



GUIDANCE FOR LOUISIANA RESIDENTS

ldfwildlifehealth@wlf.la.gov

BATS



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BATS



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BATS



CHIROPTERA

Bats comprise 20% of global mammalian species with more than 1,400 named species. Bats are the only mammal capable of true flight, the finger bones being elongated and covered with skin which extends from the body of the bat to form the wing membrane. This distinctive feature is echoed in their taxonomic classification, Order Chiroptera, which translates to “hand-wing.” Bats roost during the day and are active in the evening, with most being crepuscular (active at dawn and dusk) and nocturnal (active at night). Species utilize a wide array of structures for roost locations, such as trees, caves, buildings, and rock crevices. These locations vary by species, season, and geography.

Like 70% of bat species world-wide, all bat species in Louisiana are insectivores and strictly feed on insects. However, in other parts of the world bats also feed on fruit, nectar or pollen, fish, frogs, or blood. Three species of vampire bats feed by lapping blood from small wounds on sleeping livestock. Vampire bats do not occur in the United States or Canada, and their range is restricted from Mexico south to Argentina.

Bats provide a number of ecosystem services, including pollination, seed dispersal, and pest control. Worldwide, bats play an important role in arthropod suppression by feeding on hundreds of insect species. Bats consume mosquitoes which are known vectors of human and animal diseases such as West Nile Virus and Heartworm disease in dogs. Examples of agricultural pests include, but are not limited to: Asiatic oak weevil, corn earworm moth, cutworms, beet armyworms, cucumber beetle, green stink bugs, June beetles, and pecan nut casebearer moth. It is estimated that insectivorous bats save U.S. agriculture over \$3.7 billion dollars annually in pest control.

Bats face many threats across their range, including disease, habitat alterations, wind farms, bushmeat and souvenir trades. Habitat alterations worldwide include degradation, fragmentation and destruction. One of the largest threats to bats in the United States is the disease White-nose Syndrome, caused by the fungus *Pseudogymnoascus destructans* (Pd). The disease is responsible for the death of more than 6.7 million bats since its discovery near Albany, New York in 2006. In some locations the disease has resulted in 90 to 100 percent hibernaculum mortality. In 2021, Louisiana became Pd positive.

BATS

RABIES

RABIES

Rabies is a Class A Disease and must be reported to The Louisiana Department of Health Office of Public Health within 24 hours by calling 1-800-256-2748.

Classical rabies virus, family *Rhabdoviridae*, genus *Lyssavirus*, causes acute encephalitis in all warm-blooded hosts, including humans. All species of mammals are susceptible to classical rabies, but only a few species are considered important reservoirs, such as bats, skunks, raccoons, foxes and coyotes. Most of these reservoirs harbor specific variants of the virus in distinct geographic locations. Rabies transmission occurs through contact with saliva from an infected animal, most often enters through a bite. Signs and symptoms in the early stages (2-10 days) include fever, headache, and general malaise. Symptoms progress to insomnia, confusion, anxiety, paralysis, excitation, hallucinations, agitation, hypersalivation, difficult swallowing, hydrophobia, and death.

Factors affecting the outcomes of rabies exposure include: virus variant; dose of virus inoculum; route and location of exposure; individual host factors such as age and immune status. Rabies is diagnosed through direct fluorescent antibody test on animal brain tissue which detects viral proteins. In humans, rabies testing can be conducted with samples of saliva, serum, cerebrospinal fluid, or a skin biopsy.

Pre-exposure prophylaxis (PrEP) consists of three injections, given at 0, 7, and 21 or 28 days, and is recommended by the Centers for Disease Control for veterinarians, animal handlers, certain laboratory workers, and persons whose activities bring them in contact with vector species. PrEP does not eliminate the need for post-exposure prophylaxis, however it does enhance immunity and reduces the number of booster vaccines required in the event of a known exposure. PrEP also provides protection for people that may experience unrecognized exposures.

