Bat Management

University of Nebraska—Lincoln
Extension

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UNIVERSITY OF Nebraska Lincoln

Bats: Beyond Bloodsuckers!

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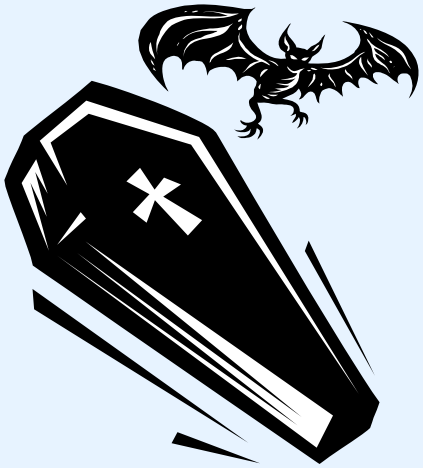

Images of Dracula often come to mind when the word "bat" is mentioned. True Vampire bats exist in subtropical or tropical locales, such as Chile. Nebraska bats are NOT **bloodsuckers**!

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Bat Facts

- Nocturnal, flying mammals
- Not rodents
- Fly with "hands"
- Have claws
- Can crawl on ground
- Good vision
- Timid and gentle, avoid human contact

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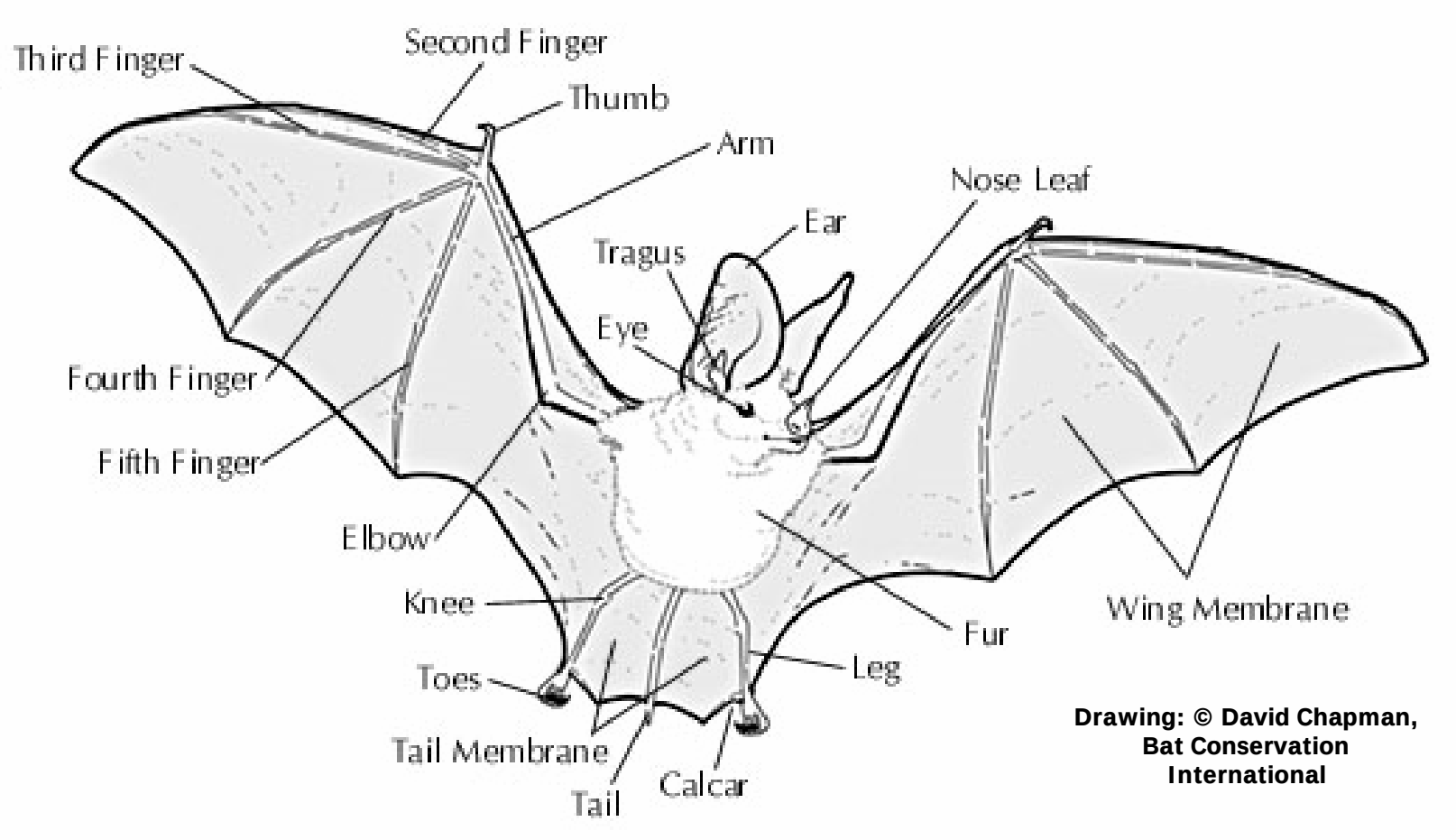
Bat Anatomy



