

# Bats



Bats are one of the most feared and misunderstood animals on the planet. Found on every continent in the world except Antarctica, these amazingly diverse animals play an important role in the health of natural ecosystems. Approximately 70% of all bats are insectivorous and provide natural pest control on farms and in neighborhoods. In the tropics, bats that eat fruit are important to agricultural production as many crops rely on bats for pollination and seed dispersal. Fecal droppings (guano) from bats are used as fertilizer and provide habitat for unique cave dwelling organisms. Humans even benefit from the saliva of vampire bats found in South America as they provide an important anticoagulant in the medicine of stroke and heart patients. Occasionally, bats may enter a home or building striking fear in those who live or work there.

\*Providing bat-specific artificial roosts is the best opportunity to keep bats out of our homes, but having the roost boxes near our homes will allow for continued benefits from their insect-eating capabilities.

## BAT FACTS

- Fifteen species of bats are found in Tennessee.
- Bats are mammals: are endothermic (warm blooded), have hair, bear live young, and feed their babies milk.
- Bats are not blind. All bats can see, but some use a special sonar system called echolocation. They make high frequency calls either out of their mouths or noses and then listen for echoes to bounce from the objects in front of them.
- Bats are nocturnal; they begin feeding around sunset
- Bats rarely transmit disease to other animals or humans. The fear of rabies is far disproportionate to the actual risk, but care should always be taken if one has to handle a bat.
- A bat's body is adapted for hanging upside down. The hind limbs have rotated 180 degrees so that the knees face backwards allowing them to hang by the feet. Bats also possess specialized tendons that hold their toes in place so that they are able to cling to their roosts without expending any energy. Since most bats can't lift from the ground, these adaptations allow them to simply let go of the roost to drop into flight. Hanging upside down also provides bats with unique space from predators.
- Some species of bats can tolerate short term exposure to sub-freezing temperatures, but bats that live in temperate climates migrate short distances to find suitable caves or underground mines in which to spend the cold winter months, surviving on stored fat reserves. However, several species migrate far distances, traveling from Canada to the Gulf Coast states or Mexico.

## Species most likely to use your Bat Box in Tennessee

Big Brown Bats are one of the largest species growing up to 5 inches long with a 14 inches wingspan. They can weigh up to 1 ounce. They are found in all kinds of habitats in Tennessee, but are most abundant in deciduous forests and suburban areas of mixed agricultural use. Traditionally, these bats formed maternity colonies beneath loose bark and in small cavities of trees. However, today maternity roosts can be found in buildings, bridges, and bat houses. Mother bats recognize their own single pup but help other females with raising all of the young in the roost. Males sometimes bring food to their mates during this period. Small beetles are their most frequent prey, yet big brown bats will consume large quantities of a wide variety of night-flying insects. A single individual can eat up to 7,000 insects a night. This species can live up to 19 years.

Little Brown Bats grow to about 3.5 inches with a wing span of about 10 inches. Adults weigh about ¼ ounce. Although they were formerly very abundant in Tennessee, populations have declined significantly in recent years. They may still be found in forests and suburban areas where they roost in tree cavities and crevices located close to foraging grounds. These bats forage over water where their diet consists of aquatic insects, mainly midges, mosquitoes, mayflies, and caddis flies or over forest trails, meadows, and farmland where they consume a wide variety of insects. A single Little Brown Bat can eat over 1,000 mosquito sized insects a night.

## Bat Box Designs

Rocket-Box Bat House is a preferred design for bats.

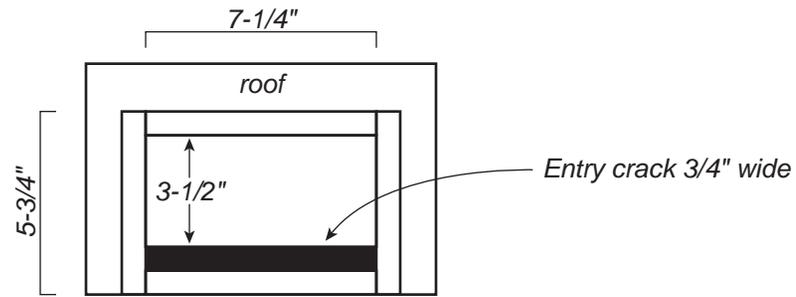
[http://www.batsnorthwest.org/rocketbox\\_plans.pdf](http://www.batsnorthwest.org/rocketbox_plans.pdf)