When a person or domestic animal is bitten, the animal should be retained for laboratory testing. The Louisiana Department of Health recommends the wound be thoroughly cleaned with soap and water, and that the victim then seek medical attention as soon as possible. Pertinent information must be collected in ALL potential rabies exposure events. This information includes: geographic location of the incident; type of animal involved; how the exposure occurred; if the exposure was provoked or unprovoked; vaccination status of the animal; and the possibility of the animal being captured and tested for rabies.

Dr. Gary A. Balsamo, State Public Health Veterinarian & Assistant State Epidemiologist,
Office of Public Health, Louisiana Department of Health , 1-800-256-2748, www.oph.dhh.state.la.us

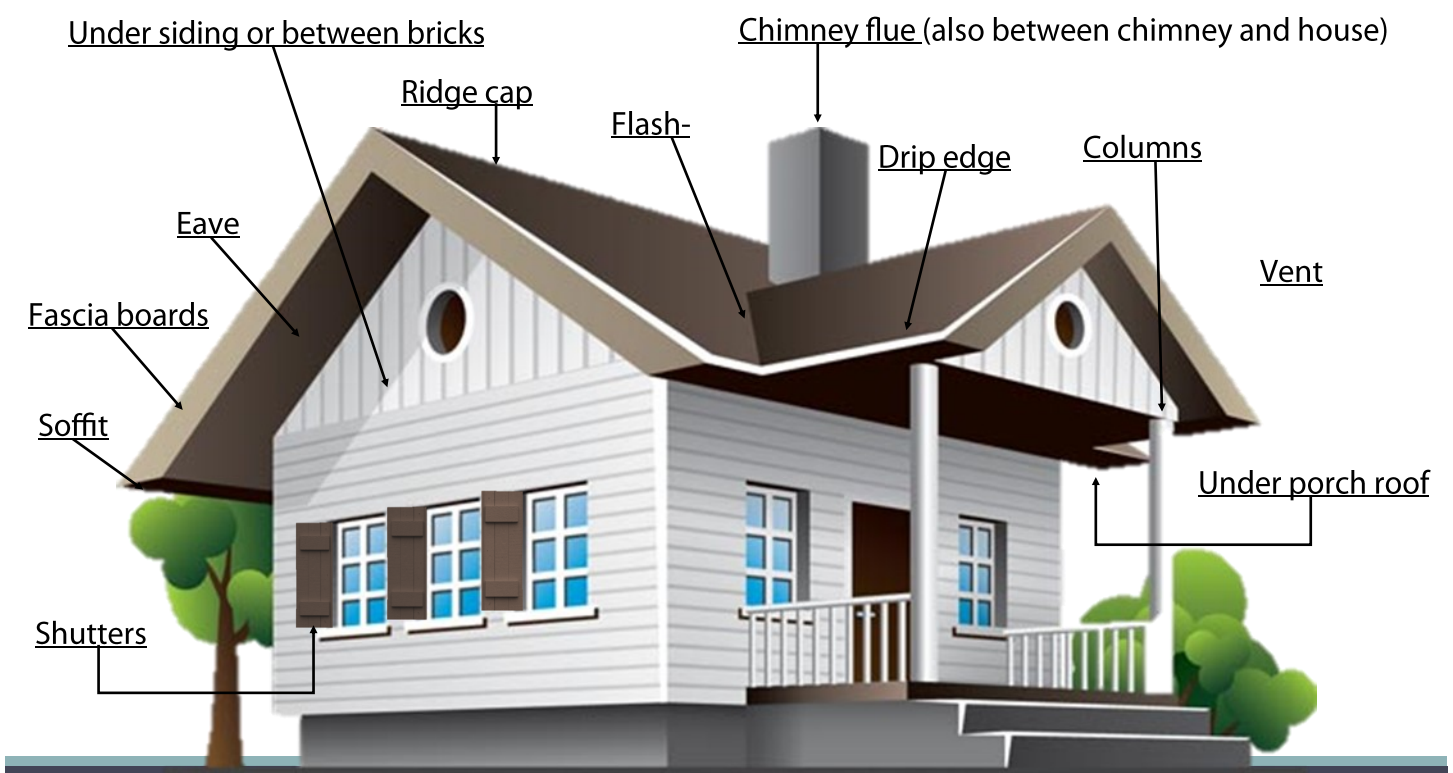


BATS



BATS INSIDE A HOME & ENTRY POINTS

Occasionally a bat will accidentally enter a interior space. Finding a single bat inside of a home or office does not necessarily mean there is a colony. Bats in homes occur more often during the summer maternity season when juveniles get lost and are separated from their mother. Occasionally a bat may enter a home when waking up from torpor or during seasonal changes in range. A bat can enter a home accidentally through open doors or window, uncapped chimneys, or by being brought in by a pet. If a bat in found in the home, potential entry points and common roost sites should be examined and sealed if necessary





BATS



LOUISIANA BAT SPECIES

SPECIES LIKELY TO BE ENCOUNTERED IN HUMAN INHABITED DWELLINGS



Brazilian free-tailed bats (*Tadarida brasiliensis*), the species most commonly encountered by humans, will utilize attics and other small openings in homes for roosting. Nuisance calls increase during the summer months when females form large maternity colonies in the attics of homes. These colonies can number from a few hundred individuals to several thousand, and individual bats are rarely found. In homes, the species can be identified by the presence of a strong ammonia odor, an audible chirping sound, and the visible presence of a tail extending beyond the uropatagium.