Drawing: © David Chapman, Bat Conservation International

Bat Facts

- Feed on insects, fish, fruit, and blood
  - Bats in Nebraska strictly insectivorous; kill more mosquitoes and other insects than birds or bug zappers
- Eat and drink in flight
  - Water scooped up into a "cup" area between hind leg and tail from lakes, pools, and other sources of standing water
- Fragile "needle-like" teeth
  - Unable to chew through structural materials like wood or caulking

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Bat Facts

- Use sonar to find food
- Consume $\frac{1}{4}$ to $\frac{1}{2}$ body weight of insects each night; colony can eat over 100 tons of insects in one season
- Can help control insect pests

Big Brown Bat eating a mealworm

Note: **Bat shown is a resident from a bat sanctuary. When capturing and releasing wild bats, always wear gloves!**

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Bat Facts

- Live in caves, hollow trees, loose bark, rocky ledges
- In cities may be found in down spouts, behind house shutters, attics, and storm sewers
- Consider offering a bat house in your backyard and a good water source; bats may take residence and provide pest control in your lawn and garden!

Bat house info at
http://icwdm.org

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Bat Reproduction

- Low reproductive rate
  - 1-2 young per year
- Mate early fall, fertilization takes place late winter or early spring
  - Young born 6-8 weeks later
- Parental care
  - Mother stays with young until late summer

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Major Nebraska Bats

Big Brown Bat *[Eptesieus fuscus]*

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Big Brown Bat
[Eptesicus fuscus]

- Commonly encountered by the public
- Five inches long from nose to tail
- Brown with darker brown skin on nose, ears, and wings and pale brown underside
- Live in colonies
- Remain in Nebraska year round