### Box Placement

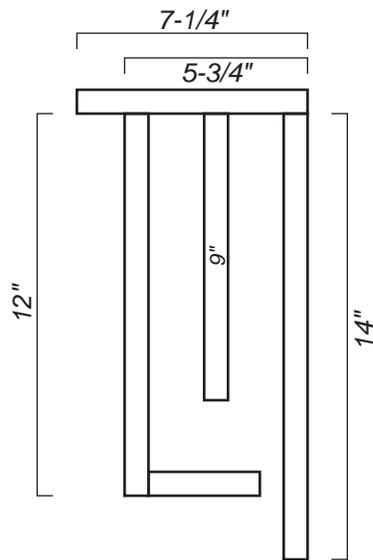
- The best bat-house success has been achieved in areas of diverse habitat. Placing boxes with ¼ mile of a water source is ideal, but not required. It is best to test for local needs by bats before putting up more than three boxes.
- At least six hours of direct daily sun is recommended for all bat houses.
- To create favorable conditions for maternity roost, internal bat-house temperatures should stay between 80° F and 100° F as long as possible.
- If painting the exterior, dark colors (such as dark brown or dark gray) where they are 85° to 95° F, medium colors where they are 95° to 100°, and white or light colors where they exceed 100° F. Adjust to darker colors for less sun. For the interior, use two coats dark, exterior grade, water-based stain, not paint. Apply stain after creating scratches or grooves. Paint fills grooves, making them unusable.
- Houses mounted on the sides of buildings or on metal poles provide the best protection from predators. Metal predator guards may be helpful, especially on wooden poles placed at least 20 to 25 feet from the nearest tree branches, wires or other potential perches for aerial predators like owls.
- Wasps can be a problem before bats fully occupy a house. Use of ¾ inch roosting spaces reduces the risk of wasps. If nests accumulate, they should be removed in late winter or early spring before either wasps or bats return. Open-bottom houses reduce problems with birds, mice, squirrels, or parasites, and also prevents the accumulation of guano inside.

# BAT HOUSE

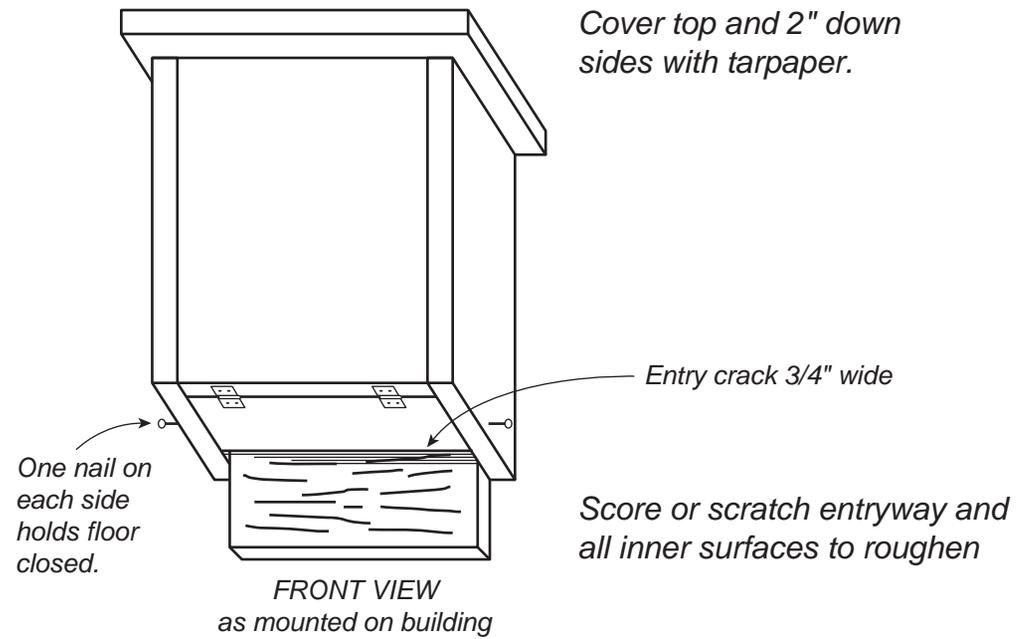
**LUMBER: One 1" x 8" x 8'**



BOTTOM VIEW



SIDE VIEW  
(cut-away)



FRONT VIEW  
as mounted on building