Evening (*Nycticeius humeralis*, top) and big brown (*Eptesicus fuscus*, bottom) bats look similar in physical appearance, however an evening bat is one-third to one-half the size of a big brown. Both species utilize attics and other small openings in a home for roosting throughout the year. Maternity colonies formed by these species are traditionally small, less than 20 individuals, and unlike Brazilian free-tailed colonies may go unnoticed in the attic of a home.

Why do bats use human inhabited dwellings for roosting?

During summer months bats will utilize human inhabited dwellings to form maternity colonies in attics, under siding, or behind bricks. These colonies begin to form in March with pups born early to mid-summer. Pups are born hairless and weighing approximately 1/3 of the mother's total body weight. After 4 to 5 weeks of nursing, pups are able to fly and feed on their own. During early fall the colony will move off and head for winter hibernation





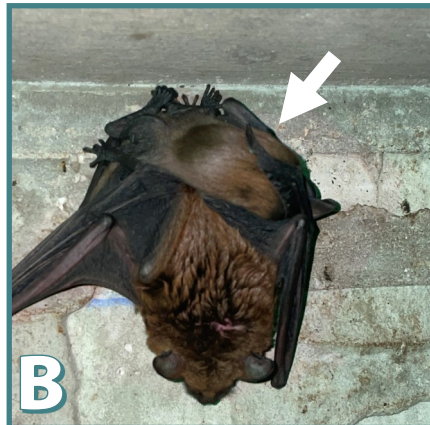
BATS



BAT PUPS

Bat maternity season is from May through late August. Generally pups are born starting in late April and can extend through July. The timing of birth varies by species and individual bat. A single female will give birth to from one to four pups with two being common.

During wildlife control work, pups can be difficult to spot. Like all mammals, bats nurse their young which means pups are often hidden underneath the mother. Special care should be taken to examine bats from all angles to determine if pups are present.



A) A female big brown with two pups less than one week old (denoted by arrows) and an adult Brazilian free-tailed bats.

B) A female big brown with a single pup (denoted by arrow) approximately 2 to 2.5 weeks old.

Both photos were taken on June 3, 2021.

3 day old big brown pup



16 day old big brown pup



Big brown mother and pup



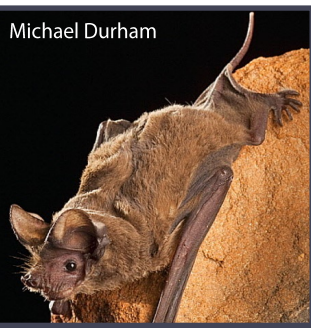
Photos: McMaster Bar Lab



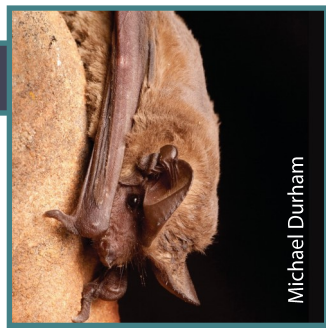
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BAT SPECIES: QUICK IDENTIFICATION



Michael Durham



Michael Durham

Brazilian Free-tailed

- Strong ammonia odor
- Big colony of 50 or more individuals
- Obvious tail
- Wide ears that come together at the top of the nose

Big Brown	Evening
-----------	---------

Big brown and evening bats are normally found in small colonies of less than 25 individuals.