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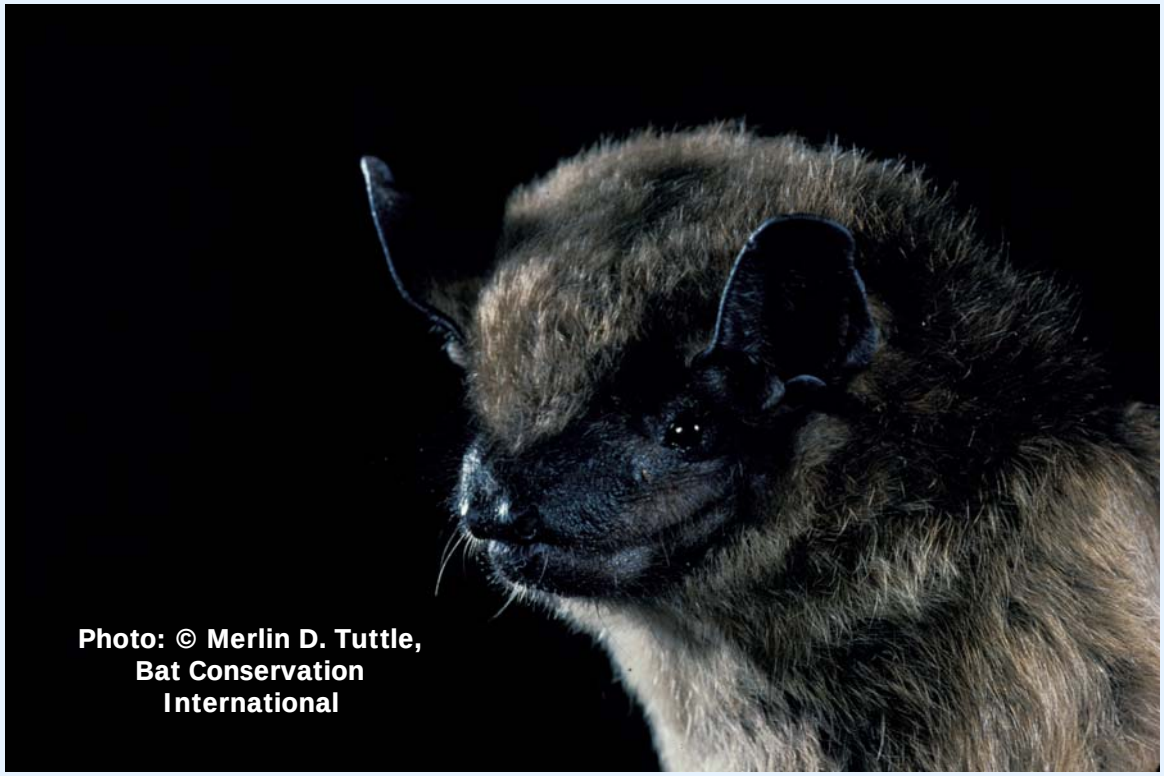
Big Brown Bat
[Eptesicus fuscus]



Major Nebraska Bats

Little Brown Bat *[Myotis lucifugus]*

Photo: U.S. Fish and Wildlife Service
National Image Library

Note: Wear gloves when handling wild bats.

Little Brown Bat
[Mytois lucifugus]

- Located in Eastern third of the state
- Three to four inches long
- Dark brown; "glossy" in appearance

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Major Nebraska Bats

Red Bat *[Lasiurus borealis]*

Red Bat
[Lasiurus borealis]

- Found statewide
- About five inches long from nose to tail
- Bright reddish brown to rust colored on top, paler red underside, and cream patches on each shoulder
- Migrate south in winter

Note: **Bat shown is a resident from a bat sanctuary. When capturing and releasing wild bats, always wear gloves!**

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Human-Bat Interactions

- Beneficial
  - Mosquito feeders
  - Ecological and Economical importance
    - ✓ Eat agricultural pests, such as corn rootworm, thus reducing need for pesticides
    - ✓ Guano used as fertilizer
      - 10% nitrogen, 3% phosphorous, 1% potassium; safely enhances plants
      - Long lasting in soils

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Bat scat (Guano)

Photos: University of Nebraska

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Human-Bat Interactions

- Detrimental/Harmful
  - Diseases
    - Fungal: Histoplasmosis--found indoors from large amounts of guano in dry and confined areas
    - Viral: Rabies--however, other animals, such as skunks and raccoons, have a much higher incidence of rabies than bats
  - Parasites
    - Batbugs
  - Contamination
    - Ammonia
  - Fear

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Bats As Rabies Vectors

- Vast majority are rabies free
- Isolated or downed bats have a higher rate of rabies
- People can be bitten and not know it!

