



MONTANA BAT FACTS

I love bats because mosquitoes LOVE to bite me. Pesticides can be harmful to mosquitoes' predators as well as mosquitoes. According to Bat Conservation International, one little brown bat can eat 60 medium-sized moths or over 1000 mosquito-sized insects in one night!

Bats are also interesting because, in many ecosystems, they play a key role in pollinating plants. There are more than 1,300 species of bats in the world! The world's smallest mammal is the bumblebee bat of Thailand, weighing less than a penny. Giant golden-crowned flying foxes, found in the Philippines, are the largest bats with a wing span of up to 5.6 feet. Some bats use echolocation, or high pitched chirps which bounce off objects in front of them, to find their way in the dark. Also, bats are not blind and less than one-half of 1% of bats contract rabies. Bats will normally bite only in self-defense and pose little threat to people who do not handle them.

There are 15 species of bats in Montana:

- Big Brown Bat (*Eptesicus fuscus*)
- California Myotis (*Myotis californicus*)
- Eastern Red Bat (*Lasiurus borealis*)
- Fringed Myotis (*Myotis thysanodes*)
- Hoary Bat (*Lasiurus cinereus*)
- Little Brown Myotis (*Myotis lucifugus*)
- Long-eared Myotis (*Myotis evotis*)
- Long-legged Myotis (*Myotis Volans*)
- Northern Myotis (*Myotis septentrionalis*)
- Pallid Bat (*Antrozous pallidus*)
- Silver-haired Bat (*Lasionycteris noctivagans*)
- Spotted Bat (*Euderma maculatum*)
- Townsend's Big-eared Bat (*Corynorhinus townsendii*)
- Western Small-footed Myotis (*Myotis ciliolabrum*)
- Yuma Myotis (*Myotis yumanensis*)

WHY BUILD A BAT HOUSE?

Guess what?? Bats don't always live in caves. Some bats spend winter months in caves, but most bats spend summers in trees, under bridges or in old buildings, where they give birth and rear young, called pups. The goal of an artificial bat house is to mimic the space between bark and a tree trunk which is an ideal bat nursery. That's why the space inside a bat house is very narrow, unlike a bird house which would house a nest because bats like tight spaces, they need it nice and warm for the pups.

You might wonder why you need to build a bat house. Why can't the bats just find a nice tree? That is the challenge for many bat species as forests are cleared. A bat house is also a great way to provide cover for wildlife, as well as a place for wildlife to raise young – two components of becoming a National Wildlife Federation Certified Wildlife Habitat site. Bats prefer houses mounted on buildings because they retain heat better and are less accessible to predators. In moderate to hot climates where there is not extreme variation between day and night temperatures, bat houses mounted on poles are a good alternative if you don't want to mount the house on a building. Interestingly, bats are less attracted to bat houses mounted on trees. Why? It's too easy for predators to get bats as they exit and the branches obstruct exiting bats which drop down, then up, into flight. Plus it's too shady from branches above.

Find a location with LOTS of sun!! Make sure it's at least 15 feet off the ground to protect against predators and there is water source nearby, this is so the mother doesn't have to leave her young for too long. Also, rough up the inside wood, as this mimics tree bark and is easier for the bats to climb up. Finally, paint the box according to [the climate you live in](#). In Montana, paint the box BLACK using a water-based paint to keep down paint odor that might repel bats and caulk the sides to trap heat.



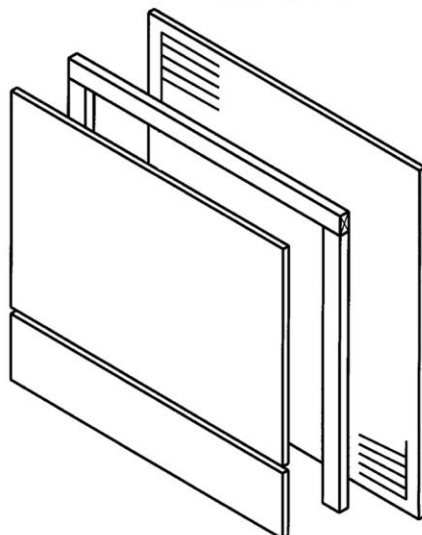
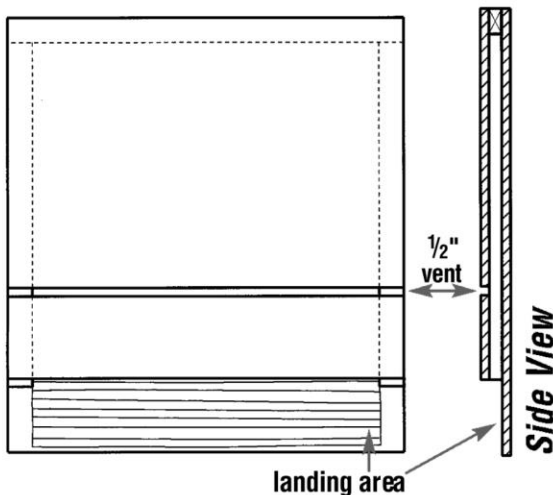
Single-chamber Bat House (wall mounted)