Ann Froschauer



David Arbor



James Kiser

Top: Evening
Bottom: Big Brown

A dollar bill is 6.14 inches in length. A big brown bat would reach within the green shaded area and is 3.8 to 5 inches in length. An evening bat is much smaller, 3.6 to 4 inches in total length, and would reach within the purple shaded area.



BATS

ESCAPE

SAFE REMOVAL : ESCAPE

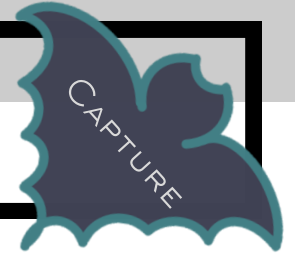
HOW TO SAFELY REMOVE A BAT FROM INSIDE A HOME WITHOUT HANDLING

- 1) Stay Calm.
- 2) Close all doors allowing further ingress into the home.
- 3) Open all windows and doors creating escape exits. Remember to remove any possible obstructions, pull back all curtains and lift blinds.
- 4) Turn all of the lights out in the room.
- 5) Move people and pets to another room, wait a minimum of 30 minutes to allow the bat to escape.





BATS



SAFE REMOVAL : INSIDE CAPTURE

HOW TO SAFELY REMOVE A BAT FROM INSIDE A HOME WITHOUT HANDLING

- 1) Stay Calm.
- 2) Wait until the animal is still.

Flying bats are almost impossible to catch,. If they are caught, the bat may panic and bite as a method of defense.
- 3) Wear thick gloves and quietly approach the bat. Place a shoebox, plastic container, coffee can or other similar object over the bat. Be sure the object does not have holes larger than one quarter inch in size.
- 4) Slide a piece of cardboard, thick paper or similar item between the bat and the surface (wall/ceiling/floor).

If a single thick sheet is not available, junk mail is a great substitute.
- 5) Keeping the items in place, take the bat outdoors. Place the bat on a tall surface such as vehicle roof, patio table, tree limb, and remove the top.

Bats start to fly by gliding, it is extremely difficult for them to get enough lift to fly from ground level.
- 7) Leave the bat alone and allow the animal to fly away.