Photo: Nebraska Health and Human Services System

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Nebraska Bat Exposure Protocols

- Assume person was bitten if:
  - He or she awakes with bat in room
  - Bat found in room with someone unable to communicate well (i.e. children, intoxicated, mentally impaired)
  - Any physical contact occurred with bat
  - DO NOT RELEASE BAT
  - DO NOT DAMAGE BAT'S HEAD

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Capturing Bats

- Close exits and hiding places
- Watch bat while waiting for it to tire
- "Tupperware method"
- Contact Police Dept. or Animal Control to have bat tested if rabies exposure is suspected

Safe Capture and Release

- If you are certain there was no exposure to the bat, the bat may be released or a bat rehabilitator can be called
- Place bat on tree branch as high as possible. The elevation will help him get airborne when he decides to fly

Drawing: © Bat World Sanctuary (www.batworld.org)

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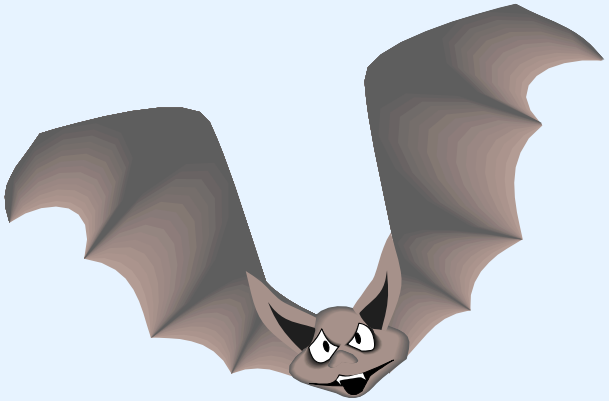
Bat Removal



- For single bat in a room
  - Open all windows and doors in the room where the bat is observed (see rabies protocols)
  - Block doors leading to adjoining rooms
  - Leave lights on and stand motionless
  - Let the bat fly around looking for an escape route, it will most likely find its way out on its own (Watch the bat leave!!!!)
  - Do not swat at the bat!

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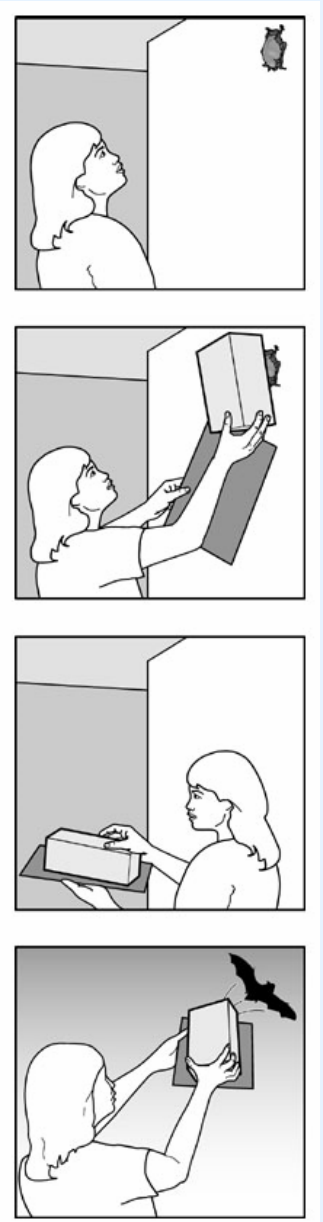
Bat Removal

Drawing: © David Chapman, Bat Conservation International



- For a bat at rest on a wall
  - Put on gloves
  - Get a glass, cup, or plastic container
  - Approach slowly and put the container over the bat
  - Slide a piece of cardboard between the cup and wall
  - Carry the container outdoors, and put it upside down on a tree or other elevated surface
  - Slide the paper from under the cup and lift the cup from the bat.

