

# Bats

## Order Chiroptera

### Identification:

Bats are the only mammals that can truly fly, with their “arms” modified into wings. One of the largest bat species in Denver, the hoary bat *Lasiurus cinereus*, weighs about the equivalent of 3 nickels.

The western pipistrelle, *Pipistrellus hesperus* is the smallest, weighing less than a nickel. There are 18 species of bats found in Denver.



### Diet:

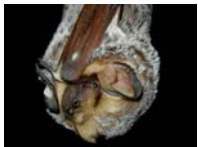
Colorado bats eat insects, hunting at night using bouncing sound waves (echolocation) to locate prey. Prey includes beetles, moths, mosquitoes, flies and more. Different species of bats have developed a variety of hunting methods, including fishing, hitting insects with wings, and even foraging off plants. Styles are as varied as the number of species.

### Breeding:

Bats form large breeding colonies, and are not monogamous. They have a relatively long gestation, and most have a single offspring with lots of maternal care. This is different than other small mammals like shrews and mice, some of which are capable of producing as many as 60 offspring per mother per year, but investing little in care. Mothers can locate their own baby in colonies of thousands of bats using calls and scent; they have an amazing sense of smell. Mating occurs in the fall, where the sperm is stored until spring. In Colorado bats are born in late spring.

### Behavior in an urban environment:

Cities have a lot of roosting sites for bats, but depending on the type of bat there may be less food. Bats sometimes congregate around light fixtures, following insects. A nearby water source is necessary, they may drink from ponds, puddles, swimming pools, bird baths, and slow moving streams. Different species of bats may migrate, hibernate or go into a less active (torpor) state during colder winter months in Colorado. Bats can try to find safe and warm roosting and breeding sites inside of buildings and attics.



Hoary bat, from usgs.gov

### Benefits:

Bats eat thousands of insects a night. Little brown bats, common in Colorado, have been known to catch and eat more than 150 mosquitoes in less than 15 minutes. Many people install “bat houses” on their property to encourage bats to hunt nearby. Bat droppings (guano) are excellent natural fertilizer. Many bats also are plant pollinators; pollen gets caught in their fur as they hunt for insects.

### Threats to bats:

Bat world wide have been threatened by human activity. Bats disturbed during hibernation don't have enough fat to carry them through the winter. Pesticides wipe out food sources, or bats get sick from eating poisoned prey. Malicious behavior has also claimed the lives of millions of bats world wide. Misconceptions and myths surrounding bats have made people fear a truly unique and beneficial animal.

### Myths debunked!

Bats in CO do not drink blood. There are 3 true vampire bat species found in Central and South America. They make small tears in the skin of mammals and birds and lick up the liquid.

Bats are not closely related to mice or rats. In fact they have very little in common.

<b>Bats</b>	<b>Mice/Rats</b>
Have one or two well cared for young	Have many offspring
Eat insects	Eat anything
Live 20-30 years	Live 1-3 years
Avoid contact with people	Compete with people for human food

Bats do not get tangled in hair or “attack” people out at night. In fact their echolocation abilities identify exactly where people are so we are easy to avoid!

### **Danger from bats:**

Bats typically avoid contact with people and pets, and due to their small size pose little physical danger. They are, however, the main carrier of rabies in Colorado, and can transfer the rabies virus to humans and pets. Never handle a bat without protective gear. See “Rabies” for more information.

### **If a bat is in your home:**

1. Lights confuse a bat and will make it find a place to land. Bright lights, noise and movement can cause disorientation. Control noise and light to help catch bat.
2. Remove pets from area, cats in particular can easily catch bats and potentially get bitten.
3. Close interior doors. Keep the bat in one room.
4. Turn on a bright light, bat will go into a “sleep” mode and land, often on a curtain. Using a net, coffee can or as last option **WEARING GLOVES**, place a kitchen towel over the bat, and gently work it off the perch. You may hear a buzzing sound as it echolocates.
5. Take it outside and gently shake it off the towel.

### **Bat proofing your home:**

<b>Timing of Bat-Proofing</b>	
Months	Methods for Bat-proofing
Jan–April	Seal entrances before bats return to the building.
May–August	Watch bats to identify entrances. Do not seal openings.
August–Oct	Install one way door(s).
Sept-Oct	Install one way door if suspect bats hibernating in the building
Nov.–Dec	Seal entrances once bats have left the building.