BATS



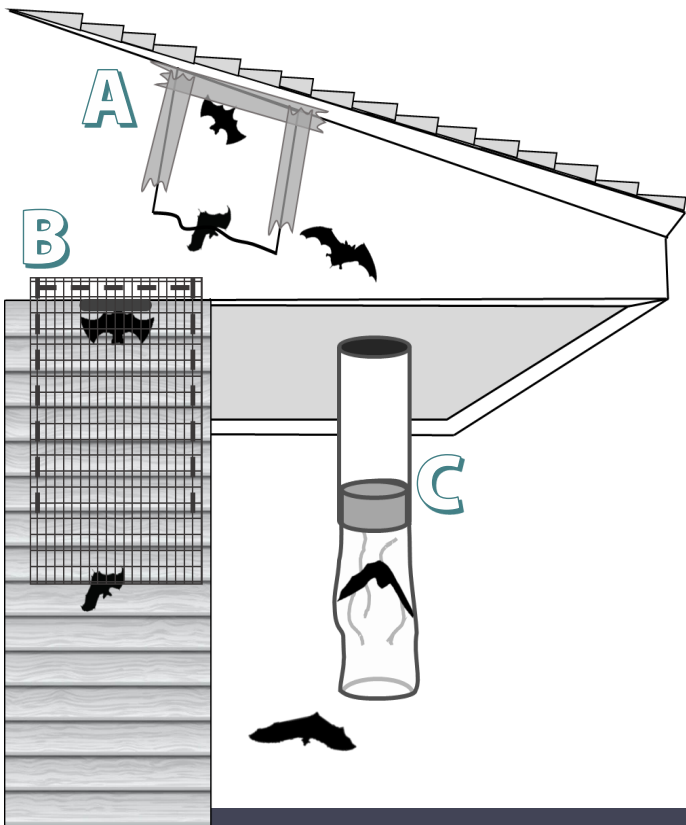
EXCLUSION METHODS : APPROVED

Exclusion Materials

- All exclusion material must be non-abrasive.
- Approved Materials: Plastic sheeting, PVC pipe, window screening, 1/2" or less metal hardware cloth, plastic structural grade netting with 1/2" or less openings.
- All materials must be taut.

IMPORTANT

IF YOU NEED SOMEONE TO EXCLUDE BATS FROM YOUR HOME, THEY MUST BE A NUISANCE WILDLIFE CONTROL OPERATOR (NWCO) LICENSED THROUGH THE LOUISIANA DEPARTMENT OF WILDLIFE AND FISHERIES.



A Tape plastic sheeting at top and down two sides over the entry/exit point. Do not tape the bottom 3" of the sides, allow at least a 1/2" of space between sheeting and structure.

B Attach netting to a 1/2" wood strip. Staple netting at top and down two sides over the entry/exit point. Do not staple the bottom 3" of the sides and allow at least a 1/2" of space between netting and structure.

C PVC pipe with plastic sheeting sleeve taped to pipe. PVC: 10" L x 2" D. Sleeve: 5" L x 2" D.



BATS



EXCLUSION METHODS : UNAPPROVED

Exclusion Materials

- Any material which increases the likelihood of bat or migratory bird entanglement is not a legal method of control.
- Canned expandable foam is prohibited for use when bats are present and/or active.
- Unapproved Materials: Expanding foam, bird netting, woven netting, monofilament netting, any netting with an opening of greater than 1/2".

Exclusion Timing

- Exclusion may occur from September through April, prior to maternity season. Exclusion should not occur during maternity season, May through August.
- NWCO's must make every effort to visually inspect the colony for the presence of bat pups prior to any and all exclusion efforts. If pups are present, bats shall not be excluded.
- Pup mortality will result in a foul odor, blow fly and maggot infestation. This is a hazard to human health. Exclusion must be delayed until juvenile bats are able to fly and evacuate the roost.
- Exclusion of adults during maternity season results in pup mortality which is a violation of Title 76, Part V, §127 F. 2.b . Violators will be subject to citation by the LDWF Enforcement Division.



**BATS SHOULD BE
BE CONTROLLED BY
EXCLUSION**



**BATS CANNOT BE
CONTROLLED BY CHEMICAL
OR LETHAL MEANS**



**BATS MAY BE CONTROLLED
BY EXCLUSION OR BY
CAPTURE AND RELOCATION
ONLY. BATS SHALL NOT BE
CONTROLLED BY ANY
LETHAL METHODS**



Entanglement of migratory birds or raptors is considered a violation of the United States Fish and Wildlife Service Migratory Bird Treaty Act. Violators of this federal legislation will be subject to citation by the Louisiana Department of Wildlife and Fisheries Enforcement Division.