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Bat Infestations in Structures

- Often young bats accidentally find way in while seeking shelter or feeding on insects near entryway
  - Can enter through 3/8 inch openings
  - Cannot make their own entry holes

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Bat Infestation Signs

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Bat Infestation Signs

- Single bat in the summer, consider it an accidental entry
- Finding two bats in the summer, assume it is an infestation
- Bat found in winter means bats are hibernating in your building
- Finding a single bat every year, suggests infestation in home
- Bat droppings in attic, etc. suggests infestation
- Frequent sightings of bats around structure should raise suspicion

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Bat Exclusion

- For bats already residing in a structure:
  - During the evening, go outside to observe/inspect where bats are entering and exiting
  - Create one-way door by hanging one ft. strips of flexible $\frac{1}{4}$ inch netting over each possible entry and exit point
  - Fasten netting by the top edge above the entries
  - Secure all other gaps and crevices

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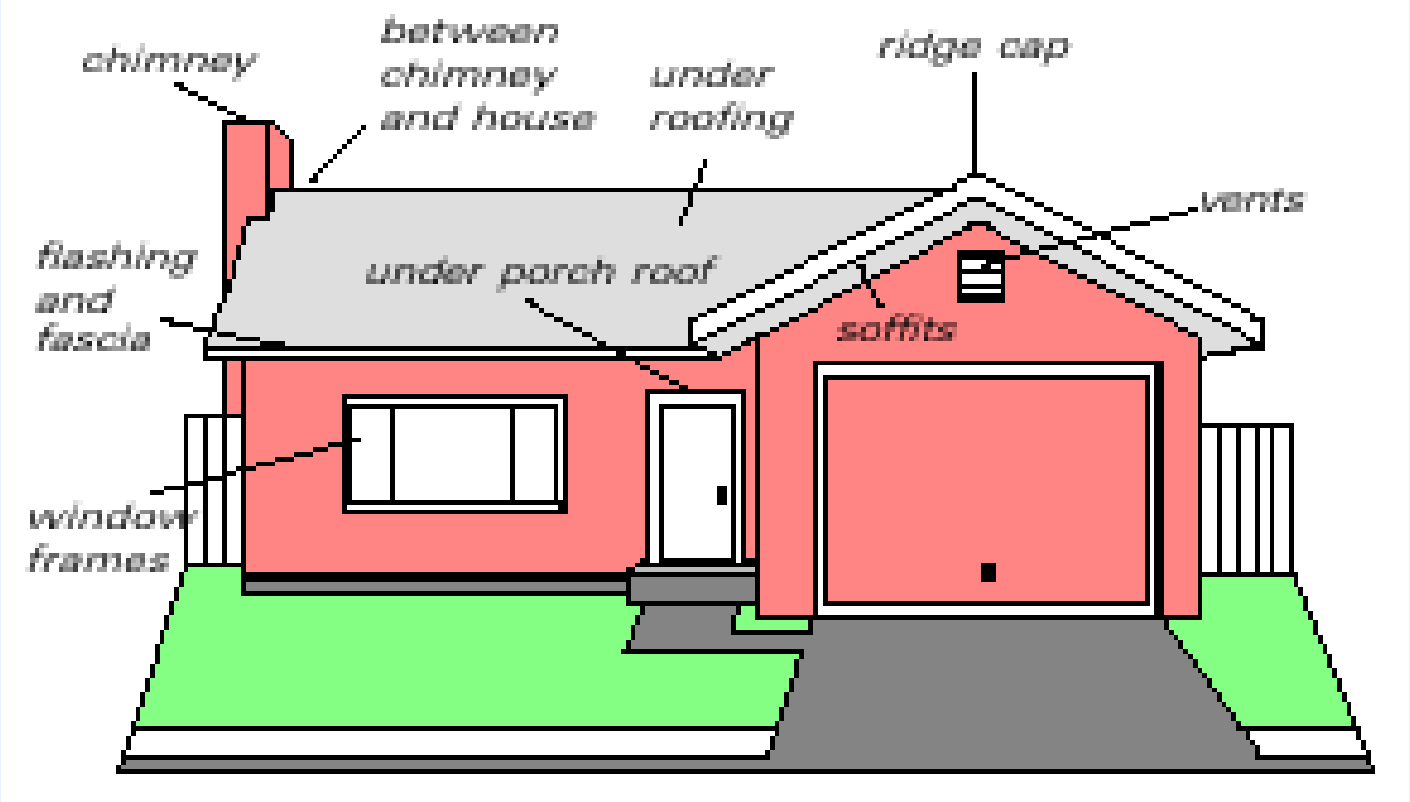
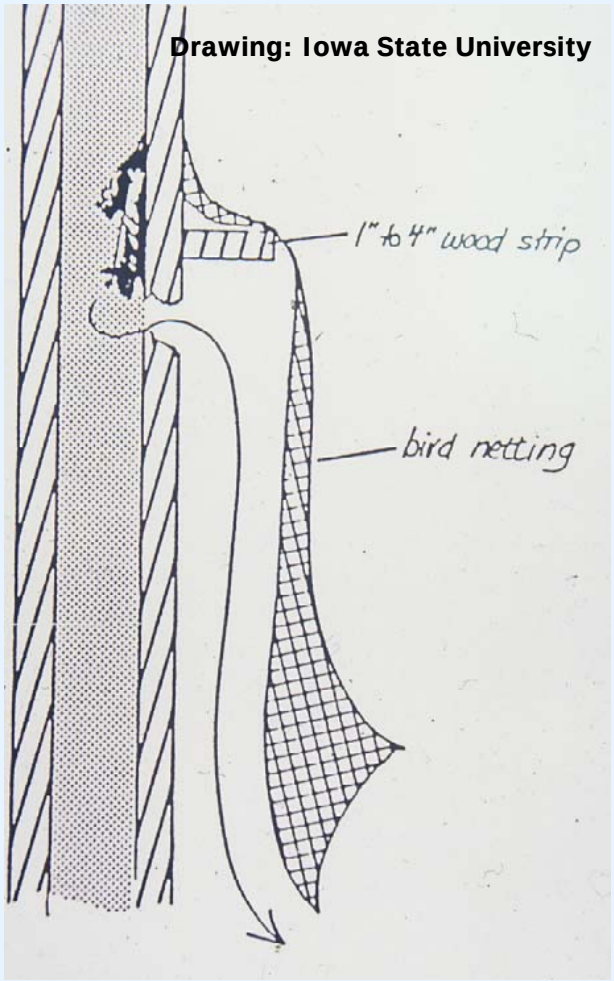
Bat Exclusion