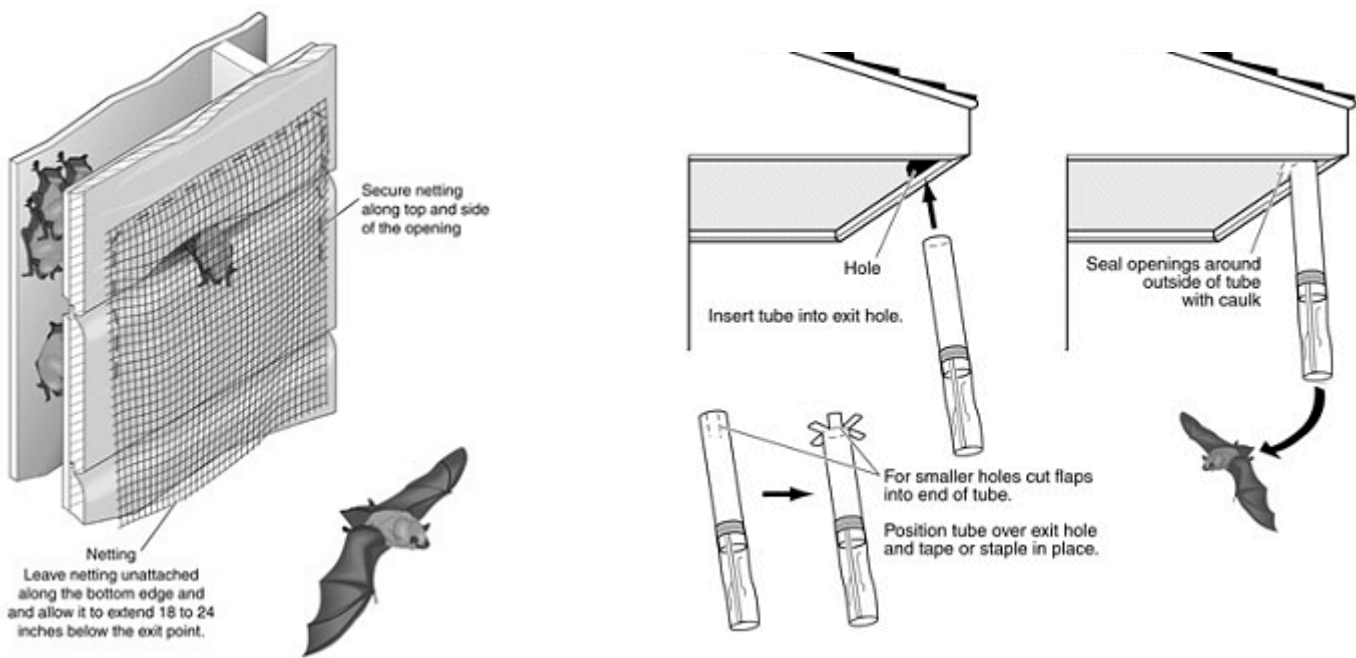
The best time to bat proof your house is late fall or late winter to early spring. At other times you risk enclosing young bats in the home without care. **Do not bat proof from late May to mid July.**

1. Determine where bats are entering home. They only need an opening ¼” wide. Check around window frames, chimneys, vets, and shingles.
2. If you can’t determine location, set up a “bat watch” and watch in the early evening hours.
3. Make sure there are no young that will be left behind if adults are excluded from home. The young are too small to leave during the late spring and early summer months.
4. Seal all but one or two of the openings. Leave for several days so bats can get used to using the only entrance left.
5. After a few days. create a one way exit-bats do not necessarily leave every night, Keep this is place for a few days to let bats continue to leave but not return. See construction below.

6. At night after the bats have left, seal the entry points.
7. Outside lights left on can sometimes discourage bats.
8. Provide an alternate roost. Bats are beneficial outside the home, eating thousands of insects, guano fertilizes plants, and many bats are pollinators. Installing a bat house near the old entrance can keep these helpful critters near by but out of the home.

### Installing one way doors:

1. Choose 0.25- to 0.5-inch wire screening or heavy plastic mesh to cover the bats' points of entry. Cut the screening so that it covers the width of the hole and extends approximately three feet below the hole. The screening should project three-to-five inches clear of the hole, so that the bats can crawl between the screen and the building and exit at the bottom.
2. Secure the mesh at the top and sides with duct tape or staples and leave the bottom open.
3. Leave the door in place for at least three to four days, or until you are sure that all bats have left the building, then remove the one-way door and permanently seal the opening



### Bat Species in CO:

Big brown bat  
Big free-tailed bat  
Brazilian free-tailed bat  
California myotis  
Eastern pipistrelle  
Fringed myotis  
Hoary bat  
Little brown bat  
Long-eared myotis

Long legged myotis  
Pallid bat  
Red bat  
Silver-haired bat  
Spotted bat  
Townsend's big-eared bat\*  
Western pipistrelle  
Western small-footed myotis  
Yuman myotis

\*species of state special concern

Build a bat house links:

Information, materials, instructions on building and mounting your own bat house.

[http://www.eparks.org/wildlife\\_protection/wildlife\\_facts/bats/bat\\_house.asp](http://www.eparks.org/wildlife_protection/wildlife_facts/bats/bat_house.asp)

<http://www.batcon.org/home/index.asp?idPage=149>

<http://www.nwf.org/backyard/bathouse.cfm>

#### Resources:

Armstrong, D.M., A. Adams, R.A., Navo, K.W., Freeman, J, and Bissell, S.J. 1994. *Bats of Colorado: Shadows of the Night*. Colorado Division of Wildlife, Denver, Colorado.

[http://www.cnhp.colostate.edu/RASwebpage/cbwg\\_website/cbwg\\_bats\\_CO.htm](http://www.cnhp.colostate.edu/RASwebpage/cbwg_website/cbwg_bats_CO.htm)

CDOW, Natural Diversity Information source, <http://ndis.nrel.colostate.edu/wildlifesp.aspx?grp=Bats>

CDOW, Species profiles, Bats, <http://wildlife.state.co.us/WildlifeSpecies/Profiles/Mammals/BatsofColorado/>

Animal Diversity web <http://animaldiversity.ummz.umich.edu/site/accounts/information/Chiroptera.html>

**Tvedten, Steve "The Bug Stops Here"**, [http://www.getipm.com/thebestcontrol/bugstop/control\\_bat.htm](http://www.getipm.com/thebestcontrol/bugstop/control_bat.htm)

Penn State, **Agricultural Research and Cooperative Extension**

**"A Homeowner's Guide to Northeastern Bats and Bat Problems"** <http://pubs.cas.psu.edu/FreePubs/pdfs/uho81.pdf>

**Bat Conservation International, Do it yourself** <http://www.batcon.org/home/index.asp?idPage=51&idSubPage=49>