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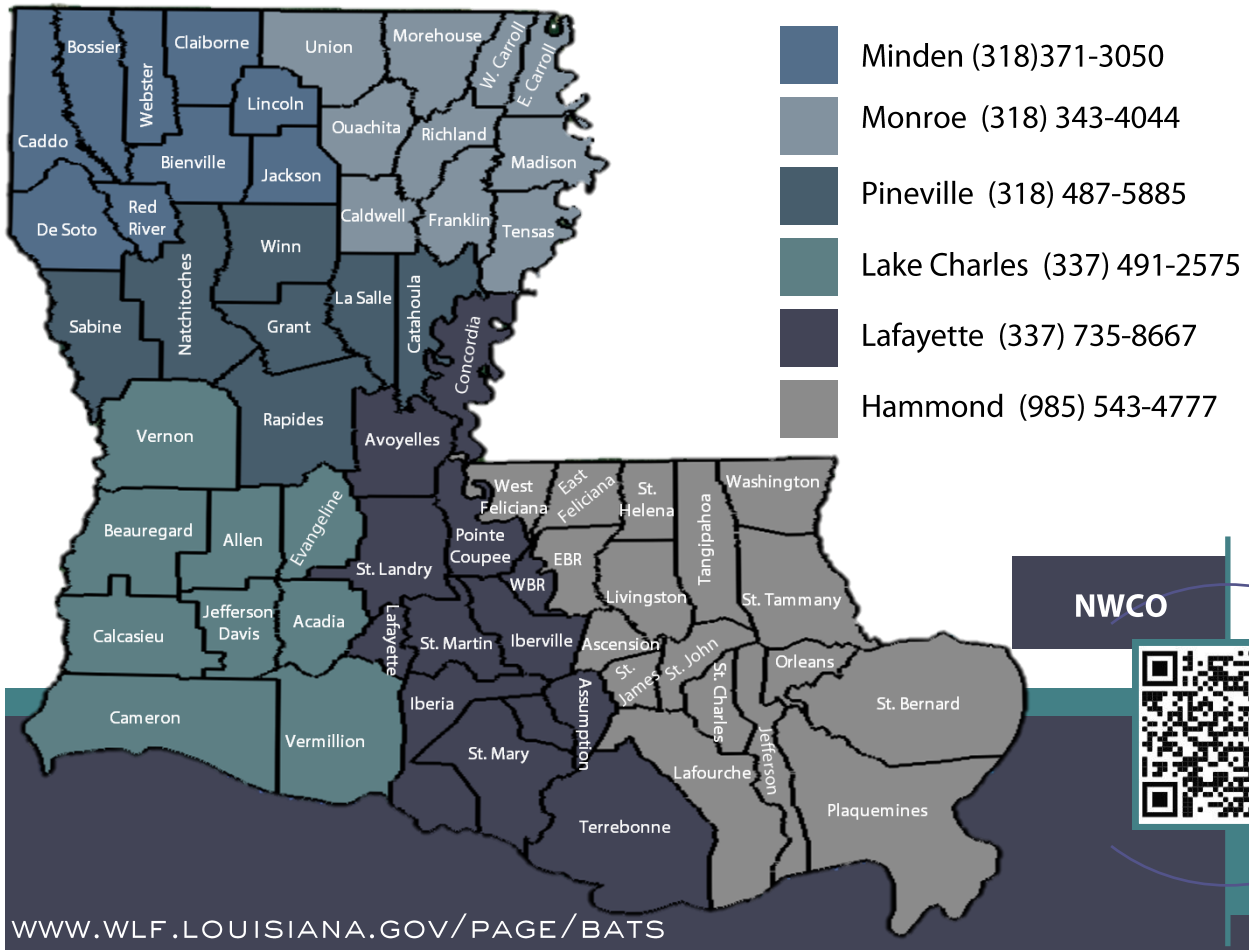


FINDING A LICENSED NWCO

Anyone conducting or participating in bat exclusion or removal MUST be a Nuisance Wildlife Control Operator (NWCO) licensed through the Louisiana Department of Wildlife and Fisheries

- 1) Scan the QR code below
- 2) Contact your local Louisiana Department of Wildlife and Fisheries Regional Office
- 3) Visit www.wlf.louisiana.gov

Click on Conservation then Nuisance Wildlife



NWCO

NWCO

WWW.WLF.LOUISIANA.GOV/PAGE/BATS



BATS



GROUNDED BATS

If you find a bat on the ground, do not touch the animal with bare hands always wear gloves. Bats are not aggressive, however they will bite in self-defense.



Eastern Red bat with attached pups.