Drawing: USDA



- Carefully inspect areas such as roofs, chimneys, etc. if bats are seen in the vicinity of a home

Bat Exclusion



- Use netting to create a "one-way door" over bat entry and exit points.

Bat Exclusion

- For bats already residing in a structure:
  - Leave doors up for a week. Continue to monitor. Caution: sometimes bats get spooked and will enter the living area
  - Remove one-way doors and seal all the entry points
  - Do not install one-way doors or seal entry points during May-July when young bats may be in the roost. "May-July let them fly"

Bat Exclusion

- Keep screens and doors tightly closed
- Plug holes using products such as weatherproof foam strips and foaming aerosol insulation or exterior caulk
- Reduce insect populations around doors by replacing regular light bulbs with yellow "bug lights"
- Fill spaces between attached building structures, such as down spouts and shutters, with stainless steel wool or $\frac{1}{4}$ inch wire mesh

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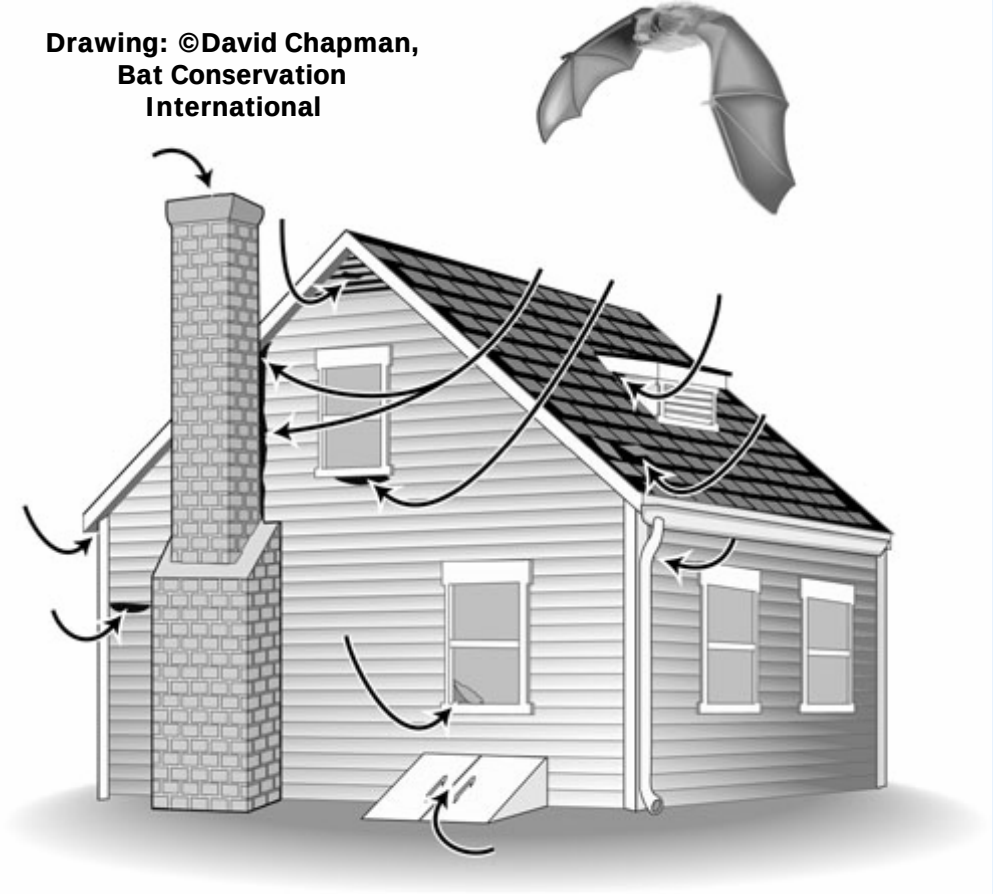
Bat Exclusion



Potential entry points for bats, including the chimney

- Install professionally manufactured stainless steel chimney cap to reduce the likelihood of bats roosting in chimneys or entering buildings from the chimney

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Cage Trapping

- For large colonies, use one-way door with collection bag attached
- Build "Roost traps"
- Attach cage traps to underside of an attic or overhang
- Only professional wildlife control specialists should handle and remove live bats
  - Wear gloves when removing bats from traps

