)

19. Sawdust is **not** the best material for the bottom of a nest box for northern screech-owl, barred owl, northern saw-whet owl, boreal owl, American kestrel, wood duck, hooded merganser, common goldeneye, and common merganser! It tends to pack down when wet, and retains moisture. Wood chips from a chain saw or wood shavings are a better lining. They allow for better drainage.

20. The actual sizes of the entrance holes for all songbird, woodpecker, and squirrel nest boxes are shown in Figure 26 on page 109. The actual sizes of entrance holes for all duck, merganser, and raccoon nest boxes are shown in Figure 27 on page 110. These holes can be traced onto wood using carbon paper.



Young bluebirds.