Bats maybe grounded for many reasons such as illness, injury, or age. **Illness:** Less than 1% of bats are positive for rabies, however you should never handle a bat without gloves. Additionally, children and pets should be kept away from the animal. During summer months, Eastern Red, Seminole, and Northern Yellow bats can become injured during storms or by blue jay attacks while roosting in foliage or moving young. Similar to birds, bats are not born ready to fly and a grounded pup or juvenile is defenseless.

If a bat is orphaned or shows signs of trauma or injury, contact a licensed Wildlife Rehabilitator, the Louisiana State University School of Veterinary Medicine Wildlife Hospital, or the local Louisiana Department of Wildlife and Regional Office.



If you find a sick or injured bat, please contact the Louisiana Department of Wildlife and Fisheries or a local wildlife rehabilitator.





BATS



SAFE REMOVAL : GROUNDED BAT

HOW TO SAFELY REMOVE A BAT GROUNDED BAT WITHOUT HANDLING

- 1) Stay Calm.
- 2) Wait until the animal is still.

Flying bats are almost impossible to catch,. If they are caught, the bat may panic and bite as a method of defense.
- 3) Wear thick gloves and quietly approach the bat. Gently touch a tree branch, at least three feet in length, to the feet of the bat. The animal will grab the branch.
- 4) Slowly and carefully move the bat into the branches of a nearby tree.
- 5) Using a ladder or step stool, gently secure the branch a minimum of eight feet from the ground, into an area of the tree where leaves will provide cover.

Use extra caution, a grounded bat in the summer may be a mother with one to two pups attached. Sudden movement can frighten the female and lead to pup abandonment.
- 7) Do not place the bat on the trunk of the tree. This location will make It difficult to fly to an appropriate roost location and make the animal vulnerable to predators.



Bat World Sanctuary



BATS



BATS ROOSTING IN UNUSUAL LOCATIONS



Occasionally bats are found roosting on the exterior walls of a building. In some cases these animals simply did not make it back to their roost before sunrise. Other times, they may be injured, dehydrated, or ill and do not have the energy required to return to a roost. In the spring and summer, a bat roosting on the exterior wall of a building may simply be a juvenile learning to fly. No matter the cause, bats found roosting on the exterior walls of a building should be left alone. Normally the animal will fly away on its own in the evening. If the bat remains in the same location for two or more days it may have an illness or be injured.



If you find a sick or injured bat, please contact the Louisiana Department of Wildlife and Fisheries or a local wildlife rehabilitator.

**LDWF
Regional Offices**



**Wildlife
Rehabilitators**





BATS



Why Do Bat Colonies Matter?

Bats are important for pest control, seed dispersal, and pollination world-wide. White-nose syndrome, caused by a fungus, is responsible for more than 6 million bat deaths in the United States since its discovery in 2006. In 2021 the fungus was detected in Louisiana for the first time.

Bats roost in trees and man made structures due to lack of caves. Knowing colony location and size, and species distribution across the landscape, allows us to more effectively monitor the potential for disease spread into Louisiana.



Merlin Tuttle

POPULATION MONITORING

Please join our citizen-science initiative encouraging Louisiana residents to monitor bat populations throughout the state.



How Can You Help?

- If you have a bat house or are installing a bat house
- Know the location of a roost
- Are interested in conducting acoustic surveys

Please Contact
Nikki Anderson

ldwfwildlifehealth@wlf.la.gov

225-765-5030





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BATS



CONTACT

If you have questions or observe a bat displaying signs of illness, please contact:

Nikki Anderson

Wildlife Disease Biologist

Louisiana Department of Wildlife and Fisheries

(225) 765-5030

nanderson@wlf.la.gov

James M. LaCour, DVM.

**State Wildlife Veterinarian, Wildlife Health and Disease Surveillance
Program Manager**

Louisiana Department of Wildlife and Fisheries

(225) 765-0823

jmlacour@wlf.la.gov

**For additional information on the Wildlife Rehabilitator or Nuisance Wildlife Control
Operator**

Melissa Collins

Wildlife Biologist, Permits Coordinator

Louisiana Department of Wildlife and Fisheries

Phone: (985) 543-777

E-mail: mcollins@wlf.la.gov