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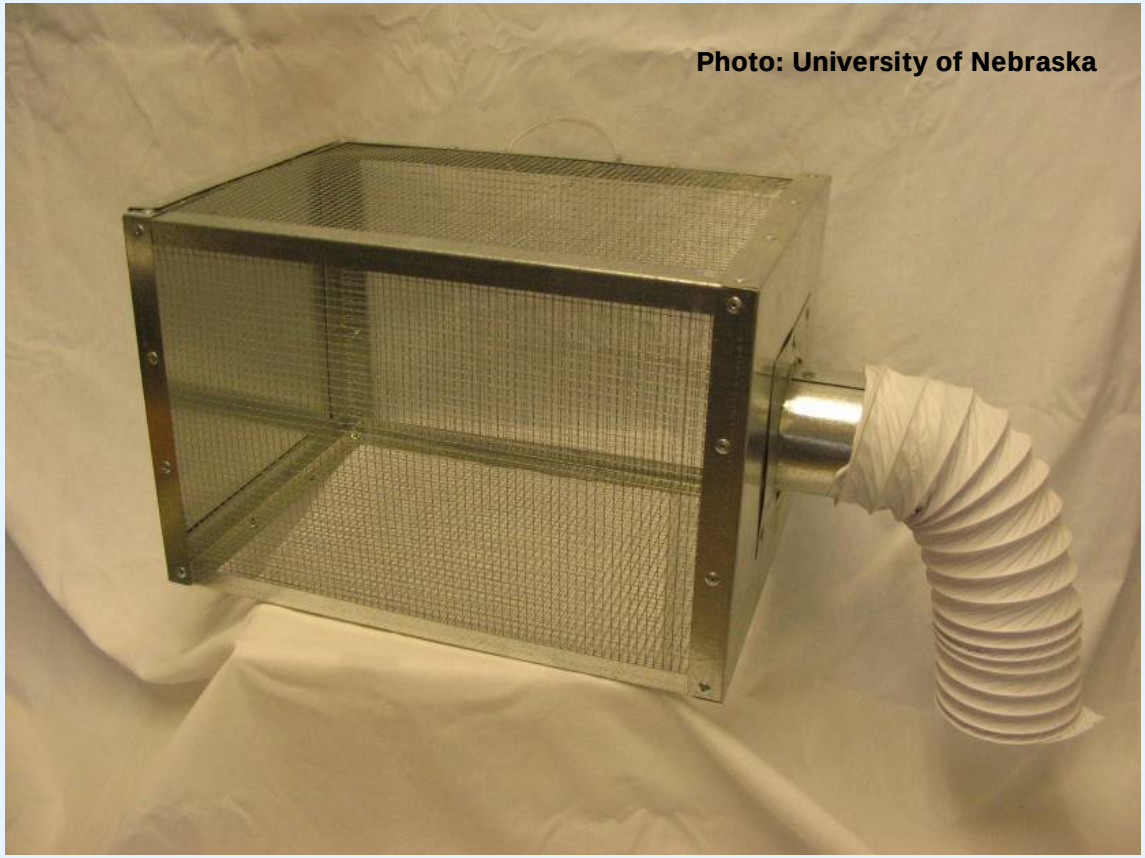
Bat Trap



Bat trap (Al Lafrance of NY, manufacturer)

Repellents

- Commercial products such as Bat-A-Way have questionable effectiveness and have not been tested on Nebraska bats
- Mothballs and Ultrasound devices have not been proven effective

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Poisons and Toxicants

- No toxicants registered in Nebraska or the U.S.
- Would be hard to bait since they eat live insects

Bat Houses

- Roughen the interior to allow the bat to climb
- Paint a dark color
- Fasten to the south side of poles, trees, or buildings at 12-18 ft. above the ground
- Locate where animals such as cats, raccoons, owls, or other predators can't get to it

Bat Houses


Photo: University of Nebraska

Single chambered bat house that still needs painting and mounting

For more bat house information visit http://icwdm.org

Resources/Information

- Bat Conservation International
  - http://www.batcon.org
- Internet Center for Wildlife Damage Management
  - http://icwdm.org
- Prevention and Control of Wildlife Damage
  - http://icwdm.org/handbook/index.asp

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Credits

- Content Specialist
  - Dennis Ferraro, UNL Extension in Douglas-Sarpy County
  - Erin Bauer, UNL Extension
  - Stephen Vantassel, UNL Extension
- Content Editor
  - Erin Bauer, UNL Extension
- Photos
  - Bat World Sanctuary (http://www.batworld.org)

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  - Merlin D. Tuttle, Bat Conservation International
  - U. S. Fish and Wildlife Service
  - Stephen Vantassel, UNL Extension
  - Erin Bauer, UNL Extension
  - Nebraska Health and Human Services System

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Credits

- Photos cont.
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  - Iowa State University
  - USDA
- Artwork
  - David Chapman, Bat Conservation International

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