Materials (makes one house)

¼ sheet (2' x 4') ½" AC, BC or T1-11 (outdoor grade) plywood
 One piece 1" x 2" (¾" x 1½" finished) x 8' pine (furring strip)
 20 to 30 exterior-grade screws, 1"
 One pint dark, water-based stain, exterior grade
 One pint water-based primer, exterior grade
 One quart flat, water-based paint or stain, exterior grade
 One tube paintable latex caulk
 1" x 4" x 28" board for roof (optional, but highly recommended)
 Black asphalt shingles or galvanized metal (optional)
 6 to 10 roofing nails, ¾" (if using shingles or metal roofing)

Recommended tools

Table saw or handsaw	Caulking gun
Variable-speed reversing drill	Paintbrushes
Screwdriver bit for drill	Hammer (optional)
Tape measure or yardstick	Tin snips (optional)



More bat-house plans and additional information can be found in BCI's *Bat House Builder's Handbook*, available at www.batcatalog.com.

Construction

1. Measure and cut plywood into three pieces: 26½" x 24", 16½" x 24", 5" x 24"
2. Roughen inside of backboard and landing area by cutting horizontal grooves with sharp object or saw. Space grooves ¼" to ½" apart, cutting ½" to ⅙" deep.
3. Apply two coats of dark, water-based stain to interior surfaces. Do not use paint, as it will fill grooves.
4. Cut furring strip into one 24" and two 20½" pieces.
5. Attach furring strips to back, caulking first. Start with 24" piece at top. Roost chamber spacing is ¾".
6. Attach front to furring strips, top piece first (caulk first). Leave ½" vent space between top and bottom front pieces.
7. Caulk all outside joints to further seal roost chamber.
8. Attach a 1" x 4" x 28" board to the top as a roof (optional, but highly recommended).
9. Apply three coats of paint or stain to the exterior (use primer for first coat).
10. Cover roof with shingles or galvanized metal (optional).
11. Mount on building (south or east sides usually best).

Optional modifications to the single-chamber bat house

1. Wider bat houses can be built for larger colonies. Be sure to adjust dimensions for back and front pieces and ceiling strip. A ¾" support spacer may be needed in the center of the roosting chamber for bat houses over 24" wide to prevent warping.
2. To make a taller version for additional temperature diversity, use these modifications: From a 2' x 8' piece of plywood, cut three pieces: 51" x 24", 33" x 24" and 12" x 24". Cut two 8' furring strips into one 24" and two 44" pieces. Follow assembly procedure above.
3. Two bat houses can be placed back-to-back, mounted between two poles, to create a three-chamber nursery house. Before assembly, cut a horizontal ¾" slot in the back of each house about 9" from the bottom edge of the back piece to permit movement of bats between houses. Two pieces of wood, 1" x 4" x 4¼", screwed horizontally to each side, will join the two boxes. Leave a ¾" space between the two houses, and roughen the wood surfaces or cover the back of each with plastic mesh (see item 5 below). Do not cover the rear exit slots with mesh. One 1" x 4" x 34" vertical piece, attached to each side over the horizontal pieces, blocks light but allows bats and air to enter. A galvanized metal roof, covering both houses, protects the center roosting area from rain. Eaves should be about 3" in southern areas and about 1½" in the north.
4. Ventilation may not be necessary in cold climates. In this case, the front should be a single piece 23" long. Smaller bat houses like this one will be less successful in cool climates. However, those mounted on buildings maintain thermal stability better and are more likely to attract bats.
5. Durable plastic mesh can be substituted to provide footholds for bats. Attach one 20" x 24½" piece to backboard after staining interior, but prior to assembly.